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A DESCRIPTION OF THE ENLISTED SERVICE ROTATION SYSTEM

Roberta J. Smith

A Rand Note

prepared for the

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE/MANPOWER
RESERVE AFFAIRS AND LOGISTICS

Rand
SANTA MONICA, CA. 90406

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PREFACE

This note was prepared as part of Rand's Defense Manpower Studies Program, sponsored by the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics)--OASD (MRA&L). This study was conducted under Task Order I-2, Rotation Base.

With manpower issues assuming an ever greater importance in defense planning and budgeting, the purpose of this studies program is to develop broad strategies and specific solutions for dealing with present and future defense manpower problems. This includes the development of new methodologies for examining broad classes of manpower problems, as well as specific problem-oriented research. In addition to providing analysis of current and future manpower issues, it is hoped that this studies program will contribute to a better general understanding of the manpower problems confronting the Department of Defense.

The report describes current DoD policies and isolates problem areas relating to the rotation of enlisted military personnel among different location/occupation assignments. It emphasizes policies and practices of the individual services in defining and managing the rotation base. As such, its purpose is to lay the groundwork for further research.

SUMMARY

Current U.S. defense policy calls for locating about 37 percent of total military personnel outside the continental United States (CONUS). Assigning personnel to meet these overseas requirements introduces significant complexity into management of the military manpower system. In developing assignment policy, decisionmakers must take several objectives into account, including maintaining a high level of readiness and loyalty among overseas personnel, treating military personnel and their families equitably, planning for successful career development, and minimizing the cost of the manpower system. Attempting to meet these often conflicting objectives results in a complex set of policies regulating the assignment of military personnel. These policies govern the eligibility and availability of personnel for assignment, lengths of and locations for assignments, housing and moving allowances, and family accompaniment for tours, among others.

In addition to the effects on assignment policy caused by overseas requirements, there may be significant and perhaps more important indirect effects in other elements of the military manpower system. Many personnel consider certain non-CONUS assignments undesirable in comparison with CONUS assignments. The necessity for rotation may therefore alter the attractiveness of the service as a career and thus affect retention and the structuring of incentives (bonus payments, retirement) to retain personnel.[1] The relocation of military personnel affects individual morale, productivity, and

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[1]A central idea in assignment policies directs that military personnel be sent to location/occupation assignments for some reasonable period of time and then that they be relocated. Periodic relocation of personnel is referred to as rotation.

readiness of the force. Moreover, military manpower requirements and manpower costs are higher because it is necessary to maintain a pool of personnel in CONUS to fill non-CONUS assignments. Efficient substitution of different types of personnel (career/first-term, women/men, civilian/military) is constrained by rotation policies and the necessity of maintaining a pool to fill overseas assignments. Because of these broad policy effects, the study of rotation policies must take a manpower system orientation, and it is the long-term objective of this research project to address these broader effects.

The Department of Defense's (DoD) interest in rotation policies derives from the direct expense of rotating service personnel and from the more important effects on force size, force structure, retention, productivity, and efficient substitution of personnel. Initially, DoD needs a better understanding of each service's rotation policies and practices along with the rationale supporting them. Accordingly, this note describes the services' current rotation policies to illuminate rotation-originated constraints on manpower system elements from their point of view. It also defines and describes the rotation base and its policy implications from three different perspectives: service-wide, specialty-specific, and career/first-term mix.[1] It describes the current distribution of military personnel by service, spotlighting specialty-specific problem areas, and discusses service-specific manpower policies that are used to manage rotation. The primary research methods used to prepare this study were interviews with key service personnel and evaluation of

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[1]For rotation (as opposed to assignment) policies, locations are divided into two broad categories: the continental United States and Hawaii (CONUS) and all others (non-CONUS). When vacancies in non-CONUS spaces occur, CONUS-stationed personnel move into non-CONUS slots. CONUS requirements are met by personnel returning from non-CONUS assignments and by other CONUS-stationed personnel. This CONUS manpower pool is referred to as the rotation base and insures that manpower needed to rotate personnel to non-CONUS occupation/location assignments will be available as required.

service documents and data sources. Finally, this note describes two directions for future research using rotation data from the 1978 Military Personnel Survey and the Army Enlisted Master File records.

The rotation-related problems of each of the services, although originating from similar causes, differ markedly in scope. The services also adopt somewhat different policy approaches to mitigating the effects of rotation. There is agreement that poor retention is the major problem, but there is no analytical awareness of rotation's broader effects.

Although the majority of Army authorizations are in the United States, the majority in certain military occupational specialties (MOS) are in overseas locations. If over 55 percent of a certain specialty's requirements are abroad, that MOS is designated space-imbalanced by the Army. As of January 1977, nearly half (40,000) of these space-imbalanced authorizations were in major weapons or communications systems. They typically experience a 25 to 75 percent split between CONUS and non-CONUS locations. Moreover, these MOS are highly technical and require well-trained and experienced specialists. Because they must spend a greater percent of their careers in non-CONUS locations where working conditions are not considered ideal, soldiers in these valuable specialties exhibit poor retention rates. Training rates to replace them are running as high as 70 percent a year.

The Navy has a three-way split in rotation areas--ashore CONUS, ashore overseas, and afloat. Afloat billets represent 60 percent (229,000) of total enlisted Navy authorizations. Rotation problems stem mainly from the sea-to-shore exchange of tours and are driven by four main factors: (1) large percent of sea billets, (2) priority of manning sea billets, (3) unavailability of shore billets, and (4) inventory overages and shortages, especially in critical ratings. These ratings (e.g., boiler technicians, machinist's mates, gunner's mates) experience long sea tours of up to 60 months, whereas sufficiently staffed ratings have tours of 36 months. In particular, critical ratings have inherently unappealing working conditions and duties.

Because of the prospect of long sea duty with extensive deployments, recruitment and retention in these occupations are difficult.

The Marines have problems stemming from the disproportionate number of dependent-restricted duty or short hardship tours--27,000 out of 46,000 overseas billets in 44 different geographical areas. They are located in remote or undesirable areas and exclude dependents. Because of the large proportion of hardship tours, Marines expend more funds for rotation-related moves (55 percent of the 1976 PCS budget) and have a more uniformly severe retention problem.

The U.S. Air Force has a minor rotation problem compared with the other services--only 33 percent of its total force is non-CONUS. However, CONUS-Overseas Imbalanced Skills affect 34,000 of the 442,000 Air Force enlisted personnel in the communications, intelligence, and support areas.

ACKNOWLEDGMENTS

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Of course, the author is solely responsible for any errors or omissions that may remain.

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I. INTRODUCTION

To meet the defense needs of the United States and its allies, U.S. military personnel are stationed in different areas of the world. Assigning personnel to meet these requirements is a complex management process. Most personnel consider overseas assignments to be undesirable in comparison with assignments in the United States. Assignment policies must take several objectives into account, including maintaining a high level of readiness and loyalty among overseas personnel, treating military personnel and their families equitably, developing successful careers, and minimizing the cost to the manpower system. These often conflicting objectives result in a complex set of assignment policies for military personnel, governing the availability of personnel, lengths of assignments, compensation, family accompaniment for tours, and other conditions. The distribution of assignments and assignment policies also cause constraints throughout the manpower system. For instance, the present system of assignments affects manpower requirement and retention and constrains substitution of civilian and military women for male military personnel.

Historically, there are two options for meeting extensive overseas stationing of military personnel. One approach would be to follow the model of the French Foreign Legion or Overseas British Indian Army. Military personnel would be permanently assigned to autonomously managed U.S. commands in different geographical areas--e.g., to the CONUS Command, the U.S. European Command, or the U.S. Asian Command. However, such a scheme has not been perceived as suitable to the American experience. Aside from the obvious social drawbacks, military strategists claim that independent armies reduce the ability to respond to changing world situations and possibly create long-term problems in orientation or loyalties among forces permanently assigned to foreign lands.

