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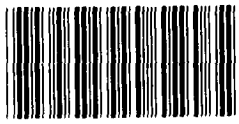
BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Marine Amphibious Forces: A Look At Their Readiness, Role, And Mission

This report is the unclassified version of GAO's SECRET report, LCD-78-417. It addresses the readiness status and ability of Marine Corps amphibious forces to carry out their more demanding missions and recommends to the Secretary of Defense and the Commandant of the Marine Corps actions to improve capabilities.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This is the unclassified version of our report addressing the readiness status and ability of Marine Corps amphibious forces to carry out their more demanding missions and recommending to the Secretary of Defense and the Commandant of the Marine Corps actions to improve capabilities.

We initiated this review because of the growing concerns about U.S. defense capabilities. Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget, and the Secretaries of Defense and the Navy.

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

MARINE AMPHIBIOUS FORCES: A LOOK AT THEIR READINESS, ROLE, AND MISSION

D I G E S T

The Marine Corps' size, structure, and ability to perform some of its more demanding missions raise questions about its capabilities. Some problems relating to these areas and the Corps' overall readiness affect not only the II Marine Amphibious Force but also the entire Corps. However, since this Force has a priority North Atlantic Treaty Organization mission in a European war, GAO's review was concentrated in this area.

PROBLEMS AFFECTING THE CORPS' ABILITY TO FULFILL ITS PRIORITY MISSION

The Corps faces serious problems in deploying in the amphibious assault mode because of a lack of enough amphibious ships available when and where needed to transport troops and equipment and to land forces over the beach. This is the result of two factors: (1) about half of the Navy's amphibious ship fleet is located in the Pacific Ocean, a great distance from Europe, and (2) there are always a number of amphibious ships routinely in maintenance and drydock and, thus, not readily available for deployment.

The II Marine Amphibious Force had on hand most of the equipment it was authorized, and the equipment and weapons were being reported as fully or substantially combat ready. However, equipment condition was not as good as reported, and it would be difficult to deploy much of the equipment quickly in a combat ready condition.

The supply systems supporting the II Marine Amphibious Force were short of parts, contributing to the reduced readiness of equipment and weapons. Better management of available resources could increase the responsiveness of the supply systems.

There were personnel shortages in a number of essential military occupational specialty fields, particularly those that require formal training in the more complex skill areas. The personnel trained in some of these skills were not always fully used in their specialties.

UNRESOLVED QUESTIONS COULD INDICATE MORE BASIC PROBLEMS

Some of these problems are long term and cannot be solved quickly or cheaply, particularly as long as the Corps is organized and tasked as it is now. Thus, GAO's review raises questions and issues about the Corps. These questions and issues are similar to ones raised previously by the Brookings Institution, the Center for Defense Information, and others.

Are The Corps' Resources Properly Allocated To Support Its Missions?

The European contingency increasingly dominates U.S. defense planning and generates the bulk of general force requirements. Accordingly, an increasing amount of Defense resources are being committed to strengthen U.S. force capabilities in Europe. However, while the Corps' most demanding mission is meeting its North Atlantic Treaty Organization commitment, its resources are distributed to provide all its forces with roughly equal capabilities. Further, Marine aviation receives a preeminence of funding over ground forces with a resultant possible degradation to these forces.

Are Large Amphibious Assaults Practical In Today's Environment?

The concern here relates to the visibility and vulnerability of amphibious task forces considering current military technology. There have been no large-scale amphibious assaults since Korea and World War II, thus, their practicality against a foe armed with contemporary weapons supported by advanced technology is uncertain.

Could The Corps Operate Effectively Against The Heavily Mechanized and Armored Forces It Would Encounter In Performing Its Priority and Other Missions?

The Corps is basically a light infantry force supported by organic air power. Its likely opponents in Europe and elsewhere deploy large numbers of tanks and other armor, supported by mechanized infantry and artillery.

The Brookings Institution in its 1976 report, "Where Does the Marine Corps Go From Here?" presents a wide range of recommendations and suggested alternatives including:

--Reducing the Corps to 1-1/3 Marine Amphibious Forces, thereby sizing the force to planned amphibious sealift capability.

--Replacing the Army in the Pacific theater and giving the Corps primary responsibility for inland combat in that area.

--Mechanizing the Corps, while having it retain its amphibious operations role.

--Reorienting the Corps mainly toward sustained inland combat in Europe; in effect, having it join Army forces in that theater.

These issues deserve the highest level of attention within the Department of Defense and the Congress. It is time to resolve these difficult issues and to make some hard decisions about the future role of amphibious forces in U.S. defense strategies.

GAO therefore recommends that the Secretary of Defense, in coordination with the Commandant of the Marine Corps and the Joint Chiefs of Staff, reevaluate (1) the structure and deployment of Marine Corps forces in relation to currently assigned missions, focusing on the ability of these forces to execute their most demanding mission, and (2) the requirement for a 200,000-plus strength amphibious force in the projected threat and technological environments expected to develop in the future.