U.S. policy is to change overseas personnel continuously. At the present time, this policy directs that military personnel be sent to location/occupation assignments for some reasonable period of time and then relocated. Periodic relocation is referred to as *rotation.*

For rotation purposes (as opposed to assignment purposes), geographical areas are broadly defined as either the continental United States and Hawaii (CONUS) or non-CONUS. CONUS contains a manpower pool referred to as the *rotation base.* It insures that manpower needed to rotate personnel to non-CONUS occupation/location assignments will be available as required. When vacancies occur in non-CONUS spaces, CONUS-stationed personnel move into non-CONUS slots. Personnel returning from non-CONUS assignments and other CONUS-stationed personnel meet CONUS requirements. The rotation base, then, is a subset of CONUS-based personnel that supplies replacements for non-CONUS assignments and should be viewed as a concept used for planning purposes to assure that supplies of manpower are sufficient to balance the inflow and outflow of qualified personnel as they are rotated among CONUS and non-CONUS locations.

There are several reasons for the concern the DoD has over rotation policies and the rotation base. Rotating service personnel is expensive and affects force size, productivity, efficiency, and morale. Recent emphasis on reduction of costs incurred from permanently relocating military personnel and their dependents (Permanent Change of Station or PCS moves) has implications for the size and composition of the rotation base. Additionally, the rotation system affects first-term attrition and career-force retention and has implications for manpower policies such as first-term/career mix, civilian/military substitution, and the number and type of occupations women are assigned to in the military. To fully assess future manpower policies and these rotation-related issues, DoD needs a better understanding of each service's rotation policies and practices along with the rationale supporting them.

Because of these broad effects, the study of rotation policies must have a systems orientation. Evaluation of changes in rotation policies must trace effects throughout the manpower system to be credible. This outlook on rotation research will put greater emphasis on the interactive workings of the system, thereby lending greater understanding and widening policy options. The following questions constitute the long-term research agenda:

- o What are stated and actual service-specific rotation policies?
- o How large is the rotation base in each service and how is it calculated?
- o What affect does rotation have on retention decisions?
- o What affect does rotation have on manpower requirements for different types of military and civilian manpower?
- o What types and amounts of incentives can make rotation more efficient?

The research reported here addresses the first two items. An attempt was made to understand rotation-originated constraints on manpower policies from the *services' point of view*. Accordingly, personnel managers in the various services were interviewed (see the appendix) and their responses were combined with information found in computer model documentation, service regulations, DoD guidelines, service-originated data, and research reports. The data-dependent results are limited and in a sense tentative because of these qualitative information sources. Subsequent research will have to explore and statistically analyze actual numerical data to validate the significance of the current understanding of these rotation-related problems.[1]

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[1]Rand's ongoing statistical analysis of the 1976 DoD Personnel Survey files indicates the negative effects rotation may have on retention. Reliable results, significant at the 1 percent level, show that first-term personnel in rotation-imbalanced specialties reenlist at lower rates. These occupations are discussed in Section III.

The current rotation-related concerns of the personnel managers interviewed may be summarized as follows: The necessity for rotation moves strongly alters the attractiveness of the service as a career and thus affects retention and the structuring of incentives (bonus payments, retirement) to retain military personnel. The relocation of military personnel affects individual morale, productivity, and readiness of the force. Overall military manpower requirements and manpower costs are higher because of the necessity of maintaining a rotation base. Efficient substitution of different types of personnel (career/first-term, women/men, civilian/military) is constrained by rotation policies.

II. BACKGROUND OF THE PROBLEM

WORLDWIDE DISTRIBUTION OF U.S. FORCES

Enlisted personnel managers assume the defense posture developed by military strategists requiring the presence of U.S. military in foreign lands as a "given condition." In the process of efficiently allocating human resources to meet these prespecified defense needs, policies must be developed to guide basic management decisions: What skills are needed? Where? Who and how many are sent? For how long? Under what conditions and constraints? At what cost?

Table 1 shows the worldwide distribution of DoD military strength in 1976 by service and location. These data reflect assigned strength based on available inventory and mission requirements. Of special interest is that 1,292,300 military personnel are stationed in CONUS and 779,700 in non-CONUS locations. Of those in foreign countries,[1] more than half are stationed in European NATO countries. The Army has the largest portion of its personnel assigned to non-CONUS locations. The Marines and especially the Navy have a more complicated situation because they are split between ashore and afloat assignments, as well as between CONUS and foreign locations. The Navy has 321,000 total shore-assigned personnel, with 73,000 of these in overseas locations. Their total afloat population is 207,000, meaning that 248,000 Navy personnel are in CONUS and 280,000 in non-CONUS assignments--or over half of the total Navy population is assigned out of the continental United States.

The necessity for assigning then reassigning such a vast number of personnel among such diverse locations has led planners to develop heuristic approaches to rotation management. The key concept in this procedure is the rotation base, used for planning purposes to assure that supplies of manpower are sufficient to balance the inflow and outflow of qualified personnel as they rotate among locations. Like most planning tools, it can reveal different policy options viewed from different perspectives and can reveal different aspects of the same problem.

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[1] 330,500 of the non-CONUS total are stationed in U.S. Territories and special locations.

Table 1

DOD WORLDWIDE PERSONNEL STRENGTHS[a]
AS OF DECEMBER 31, 1976

			Navy		Marines		
	Army	USAF	Ashore	Afloat	Ashore	Afloat	Total
CONUS	475,926	435,224	248,580	NA	132,589	NA	1,292,319
Non-CONUS	299,125	144,640	72,778	207,220	48,735	7,182	779,680
(European NATO)	(197,261)	(62,340)	(9,669)	NA	(921)	NA	(270,191)
Total	775,051	579,864	321,358	207,220	181,324	7,182	2,071,999

SOURCE: OASD(COMPT), *Selected Manpower Statistics*, May 1977.

[a]Includes officers.

SERVICE-WIDE PERSPECTIVE

Table 2 gives the *enlisted authorizations* for the rotation base as calculated by each of the services. The actual numerical values are calculated in terms of authorizations, *not strength*, because the rotation base calculations are a *device* used in the planning and policy-setting process. The "CONUS" and "Non-CONUS" columns give the services' authorizations in terms of geographical dichotomy. "Rotation Base" shows the *subset of total CONUS authorizations* the services use in planning their macro-rotation decisions. "Percent of CONUS authorizations" measures the rotation base subset of CONUS authorizations. "Strength" is total enlisted strength, and "Percent of Strength" measures the rotation base in terms of the total worldwide U.S. enlisted military population.

Each service has its own way of defining conditions that generate the numerical values of its rotation base requirements. The Army assumes that for every overseas short tour, there should be two CONUS-stationed personnel; and for every overseas long tour, there should be two-thirds of a soldier in CONUS. Accordingly, their calculations are

Table 2

THE ENLISTED ROTATION BASE

(Thousands)

	Authorizations		Rotation Base[a]	Percent of CONUS	Strength	Percent of Strength
	Non-CONUS	CONUS				
Army	229	337	193	57	696	28
Navy	242	131	88	67	468	19
USAF	110	312	108	35	470	23

SOURCE: OASD (COMPT), *Selected Manpower Statistics*, May 1977.

[a]Data supplied by individual services, for 1977.

driven by the number of overseas requirements and length of overseas tours. The Navy assumes that all CONUS shore billets for E5 and above--except those reserved for enlisted women--compose the rotation base. The Air Force has more restrictions than either the Army or the Navy because it considers what would be acceptable 20-year career patterns for its airmen. In general, the size of the rotation base is determined not only by overseas authorizations but also by set lengths of CONUS tours, a maximum overseas tour length of eight years, and a maximum of three remote overseas tours during the typical 20-year career.

These numbers inadequately represent the "true" composition of the operational rotation base and how its peculiar problems arise. To clearly understand the dynamics of the rotation system and to calculate a meaningful total, the rotation base must be viewed first as a specialty and not a servicewide requirement, and a distinction must be made between first-term and career force rotation patterns.

A SPECIALTY-SPECIFIC PERSPECTIVE

According to the figures in Table 2, the total rotation base requirement is less than total CONUS requirements, so a sufficient number of personnel should always be available. For the Army, Marine Corps, and the Air Force, the majority of requirements as a whole are located in CONUS. The Navy has a servicewide distribution that places most billets at sea, so it is an exception. In fact, when requirements are studied on a specialty basis, the picture is entirely different. Although the rotation base is legitimately a subset of CONUS requirements for many specialties, in some the distribution of requirements between CONUS and non-CONUS locations is imbalanced. The majority of a service's billets may be located in CONUS, but *in certain occupations* they are located overseas. These imbalances may place 70 to 100 percent of a specialty's tours in non-CONUS locations. Yet these specialties must also have a CONUS sustaining base for rotation purposes.

The size of the rotation base needed for a given specialty will depend on three factors: non-CONUS requirements, CONUS requirements, and the average tour lengths for non-CONUS requirements. For most

specialties, there will be sufficient CONUS requirements to feed the non-CONUS requirements, assuming reasonable tour lengths. However, where flows of personnel that provide for reasonable tour lengths cannot be maintained between CONUS and non-CONUS, a "rotation base billet" must be "created" in CONUS (essentially a "reserved space" for returning personnel from imbalanced specialties). The policy options the services exercise in managing the specialty-specific rotation base are summarized below (see Table 3).

General Duty Billets

Certain CONUS assignments have general skill requirements and can be qualified for on the basis of grade alone. Specialists in excess supply in CONUS can be assigned to these unspecialized skills. The Marine Corps and the Navy follow this practice.

Reclassification

Specialists in excess supply in CONUS may have their primary skills reclassified. They are retrained and thereafter carry a new primary skill. The Army follows this practice.

Table 3

ROTATION MANAGEMENT POLICY OPTIONS

	Army	Navy	Marines	USAF
General-duty billets		X	X	
Specialty reclassification	X			
Cross training				X
Specialty substitution	X		X	
Grade substitution	X	X	X	X
Protection from civilization	X	X	X	X
Militarization	X	X	X	X
Creation of CONUS billets		X		X
Overseas tour extensions	X	X	X	X
Intertheater transfers	X	X	X	X

Cross Training

Cross training does not require changing the primary skill. Instead, the returning specialist is trained in a secondary skill in which he is assigned for CONUS duty. Typically, his future non-CONUS assignments will be in the original primary skill. The Air Force follows this practice.

Specialty and Grade Substitution

Certain specialties are closely related or can be filled by personnel in a lower grade. Thus, returning specialists may fill substitutable specialties or bypass grade requirements for the requisitioned CONUS billet. MOS substitution is used in the Marines and Army. All services may substitute over grade.

Militarization of Billets and Protection From Civilianization

To assure that imbalanced specialties have CONUS slots for returning specialists, rotation managers will protect those authorizations from civilianization. Thereafter, these skills must be performed by military personnel. Conversely, certain duties currently performed by civilian labor may be militarized. These options may be used by all services.

Creation of CONUS Billets

In some cases, it may be necessary to increase CONUS requirements. New CONUS billets are created to allow returning specialists to perform in their specialty. The Navy follows this practice and it is an option for the Air Force.

Extensions and Intertheater Transfers

The major way to decrease rotation base requirements is to decrease the rates of flow from CONUS. Non-CONUS tour lengths may be lengthened by extending the time personnel are assigned in their current overseas tour or by allowing them to bypass CONUS in their

next assignment. All services permit indefinitely long voluntary extensions of current overseas tours, so long as personnel maintain proficiency in their skills and do not engage in behavior embarassing to the U.S. government. Also voluntary, inter or intra-theater transfers (ITT) accomplish the same effect but relocate personnel in a different non-CONUS location. ITTs are also permitted by all services.

A rotation space is not necessarily an addition to overall manpower requirements but can be simply a designation of a currently authorized space for rotation purposes. Furthermore, the total base is not simply the sum of all specialty-derived rotation spaces; some spaces (e.g., general duty billets) can serve as rotation spaces for more than one specialty. And, most important, the rotation base requirement can be decreased by increasing the number of non-CONUS extensions and inter-theater transfers. Thus the "total" rotation base required is highly dependent on the strategy used to establish rotation spaces and to implement incentives used to lengthen overseas tours voluntarily. The rotation base requirement thus depends on several variables and cannot simply be calculated as is done by the services now--the numbers in Table 2 may be upward-biased--but must be carefully derived taking into account policies (especially incentives), specialty-specific requirements, and *effective* tour lengths.

FIRST-TERM/CAREER PERSPECTIVE

Analysis of the effects of rotation's demand on the supply of manpower for non-CONUS locations must make a distinction between first-term and career personnel rotation policies. Usually first termers will spend a disproportionate amount of their terms in non-CONUS locations, unless their specialty has only CONUS requirements. For example, the highest probability assignment for a first-term soldier is Germany; for a first-term sailor, afloat; for a first-term marine, Okinawa. Moreover, DoD guidelines restrict the number of assignments first termers may have regardless of standardized tour lengths because the supply of first-term personnel comes from the civilian population.

More senior personnel typically are rotated between non-CONUS and CONUS locations in sequence, so that a non-CONUS assignment is followed by a CONUS assignment, where non-CONUS assignments are for set periods of time. Thus the supply of career personnel for overseas assignment must be drawn from a CONUS rotation base, not a civilian pool of 18 to 20 year olds. This sequence of assignments and the manpower supply source make rotation a career force management problem.

Accordingly, any redistribution of the ratio of first terms to careerists based on relative productivity measures should account for secondary effects from the rotation system. The more careerists within a specialty, the more severe retention or decreasing productivity problems may be if there are within-specialty space imbalances. In any cost analysis justifying changes in the first-term/career mix, tradeoffs should be made between anticipated benefits from greater numbers of skilled experienced personnel and costs accruing from incentive systems designed to maintain a balanced flow between CONUS and non-CONUS locations.

REASONS FOR DOD INTEREST IN ROTATION AND THE ROTATION BASE

Two aspects of the rotation of military personnel have recently received substantial attention: (1) the costs and (2) the constraints imposed by rotation requirements on force structure changes.

Rotation-Related Costs and Benefits

Costs directly attributable to rotation are expenditures for moving personnel, their dependents, and household goods from one location to another. These costs are categorized as PCS costs mainly because rotated personnel are reassigned for at least a year. Because of their high visibility, rotation-related PCS costs have recently received a great deal of DoD's attention and concern. Of course, not all PCS moves are for rotation. Some are for accessions, separations, training, organized unit moves, and operational reasons. The emphasis has been placed on

rotation moves, however, because analysts believe they are the most sensitive to certain policy changes and because they are the most expensive single category. Table 4 breaks out total enlisted rotation costs for each service. Comparison between the projected costs over two years indicates the efforts the services have been making to decrease PCS costs.

Table 4

ENLISTED ROTATION PCS MOVES AND COSTS[a]

Service	Year	No. of Rotation Moves (Thousands)	Percent of Total PCS Moves[b]	Cost of Rotation Moves (Millions)	Percent of Total PCS Cost[b]
Army[c]	1977	164.7	--	273.4	--
	1978	136.1	--	224.2	--
Navy	1977	33.8	10.5	94.7	39.0
	1978	32.6	11.3	92.4	40.5
Marine Corps	1977	45.3	27.5	37.7	39.9
	1978	44.5	28.2	37.4	43.7
Air Force	1977	102.8	31.7	246.0	64.1
	1978	95.8	29.9	229.3	62.6

SOURCE: OASD (MRA&L).

[a]Proposed.

[b]Totals include number and cost of moves for rotation, accessions, separations, unit, training, and operational reasons.