This reevaluation should take into account that, within the range of potential contingencies which might require the use of U.S. military power, two basic factors of defense or force planning need to be considered: (1) some contingencies would affect U.S. interests far more than others and (2) some contingencies would require more resources than others. In other words, the Corps should have a system to allocate available resources to its higher priority missions.

AGENCY COMMENTS

The Department of Defense disagreed with GAO recommendations to (1) undertake a major evaluation of the size and future role of amphibious forces in U.S. defense strategies and (2) develop a priority system for allocating resources within the Corps.

Defense believed that, rather than making an overall study of the Corps, it needed to concentrate on specific measures which would contribute to deploying Marine Corps forces more quickly and more effectively. Two alternatives that Defense is considering are discussed in this report. (See p. 14).

The Department also said that the resources to be applied to the Marine Corps and its mission, size, and force structure will be examined in the planning, programing, and budgeting process and in subsequent congressional reviews. Further, Defense disagreed with what it said was inherent in GAO's basic assumption on this issue; that is, an acceptance of a single-scenario national strategy.

In discussing resource allocation, GAO is not suggesting that the Corps should plan solely for a single scenario--European or otherwise. Rather, GAO is suggesting that, within the range of potential contingencies that might require the use of U.S. military force, some contingencies (1) would affect U.S. interests far more than others and (2) would require more resources than others. Therefore, it seems logical to incorporate these factors into the planning process and allocate resources accordingly.

Additional recommendations and agency comments appear on pages 38, 48, and 54.

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
JCS	Joint Chiefs of Staff
MAB	Marine Amphibious Brigade
MAF	Marine Amphibious Force
MAU	Marine Amphibious Unit
MOS	military occupational specialty
NATO	North Atlantic Treaty Organization
RO	requisitioning objective

CHAPTER 1

INTRODUCTION

In fiscal year 1978 the U.S. Marine Corps' authorized strength was 191,500 active duty and about 32,400 reserve personnel--a total force structure of 223,900. The Corps was divided into three active divisions of ground forces and three air wings. There was one reserve division and one reserve air wing. For the same period, $3.2 billion was directly appropriated for these forces.

By statute, the Corps is responsible for developing warfare doctrine, tactics, techniques, and equipment for use in amphibious operations--primarily amphibious assaults. The Corps' structure has been set by legislation. Key provisions of the National Security Act of 1947, as amended in 1973, state that:

> "The Marine Corps, within the Department of the Navy, shall be so organized as to include not less than three combat divisions and three air wings, and such other land combat, aviation, and other services as may be organic therein. The Marine Corps shall be organized, trained, and equipped to provide fleet marine forces of combined arms together with supporting air components for service with the fleet in the seizure and defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign."
>
> * * * * *
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> "The Marine Corps shall develop in coordination with the Army and Air Force those phases of amphibious operations that pertain to the tactics, techniques, and equipment used by landing forces."

AN OVERVIEW OF AMPHIBIOUS ASSAULTS

An amphibious assault involves projecting force from the sea powerful enough to displace shore defenders, taking and holding the beachhead, and mounting offensive action further inland toward an ultimate objective.

An amphibious assault requires elaborate preparations and precise timing and coordination by all forces involved in the assault. In addition, a successful amphibious assault requires air superiority and control of the seas at the assault location.

Preparatory phase

Tactical preparations for the assault begin with the formation of the amphibious task force in the general objective area. Other actions include

--suppressing and controlling opposition air and sea forces;

--bombarding coastal defenses with naval gunfire and naval air sorties;

--sweeping mines from the sea lanes to the beach;

--destroying underwater obstacles; and

--conducting reconnaissance, intelligence, and mine clearing operations ashore.

Assault phase

When the assault begins, several actions occur simultaneously:

--Marine troops proceed to the beach in a variety of landing craft.

--An air assault element puts Marines ashore by helicopter.

--Naval gunfire continues.

Then:

--When a beachhead is established, the general bombardment stops and precision shelling and sorties begin.

--Equipment, supplies, and more Marines are landed, and medical evacuation begins.

--A Marine tactical airfield is established, and naval air power gives way to Marine close-air support to ground troops.

--The landed forces move toward objectives.

THE CORPS' TACTICAL STRUCTURE

The Corps' peacetime structure consists of three active and one reserve Marine Amphibious Forces (MAF), each consisting of an infantry division, force service support and force troops (logistical and combat support forces), and an aircraft wing. These forces are formed into fleet Marine forces, which serve as reservoirs of resources for use in establishing Marine air/ground task forces. A task force can be any size; however, it would typically fall into one of the following three structures.