[c]Data incomplete for all classes of moves.

Indirect costs attributable to rotation stem from productivity losses. Costs derived from loss of productivity due to rotation moves may be difficult to assess. At any given time, one to two percent of the military force is in transit or settling into new quarters. There is also a loss in productivity while the enlisted service person is adjusting to the new location and working environment. Similarly, productivity may drop off before personnel are to be reassigned at the end of an assignment. These losses have their greatest effect if assignments are short.

Lengthening tours to minimize the loss of productivity may be useless if the tours are in undesirable areas. This lowered rate of reenlistment may eventually result in higher accession, training, and separation costs. But even this supposition is not straightforward because a significant subset of military personnel may be willing to serve in undesirable areas if they are given appropriate incentives. Personnel may consider frequent relocation and its resulting destabilizing effects on family life worse than "undesirable" locations. If given the opportunity to stabilize, certain personnel may productively serve indefinitely long tours in areas generally unacceptable to the rest of the military population.

Force-Structure Constraints

In the recent past, force structure changes proposed by DoD and indirectly by Congress have been influenced by the services' arguments that they would leave an inadequate CONUS rotation base for overseas forces. Concern over the effect on the rotation base was a consideration in structuring changes made in support reductions and has been a constraint in proposing changes in the peacetime mix of both Naval forces and Air Force base engineers.

The rotation base has implications for the utilization of women. Especially in the Navy, where women are not assigned to combat vessels, a large percentage of the shore billets should be reserved for enlisted men rotating from sea to shore duty. Many of these billets would otherwise be ideal for women.

The other major area where rotation-originated constraints affect force structure changes is in the civilianization of CONUS positions. Rotation managers protect many authorizations--those that would otherwise be best suited for contracting out to the civilian work force--for military occupancy only so military personnel returning from non-CONUS assignments will have a place.

III. DESCRIPTION OF THE CURRENT SYSTEM

Any study of rotation and the rotation base entails a study of the assignment systems in the military services. However, procedures for establishing and controlling a rotation sustaining base of personnel go beyond the assignment system. The process also affects requirements determination. Decisionmakers must simultaneously consider the effects rotation base management has on the attraction and retention of personnel. Accordingly, the policies and practices described in this section are not limited to the mechanics of the services' assignment systems but branch out into what rotation policymakers consider relevant information, problems, policies, and practices.

A general concern of personnel management is career development, and rotation broadens occupational experience. However, the philosophical underpinnings of the enlisted assignment system are equity and stability. Whether personnel are available and eligible for rotation is controlled by the length of their obligated service, legal and Congressional constraints, fair treatment of military personnel, and considerations of combat readiness.

DOD GUIDELINES ON ROTATION

This subsection describes the characteristics of the rotation system as set out in Department of Defense Directive 1315.7, December 6, 1977, on Military Personnel Assignments.

One purpose of that directive is to:

> Establish uniform policies, consistent with the maintenance of a higher degree of combat capability and readiness, to maintain an equitable assignment system that will enhance career attractiveness, sustain an assignment base for overseas tours of duty, achieve stability for tour completions, and develop tour lengths consistent wtih these considerations.

The following definitions and guidelines are deemed consistent with the above stated objectives.

Tours

When military personnel are assigned to a location, they should be qualified to perform the duties needed to fulfill the mission. Skill requirements in different locations give rise to a basic military concept called *tours* or *tours of duty*. The term *tour* denotes both the *skill* required and the *location* of the assigned duty.

Overseas tours fall into two broad categories: accompanied and unaccompanied. Accompanied tours allow military personnel to take their dependents and household belongings with them. Unaccompanied tours require dependents and most possessions to remain at home. Another category is called the "all-others" tour. It applies to personnel assigned to an accompanied status location if they are bachelors or if they elect to leave their dependents at home--i.e., if they are unaccompanied in an otherwise accompanied tour.

How an overseas tour is categorized is based on living conditions at and the readiness posture of the location involved. Obviously, hazardous duty or a tour requiring the rapid deployment of units would be unaccompanied. But there are general guidelines that the responsible service uses to evaluate less obvious cases. Current policy considers (1) proximity to population centers; (2) standard of living as set by housing, local transportation, dependent educational opportunity, and the availability of commissary, PX, and medical and dental facilities; (3) general desirability determined by recreational and religious activities, adverse political conditions, and unusual local customs or laws.

The DoD guidelines list geographical areas where U.S. military personnel are currently assigned. Personnel from the different services may be assigned to the same location. For each area, DoD designates a particular service to have primary responsibility. The responsible service, usually the one with the largest number of personnel assigned there, initiates and coordinates changes that affect

different tours (e.g., length of stay) within the country. For example, the Army has primary responsibility in Korea, the Navy in Guam, the Marines in American Samoa, and the Air Force in Greenland. The categorization of a tour is uniform for all personnel assigned to the same station regardless of their service, specialty, or grade. That is, at the present time, *the tour category is determined by the location of the tour*; it does not vary over specialties or the experience level of the military personnel assigned there.[1]

Career military personnel are assigned to a tour for a specified period of time. (In fact, their non-CONUS assignment orders usually have end-of-tour dates.) Tour lengths are uniform within the broad categories outlined above. Accordingly, overseas unaccompanied tours are usually 12 months; overseas accompanied tours are usually 36 months; and the all-others tour is usually 24 months. CONUS tours are supposed to be three years long. The rationale behind these guidelines assumes that tours should be long enough to maximize productivity and readiness, yet short enough to minimize hardship and its effects on morale.

First-term personnel are managed somewhat differently. There are limits on the total number of assignments permitted (after basic and skill training) during their obligated service. Those serving for three years or less receive only one long tour or no more than two assignments in different locations if they must be assigned to a short tour. Those who have obligated themselves to military service for four or more years receive no more than two assignments (after training) in different locations regardless of the location's tour length.

Service personnel may exceed the specified period of time in a tour either voluntarily or involuntarily. No time limit is given for the total amount of time they are allowed to extend an overseas tour voluntarily. Involuntary extensions occur when a service member

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[1] DoD makes exception for Navy sea duty and hardship duty with deployment-designated units of the Fleet Marine Forces (FMF). Navy sea duty tours are set by rating, and the Marines have different tour lengths in Okinawa, even though the USAF has primary responsibility there.

has less than a year of obligated service remaining--this is related to the one year minimum on PCS moves. In such cases, members are permitted to lengthen their obligation (if eligible) so they may be reassigned.

Qualified volunteers for overseas tours are given priority in assignment.

ROTATION POLICIES AND PRACTICES

Army

Geographical Distribution and Imbalance of Spaces. The Army has a significant percent of its authorizations in overseas locations: 5 percent of Army manpower is in hardship overseas short tours (mostly Turkey or Korea, with 27,000 in Korea alone), and 35 percent of Army manpower is in accompanied overseas long tours. The rest of the total 566,000 authorized enlisted personnel is in CONUS.

Although the majority (60 percent) of Army authorizations are in the United States, the majority of authorizations in certain military occupational specialties (MOS) are in overseas locations. The criterion used by rotation managers to determine if there will be sufficient numbers of CONUS-stationed personnel in the rotation base requires that 55 to 60 percent of a specialty's authorizations be in CONUS. Accordingly, if over 55 percent of requirements are abroad, that MOS is designated space-imbalanced by the Army. Table 5 lists these totals by career management field. As of January 1977, there were 94 of these space-imbalanced specialties, totalling 91,300 military authorizations. Nearly one-half, or 40,200, of these authorizations, representing 62 MOS, were in the major weapon or communications systems specialties, including the Hawk, Hercules, Lance, and Pershing Air and Ground Defense. These MOS may have overseas authorizations as high as 100 percent of total authorizations but typically are at the 75 percent level.

Rotation problems associated with these specialties have peculiar difficulties. For instance, although some of the Air Defense

Table 5

SPACE IMBALANCE--ARMY CAREER FIELDS

Career Field	No. of Space Imbalance MOS	MOS Space Imbalance Total Authorizations
Administration	4	788
Air Defense Artillery	7	7,686
Air Defense Missile Repair	16	3,404
Ammunition	3	869
Automatic Data Processing	5	623
Ballistic Missile Repair	8	629
Combat Engineering	2	3,064
Combat Missile Maintenance	3	421
Combat Surveillance and Target Acquisition	1	29
Communication and Audio-Visual	3	4,205
Electrical/Electronic Instrument Maintenance	4	1,196
Exceptional Management Specialties	1	694
Field and Area Communications Maintenance	7	10,394
Field Artillery Missiles	5	3,620
Fixed Plant Communications Maintenance	6	3,624
General Engineering	1	1
Maneuver Combat Arms	2	25,012
Mechanical Maintenance	7	15,558
Non-Integrated Radar Maintenance	3	567
Signal Intelligence	4	4,459
Supply	1	3,641
Wire Maintenance	1	835
Total	94	91,319

SOURCE: Data supplied by the Department of the Army, Office, Deputy Chief of Staff for Personnel, Director of Personnel Management, March 1977.

MOS may require accompanied long overseas tours, working conditions make them undesirable tours. The installation may be as far as 30 miles from living quarters, with personnel on 24-hour call for seven days a week. The Army is experiencing a severe dropoff in retention in these long tours. In fact, some MOS have 70 percent yearly training rates to maintain manning levels. In addition, the number of installations in CONUS (two as opposed to seven in Europe) where these highly technical MOS can be used is limited. Hence, these personnel in CONUS usually cannot maintain proficiency in their skills --not only because they may not be near equipment, but also because manuals are limited, classified, and distributed only to facilities where equipment is located.

The Assignment System. Overseas tours have a prescribed length.[1] Accompanied tours in Germany, for example, should range from 36 to 48 months. All other tours should be 24 months. For personnel to be accompanied by dependents at the time of departure, government housing must be available. If housing is unavailable, military personnel travel alone and must arrange for dependent housing before their dependents are sent over. The actual tour length of accompanied tours is 39 months, measured from the time dependents arrive.

Unlike overseas tours, CONUS tour lengths are not predetermined. The Army will not assign personnel in CONUS for less than one year because of a PCS constraint. However, for tours lasting over a year, CONUS tour lengths are highly variable. Their duration depends on the MOS overseas/CONUS space balance and on whether the specialty's population is over- or understrength. Soldiers in imbalanced specialties such as Air Defense typically have one-year CONUS tours.

The Army attempts to manage the sequence of tours so as to equalize the burden of serving in undesirable areas. The normal Army-wide tour sequences would be a short overseas tour, followed by a CONUS tour of at least a year, followed by a long overseas tour.

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[1] DoD Directive 1315.7 contains detailed guidance on the lengths of overseas tours for military personnel.

However, this sequence cannot always be maintained. The actual specialty-specific tour sequence is determined by strength levels and overseas requirements, so imbalanced or understrength specialties may experience different sequences. Personnel in the Air Defense specialties, for example, will take a long overseas tour, followed by a year of CONUS tour, followed by another long overseas tour, followed by a CONUS tour, followed by a short overseas tour. Certain European locations are viewed as undesirable areas because of drug problems and devaluation of the U.S. dollar. Accordingly, no individual will be assigned for a third long tour there if anyone else in the rotation pool has not had a second long tour there. This constraint is closely monitored by the assignment branches.

Volunteers will be assigned wherever they want to go so long as there is a requisition for their MOS in that location. This includes intertheater transfers as well as CONUS to overseas assignments. Extensions must be sanctioned by the chain of command in the present tour area. If command wants the individual *and* if his or her test scores are not declining *and* the MOS skill mix required for the job is not restricting for the generality of the MOS requirement, the extension will be granted. There is no limit on the number or total accumulated time of extensions that meet these criteria.

Rotation Management. Aside from what results from the assignment process, special policies may be initiated from other areas in the Army's organization. The major way Army rotation policymakers control for stability in the rotation base is to restrict reassignment at the local level--i.e., to limit the local field commander's prerogative to reassign personnel within their base. Although Army personnel are assigned to a base to fill a requisitioned space with specified MOS and grade requirements, the local commander may reassign a person to fill another need.[1] As a rule, the Army allows this kind of flexibility

[1]This is accomplished by on-the-job training (OJT). The soldier acquires a secondary MOS, which is his duty MOS while he is stationed at the base. Changes in primary MOS require the sanction of the MOS reclassification board and the assignment branch managing the soldier's tours.

for the local commander to redistribute overages and shortages at the management level. In certain cases, however, this flexibility is curtailed. The commander may not reassign any specialist in an inventory shortage or space-imbalanced MOS. Also, a letter is issued from the Department of the Army to CONUS headquarters and commands specifying manning levels on a specialty's Table of Distribution Allowance (TDA) authorizations that should be maintained to assist in stabilization of the rotation base.[1] Moreover, it stipulates which MOS are to be reserved for military occupancy only--exempt from civilianization.

Perceptions and Proposals. The critical issue surrounding the space-imbalanced MOS has produced current research and propositions for incentive systems to rectify the poor retention behavior in these high skill specialties. One Army proposal is to award bonus payments for overseas extensions elected by personnel in certain hardship tours. Bonus payments would be awarded for one-year extensions of the current tour. Another proposal is to allow personnel a 30-day leave, with all travel expenses to CONUS paid for the soldier and his family for each extension. This nonpecuniary bonus (no bonuses are paid currently for extending overseas tours) may ultimately cost less because of increased retention and decreased training costs.

The Army is also considering that TDA allowances for CONUS installations of Air Defense systems could be altered to accept assignments of personnel in these specialties. Although a specialist in one of these areas may not be working in his primary MOS, at least

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[1]The Army categorizes its requirements two ways: The Table of Organization and Equipment (TOE) is the force structure and is set by tactical mission; the TDA is the support line--i.e., administrative structure not directly defined by mission readiness. Although TOE requirements have fairly strictly defined staffing in terms of skill by grade, the TDA requirements have more flexibility. Accordingly, because TOE overseas requirements are firm, Army personnel are assigned overseas by primary MOS and grade. TDA units remain garrisoned at the base to allow more latitude in manning levels and skill substitution. (See Department of the Army Letter DAPE-MPE-SS (M) (8 July 1977), Subject: Manpower Policy to Assist in Stabilization of the Rotation Base.)

he would have access to equipment manuals and training classes during a CONUS tour. Furthermore, these soldiers would be conveniently located for taking refresher courses before the next overseas assignment.

Navy

Geographical Distribution of Billets. Unlike the other services, the Navy has a three-way split in rotation areas because non-CONUS billets are either at sea or ashore in foreign lands. The distribution of authorized enlisted shore billets places 110,000 in CONUS, 20,000 in what the Bureau of Naval Personnel considers preferred overseas locations, and 22,000 in undesirable overseas locations. Afloat billets total 229,000 or 60 percent of the total enlisted Navy authorizations. Manning requirements are currently at the 100 percent level.[1] Rotation base problems stem mainly from the sea-to-shore exchange of tours and are caused by four main factors: (1) the large percentage of billets at sea, (2) priority of manning of sea-based billets, (3) the availability of shore billets, and (4) inventory overages or shortages. The rotation base for sea duty of the career force consists of 88,000 of its shore duty billets. The remaining shore billets are accounted for by hospital corpsmen, first-term air station support of career aviators, and enlisted women.

Sea duty in some critical ratings has produced severe rotation hardship. Currently, sea duty theoretically ranges from 36 months for sufficiently staffed ratings to 60 months for critical ratings. Historically, however, sailors in such ratings (boiler technicians, machinist's mates, gunner's mates) have experienced up to 16 consecutive years in a sea duty tour. Disadvantages to sea duty in general result from long work weeks and constrained living conditions while deployed. Although a ship may be homeported near a sailor's family, deployments require up to eight months of total separation a year. In

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[1] One-hundred percent manning of sea tours is a direct result of the Fleet Readiness Improvement Program (FRIP) put into effect in June 1976. Its purpose was to overcome shortfalls that were hindering combat readiness. Subject to season, manning levels vary from 98 to 103 percent.

particular, critical ratings have inherently unappealing working conditions and duties (boiler-room temperatures may reach 130°F). Because of the prospect of long sea duty with extensive deployments, critical ratings are chronically short of personnel; recruitment and retention in these occupations are difficult. Table 6 lists ratings currently requiring five-year sea tours.

Assignment System. The basic sea versus shore tours are further differentiated by degree of hardship into six types: CONUS Shore Duty, Arduous Sea Duty, Unaccompanied/Accompanied Overseas Shore Duty, Unaccompanied/Accompanied Nonrotated Sea Duty, Neutral Duty, and Preferred Overseas Shore Duty. Priorities are set on type-to-type rotations (see Fig. 1). These priorities mean, for example, that after completing a two-year CONUS shore duty, the sailor would be assigned to an unaccompanied nonrotated sea duty.[1] If no such sea duty billets are available, the sailor will be assigned to an overseas shore duty, etc. The idea is to follow more strenuous tours with less strenuous tours and vice versa.

The Navy assigns and determines the length of a sea tour by rating and certain closed loop NECs.[2] Although the billet availability part of the assignment system is automated, final personnel assignments are made by rating detailers in the Bureau of Naval Personnel. Unlike the USAF, the Navy does not cross-train or substitute personnel over ratings. Assignment flexibility is allowed on the NEC level only and is controlled by the detailer. Because many duties at sea do not have counterparts on land, finding comparable occupations ashore has been a perennial problem for Naval personnel administrators, especially because career progression and advancement generally depend on the time a sailor spends actually serving in his rating. However, 10 percent of shore billets are designated general duty billets, qualification for which is met by rate (grade) alone--i.e., no specialty is designated.

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[1] Nonrotated sea duty applies when a unit is deployed for eight months. During this time, there can be no rotation of personnel within the unit.

[2] NECs (Navy Enlisted Classification) are codes for specialized training within a rating. Most assignments and tour lengths are determined by rating; but certain NECs, such as drug counselors, are treated as ratings for assignment purposes.

Table 6

NAVY RATINGS REQUIRING 5-YEAR SEA DUTY TOURS

Code	Name	Number of People	Amount of Time on Sea-Duty in 20-Years (%)	Number of Weeks Training
BT	Boiler Technician[a]	10,000	60-70	9
HT	Hull Technician	10,000	60	12-14
ML	Molder	215	60-70	13
PM	Patternmaker	180	60-70	20
EN	Engineman	8,700	60-70	6
MM	Machinist's Mate[a]	22,000	60-70	6
EM	Electrician's Mate	12,000	60-70	18-21
ET	Electronics Technician	19,000	50-60	18-22
EW	Electronic Warfare Technician	1,600	60-70	45-46
FT	Fire Control Technician[a]	7,500	60-70	27-30
GM	Gunner's Mate[a]	6,200	60-75	16-18
IM	Instrumentation	400	50-60	16-17
IC	Interior Communication Electrician	5,000	60-70	13-18
OM	Opticalman	320	50-60	17
SM	Signalman	3,000	60-70	6
ST	Sonar Technician[a]	5,650	60-70	14-18
TM	Torpedoman's Mate	3,900	50-60	16-18
BM	Boatswain's Mate[a]	8,700	60-70	OJT
QM	Quartermaster	4,400	60-70	6
		128,765		

SOURCE: *Navy Careers*, 1976-77, Department of the Navy.

[a]These ratings are currently understaffed.

FROM	TYPE OF DUTY	TO 1	2	3[a]	3	4[a]	4	5	6
CONUS SHORE DUTY	1	8th	3rd	2nd	5th	1st	4th	6th	7th
ARDUOUS SEA DUTY	2	1st	8th	6th	4th	7th	5th	3rd	2nd
UNACCOMPANIED OVERSEAS SHORE DUTY	3	1st[b]	5th	8th	4th	7th	6th	3rd	2nd
ACCOMPANIED OVERSEAS SHORE DUTY	3	6th[b]	1st	3rd	8th	2nd	4th	5th	7th
UNACCOMPANIED NONROTATED SEA DUTY	4	1st[b]	5th	7th	4th	8th	6th	3rd	2nd
ACCOMPANIED NONROTATED SEA DUTY	4	1st[b]	7th	4th	6th	5th	8th	2nd	3rd
NEUTRAL DUTY	5	8th[c]	1st	3rd	5th	2nd	4th	7th	6th
PREFERRED OVERSEAS SHORE DUTY	6	7th	2nd	3rd	6th	1st	5th	4th	8th
ACCESSION/"A" SCHOOL		7th	1st	4th	5th	2nd	3rd	6th	8th

SOURCE: Bureau of Naval Personnel, *Enlisted Transfer Manual*. (NAUDERS 15909B).

[a]Accompanied tours not authorized for area.

[b]If within 6 months of completion of prescribed sea tour (PST), will be ordered to Type 1 or 6.

[c]Previously accumulated sea duty may modify priorities.

Fig. 1--Priorities in Navy assignments

Apparently, the number of dependents is rigorously tracked in the Navy assignment system. Sailors with dependents may be prohibited from certain overseas assignments if PCS costs will exceed maximum amounts found in cost lookup tables (given for locations by rate and number of dependents). Also, bachelor sailors fall in the all-others tour category and receive shorter overseas tours. Personnel managers believe separation from the United States is a greater strain for unmarried sailors because they are without family and ties in foreign countries. Preferences expressed by personnel for their next assignment are honored by the detailer if enough alternatives are given or if they are general enough (northwest coast rather than Fresno). Otherwise, assignment is defaulted to Navy requirements.

Rotation Management. The prospect of long, contiguous tours at sea has had drastic effects on retention behavior. For this reason, the CNO has limited all sea tours to no more than five years. Except for some aviation ratings, all enlistees go to sea tours after leaving boot camp (apparentice airmen, firemen, seamen) or from A-school (designated strikers). Accordingly, not until after the first reenlistment point do Naval personnel move into and out of the CONUS assignment, so the Navy's main concern is with managing the rotation base for equity and stability within the career force. The Navy's goal is to construct a rotation timetable that consists of alternating three-year tours at sea and ashore, while maintaining 100 percent manning at sea. Although this policy should help retention, the Navy is also intensively recruiting and lobbying for more authorizations to balance out the inventory.

Besides shortening length of sea tours, the Navy is increasing the number of shore billets--partly by militarizing functions that could be or have been performed by civilians and partly by creating shore facilities for maintenance away from tenders.[1] Although the Navy realizes it will ultimately need more shore billets to reach the 3-3 goal, a transitional requirement is set by a simple simulation model. Apparently,

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[1]This increase applies to those ratings that experience longer than normal sea tours. Other kinds of shore billets are actually being decreased--i.e., demilitarized.

it uses a computed retention rate (from another source) and applies it to the current at-sea inventory to determine the anumber of billets needed to assign ashore rotating personnel, if shorter tour lengths are allowed.

To reduce PCS costs and to increase stability and productivity, assignments to shore duty are in the same geographical areas as the homeport of the sea duty ship, if possible. In critical ratings, the Navy has a Guaranteed Reenlistment Incentive Program. At the time of reenlisting, the sailor in a critical rating is given his choice of next assignment immediately. For example, if a sailor is four years into a five-year sea duty at reenlistment point, the Navy will reassign him to his choice of next assignment if he reenlists for six years.

New Proposals. At the present time, the Navy is negotiating a sea-pay incentive program. Rotation managers hope to have authorized sea pay for all sea duty but would like the option of allocating sea pay only to critical five-year sea tour ratings (see Table 5). It is hoped that this differential in sea pay will help compensate for the disadvantages found in these ratings. Also, pay will be higher in the critical ratings if it is not distributed so widely and, consequently, would have more effect where it is most needed.

Marine Corps

Geographical Distribution of Billets. There are approximately 167,000 enlisted Marines. Of the 40,000 overseas billets located in 144 different geographic areas, 27,000 are considered "hardship" tours. These tours are designated "Dependent-Restricted Duty" (DRD), which means that Marines serving in these tours are unaccompanied by family and are located in remote or undesirable areas where hospital and recreation facilities are limited. The majority of these DRD tours are for Westpac billets and last 12 months.

Because of the nature of their mission, Marines have a greater percent of DRD overseas tours than any other service. The Marines perceive themselves as a high readiness force. For example, unlike other services stationed in Okinawa, the Marines designate it DRD.

They have no hospital (just a clinic), and they are located in the outer reaches of the island. Because they do not have to deal with upheavals associated with departing from and securing the safety of dependents, as well as the drain on logistical support that would result from dependent evacuation, the Corps claims it can deploy its first troops anywhere in Westpac within nine hours. Approximately 14 percent of the Marine Corps' billets fall into this DRD category. Furthermore, all of these billets have priority manning at the 100 percent level.

Rotation and Assignment Policies. Usually a new enlistee's first tour is an overseas DRD tour. Eligibility for subsequent DRD tours depends on position in the MOS/grade queue, which is dependent on equity and constraints imposed by DoD directives. Substitution policies allow for a two up, one down substitution of personnel by grades. This means that personnel may be assigned to tours requiring a grade two steps higher or one step lower than the one held. For overseas duty, assignments are usually made on primary MOS, although it is not unusual for the career Marine to have a secondary and tertiary MOS.[1] Besides MOS-related billets, assignments in CONUS are also made to what are called B billets. A Marine's general training qualifies him or her for these tasks; eligibility depends on grade. The B billets include assignments as recruiters, guards, and drill instructors. They usually last 36 months unless they have associated high stress. Because of their length, these tours place an added limitation on the rotation base and affect the occurrence of 12-month tours. They are frequently used as rewards for good performance in hardship tours.

Proposals. Because of its large proportion of short tours, the Marine Corps experiences quite large expenditures for rotational PCS

[1]Marine Corps assignment managers believe it is important not only to vary locations in the sequence of tours but also to vary duties. Accordingly, they attempt to assign a Marine in his secondary or tertiary MOS in at least one out of every three tours.

moves (55 percent or $58,568,400 of the 1976 PCS budget)[1] and have a more uniformly severe retention problem over all occupations. In the formative stages of development is a plan called the Marine Corps Westpac Unit Deployment. Information on this proposal is limited, so the following is a qualified description. The plan proposes moving entire units from a CONUS base to a Westpac installation for a six-month temporary change of station, allowing for two such moves over an 18-month tour. Some of the expected benefits are: (1) Better retention because six months is a tolerable separation from family; (2) overseas assignment will be from and return to the base at which families are situated, so families will not be uprooted and PCS costs will be less; (3) unit moves are more efficient than individual moves for operational reasons. Some of the expected disadvantages are derived from scheduling ETS (Enlistment Term of Service) and tour expiration dates within the unit. There are also problems with managing to satisfy field commanders' requirements and desire for flexibility in controlling composition of their battalions.

USAF

Geographical Distribution of Billets and Skill Imbalances. Because of its smaller overseas requirement, the USAF has a minor rotation problem compared with the other services. In fact, only 33 percent of its total strength is overseas. In 35 out of 358 Air Force Specialties (AFS), overseas requirements create imbalances in personnel flows between overseas and CONUS assignments. These specialties are referred to as CONUS/Overseas Imbalanced Skills. This condition affects 34,000 of the 422,000 Air Force enlisted military personnel. The areas of heaviest imbalance are in communications, intelligence, and certain service (support) areas (see Table 7). Apparently, differences in culture and technology between the United States and the country in which the Air Force installation is located

[1]See Table 4 for proposed budget.

Table 7

CONUS/OVERSEAS (O/S) SPACE IMBALANCES IN
USAF ENLISTED CAREER GROUPS WITH
ROTATION BASE MODEL REQUIREMENT

Airmen Career Field	#	Group	No. of AFSCS	Strength		Authorizations		Rotation Base Requirement
				CONUS	O/S	CONUS	O/S	
	(11)	115	2	237	242	225	218	261
Intelligence	(20)	202	8	1132	1562	1492	1459	2065
		203	4	48	110	52	124	165
		207	9	1974	4654	1498	4270	5898
		208	4	2052	2804	2154	2706	3724
Audio-Visual	(23)	232	3	184	561	169	511	721
Communications	(30)	304	4	2751	2873	2052	3351	4602
Electronics		306	1	120	172	147	153	184
		307	4	2017	2567	1269	2308	3069
Avionics	(32)	321	2	295	386	298	308	384
Wire Communi-cations	(36)	362	2	328	364	255	356	398
Munitions Maintenance	(46)	461	2	3045	2637	3005	2481	3702
Supply Ser-vices	(61)	611	1	57	75	65	69	104
Special Duty	(99)	990	2	5	7	3	33	54
		991	2	0	128	2	136	323
		995	1	37	43	38	42	63
			55	14,282	19,185	12,724	18,525	25,717

create some imbalance problems.[1] For example, telephone switch repairmen are contract labor in the United States but are military labor in some overseas locations because of differences in technical knowhow. Although the USAF attempts to contract out as many functions as possible, both in the United States and overseas, some Air Force skills are unavailable in overseas locations.

Assignment System. The assignment process is fully automated, with assignments being made nine months in advance. The computer algorithm honors preferences of airmen, once all requirements of the Air Force have been met. Assignment can be made in a secondary AFSC if the serviceperson's skill levels are the same in both the primary and the secondary and a shortage exists in the secondary specialty. In shortage specialties, an airman may be assigned to a tour requiring a grade two steps higher or one step lower than the one held.

Historically, emphasis was given to equity in the assignment system, but recent emphasis is on stability, perhaps at the expense of equity. For example, as an incentive to voluntarily fill overseas tours, an airman is given a higher priority on his next assignment preference if he volunteers for a 12-month short tour. The Air Force also allows for extended overseas programs in which an airman can volunteer for an overseas tour and be guaranteed an extension of up to four years on that tour. In addition, theoretically, an airman now could remain in overseas tours indefinitely, so long as his behavior did not embarrass military standards of conduct: as does the Army, the Air Force permits intertheater transfers when overseas tours are extended.

Rotation Policies. The USAF has a general policy that minimizes family separation and thereby negative effects on retention behavior. This policy has three facets: (1) Airmen must have 24 months of CONUS duty between involuntary overseas tours; (2) there can be no more than two involuntary short tours per career; (3) a maximum of eight years of overseas duty is permitted in a 20-year career. If military

[1]How these differences are dealt with varies depending on local operating practices at non-CONUS bases.

personnel in an AFS as a whole must involuntarily violate any one of the three conditions, the skill is called imbalanced. (The computerized McIntyre Model is used to perform related calculations.)

In response to these imbalances, the USAF cross trains its airmen, so different occupations are held in CONUS rather than overseas. The Human Programs Branch of the USAF Airmen Programs Branch (DPPPN) administers the Dual AFS Qualification and Identification Program. Their objective is to manage Trained Personnel Requirements (TPR), so that problem specialties are identified and appropriate adjustments are made to support overseas requirements where CONUS resources are limited. The dual-qualified airmen may be promoted in either AFS, but they are always assigned overseas in the shortage or imbalanced skill. Overseas returnees in the imbalanced skill are cross trained as the skills are identified as imbalanced. Additionally, a hold is put on civilianization of CONUS requirements in imbalanced specialties. Some adjustments are also made to overman imbalanced specialties at the end of a fiscal year to compensate for overseas rotation requirements.

Proposals and Programs. The USAF has been exploring the effects of programs that stabilize tours at hard-to-man bases. An experimental program called the Voluntary Stabilized Base Assignment Program allows personnel to remain in such a tour indefinitely. Although this program has not been instituted overseas, the Air Force has had success in manning remote areas of CONUS under this program: 25 percent of the manning at Grand Forks and Minot Air Force Bases in North Dakota was acquired through this incentive.

IV. NEXT STEPS AND CONCLUDING REMARKS

This note has described the services' rotation base management options. It has emphasized the assignment system and rotation management because these two areas have the greatest effect on the supply of CONUS-stationed personnel who support the rotation base. The first is important because in matching available trained personnel with available billets, the assignment system works within constraints that affect rotation base supply. The assignment system diminishes the apparent size of the rotation base because of the constraints it imposes: (1) tours must follow permissible sequences; (2) the queue for rotation is stacked first in, first out; (3) stabilized personnel are excluded from the rotation base; (4) PCS regulations require minimum length of obligated remaining services; (5) certain moves are too expensive. The second constraint is important because rotation management policies can be used to solve problems caused by the disequilibrium from the distribution of tour locations. Tour lengths combined with non-CONUS requirements determine flow rates out of the rotation base that may not be supported by the mission-oriented CONUS requirements. Accordingly, management options for establishing an equilibrium in the flow into and out of the rotation base can be summarized as follows: (1) working within flexibilities in the job classification system, (2) formal cross training, (3) protection of CONUS billets from civilianization, (4) curtailment of CONUS tours, and (5) increasing training requirements.

Acquaintance with stated policies and hypothesized problem areas within this rotation system leads to the analysis of actual data to determine if stated policies have their purported effects and if problem areas exist as they are envisioned. Two major data sources will be drawn upon in two subsequent studies: (1) responses to rotation-oriented questions in the 1978 DoD Personnel Survey File, and (2) extracts from the 1978 Army Personnel File.

THE 1978 DOD PERSONNEL SURVEY

The DoD-wide personnel survey affords an excellent opportunity for studying the rotation-related issues this note has discussed. Several questions will be included in the survey instrument on the following topics: desirability of locations, effects of tours on attitudes toward reenlistment, perceived effect of tours on promotion opportunity and career development, likelihood of extensions in present tours, satisfaction with military living and working conditions, and disruptiveness of PCS moves or separation on family life. Responses to survey questions should make available machine-readable data, representing all four services, on these difficult to assess topics.

THE 1978 ARMY PERSONNEL FILE

Imbalances between overseas and CONUS requirements create the major rotation base supply problem. Because the Army has a disproportionate number of military occupations with predominantly overseas requirements, it was selected as a base case study. The following topics will be analyzed using personnel records selected because they registered one of 13 space-imbalanced MOS: assignment history, tour locations, working environment, first-term career mix. The objective of the data analysis will be to produce a series of descriptive statistics for each of the topic areas to determine (1) if stated policies can be verified by personnel experience as reflected in the personnel records, and (2) if profiles in space-imbalanced MOS are significantly different from those of other occupational specialties.

It is hoped that this and future studies will produce policy recommendations that will move the rotation system toward greater efficiency in management and higher productivity in personnel behavior.

Appendix

QUESTIONNAIRE AND PERSONS INTERVIEWED

Listed are the offices and individuals we contacted to discuss service specific rotation policies and issues. Also included is a list of questions that served as a guideline for these interviews.

ARMY

U.S. Army Concepts Analysis Agency
8120 Woodmont Avenue
Bethesda, Maryland 20014

Contacts: Mr. Leonard S. Freeman
Major Calvin M. Anderson
Major A. K. Holtry

Director of Enlisted Personnel Management
U.S. Army Military Personnel Center
Department of the Army
200 Stovall Street
Alexandria, Virginia 22332

Contact: Colonel Elden H. Wright (DAPC-EPC-H)

Director of Military Personnel Management
Office, Deputy Chief of Staff for Personnel
Department of the Army
Washington, D.C. 20310

Contact: Major Dominic Ruggerio (DAPS-MPS)

Commandant
U.S. Army War College
Carlisle Barracks
Pennsylvania 17013

Contacts: Colonel Lloyd D. Bryant
Lieutenant Colonel James Fritz

NAVY

Assistant Chief of Staff for Administration
and Personnel
Naval Surface Forces, Pacific Fleet
San Diego, California 92155

Contacts: Captain Tom I. Kolstad
Commander Tom Burke
Lieutenant (jg) Marjorie Frost
CWO Les Wall

USS John Paul Jones
FPO San Francisco 96601

Contacts: Commander Ernest F. Tedeschi
PNC Lynch
Lieutenant (jg) Muesing
BT1 Lynch
MM3 Reiter
GMG1 Thomas

Assistant Chief for Enlisted Personnel
and Distribution
Bureau of Naval Personnel
Department of the Navy
Arlington, Virginia 20370

Contacts: Captain Donald E. Riggs (PERS-5V(A))
Lt. Commander Don Deda
Lt. Commander Larry Copeland
Lt. Commander George Council

MARINES

Director of Manpower Plans and Policy
Division
United States Marine Corps
Washington, D.C. 20370

Contact: Captain O. L. North (MPP-37A)
Major Rene Larriva

AIR FORCE

Directorate of Personnel Programs
Chief, Airman Programs Branch
Department of the Air Force
Washington, D.C. 20310

Contacts: Mr. John O. Reece
Lieutenant Colonel R.O. Bissey

Commander
Air Force Military Personnel Center
Randolph Air Force Base
Texas 78148

Contacts: Lieutenant Colonel Allen S. Philp (DPMROS)
Major R. J. Baun

PRELIMINARY DISCUSSION TOPICS FOR ROTATION BASE STUDY

I. Tours

A. How are tours defined and categorized for assignment purposes?

1. For example--remote, special, accompanied, overseas, CONUS.

2. What are critical characteristics of each tour category?

3. What are special or exceptional costs associated with each category--travel, training, housing, etc.?

B. How are the following determined; what are underlying policies and rationales?

1. Authorized strength level of tour.

2. Length of tour.

a. Why are certain tours of fixed length and others variable?

b. What are min/max of tour length?

3. Grade/skill distribution of billets.

C. What are permissible and/or desirable tour sequences? How are these determined?

D. Are there limitations on the number of tours per category? If so, why?

II. Eligibility and Availability Policies

A. What are underlying policies in career progression and equity that affect tour sequence, eligibility, and availability?

B. How eligibility and availability are affected by:

1. Time in service for

a. First termers vs. careerists;

b. ETS and reenlistment policies.

2. Time in grade by

a. Promotion policies;

b. Up or out policies.

3. Skill level.

4. Tour history.

a. Length of current and previous tours.

b. Category of current and previous tours.

III. Placement and Distribution Policies

A. How are priorities set in tours?

B. What are substitution policies?

1. Grade/skill level.

2. Cross training.

C. What are policies on shortages or overages in tour distribution and quotas?

1. What are incentives to fill shortages?

a. Reenlistment bonuses?

b. Extension of length of tour?

2. What attrition policies affect overages?

a. Early outs?

b. Up or out policies?

3. How are partial fill billets determined?

4. How closely do real numbers match computed?

D. Under what conditions are units moved? What are restrictions and limitations?

IV. Rotation Base

A. How is it determined?

1. How is requirement established?

2. Is it specialty/skill specific, i.e., is it done for each specialty?

B. How closely do real numbers match computed?

C. How closely matched is rotation base with CONUS requirements?

D. Organizational and Administrative aspects.

1. Who makes decisions?

2. How are reassignments made and where?

3. Who implements decisions?

4. Who monitors?

E. What computer models are actually used to determine the rotation base?

V. Significant Changes--What have been major policy changes in the last five years and what considerations led to these changes?