Marine Air/Ground Task Forces

Tactical unit	Marine Amphibious Unit	Marine Amphibious Brigade	Marine Amphibious Force (note a)
Components:			
Ground	Battalion Landing Team	Regimental Landing Team	Marine Infantry Division
Air	Composite Helicopter Squadron	Aircraft Group	Marine Aircraft Wing
Support	Logistics Support Unit	Logistics Support Group	Force Service Support Group
Profile:			
Troop complement	1,600-4,000	6,000-18,000	40,000-50,000
Tactical aircraft	As required	45-65	125-175
Helicopters	20-36	75-100	175-225
Tanks	5-10	17-34	70-140
Artillery pieces	6-12	24-42	75-100

a/An MAF may have more than one Marine Division and more than one Marine Aircraft Wing.

It is interesting to note that the largest Marine Corps amphibious assault since the end of World War II was the 1950 assault at Inchon in Korea. That landing force was roughly equivalent to two-thirds of a division.

SCOPE OF REVIEW

We reviewed the combat readiness of those Marine Corps elements having European wartime commitments, primarily the II MAF, and assessed the likelihood of their being able to fulfill these obligations. Our review did not deal with less than MAF-size commitments because they do not represent major obligations of the Corps' assets. We sought to review commitments of substantial Marine forces to apparently critical areas.

Work was done at:

--Headquarters, U.S. Marine Corps, Arlington, Virginia.

--Fleet Marine Forces, Atlantic, Norfolk, Virginia.

--Second Marine Division and Second Force Service Support Group, Camp Lejeune, North Carolina.

--Second Marine Aircraft Wing, Cherry Point, North Carolina.

--Little Creek Naval Amphibious Base, Norfolk, Virginia.

--Marine Corps Logistics Support Base, Atlantic, Albany, Georgia.

--First Marine Division and Pacific Force Service Support Group, Camp Pendleton, California.

--Third Marine Aircraft Wing, El Toro, California.

CHAPTER 2

ISSUES AND PERSPECTIVE

In reviewing the II MAF, we identified serious problems concerning its deleted particularly in a reasonably responsive time frame. Our review also raised serious questions and issues about the size, structure, and missions of the Corps.

FORCE READINESS

Readiness of a military force can be defined in a number of ways. The Secretary of Defense has characterized readiness as the capability to respond adequately to combat situations and to sustain that response for as long as necessary. Such a capability depends on a number of interrelated factors that must function and be viewed as a system.

Thus, military readiness truly exemplifies the "weakest link in the chain" theory. It cannot logically be argued that any one readiness element is more important than another since serious degradation in one is not likely to be offset by strength in another but will, rather, tend to so weaken the system that it can no longer accomplish the mission.

This relationship of readiness factors or elements is particularly appropriate for evaluating the readiness and ability of an MAF to carry out a designated mission because such a force is an integration of air, ground, and naval forces combined to execute a most difficult and complex military operation--the amphibious assault. Successful execution, therefore, depends on specific elements in a task force being able to perform their mission.

To achieve a high state of readiness, four major factors that must be present are (1) enough equipment and materiel in a reasonably acceptable condition, (2) enough skilled, trained personnel, (3) a capability to deploy and be employed rapidly, and (4) an ability to sustain effective operations. In reviewing the II MAF, we found deleted

Equipment condition

Much of the combat-essential equipment available to units of the II MAF was in deleted condition and

would require deleted before the equipment could be used deleted In addition, the equipment readiness reporting system needed improvement. (See ch. 4.)

Personnel

There were personnel shortages in a number of essential occupational specialty fields, particularly those which require formal training in the more complex skill areas (for example, aircraft mechanics). (See ch. 6.)

Deployment capability

The II MAF faces serious problems in deploying in the amphibious assault mode because of a lack of amphibious ships available when and where needed to transport troops and equipment to an objective area. (See ch. 3.)

Supply support

The supply systems supporting II MAF units were deleted which contributed greatly to the deleted (See ch. 5.)

UNRESOLVED QUESTIONS COULD INDICATE MORE BASIC PROBLEMS

Our review suggests that some of these obstacles affect the entire Marine Corps, thus raising serious issues and questions about the Corps' size, structure, and mission--issues and questions similar to those raised by the Brookings Institution and others. These problems deserve the highest level attention within the Department of Defense (DOD) and the Congress. Questions to resolve include:

Are resources available and properly allocated to support the Corps' missions?

Corps' resources

Current DOD strategic planning for contingencies is based on the 1-1/2 wars concept. This means that the worst case scenario for planning purposes is a major conflict in Europe involving the United States and our North Atlantic Treaty Organization (NATO) allies against the Soviet Union and other Warsaw Pact forces. At the same time,

the U.S. plans a capability to simultaneously respond to a lesser contingency in some other part of the world.

The European contingency obviously dominates U.S. defense planning and generates the bulk of general force requirements. Accordingly, an increasing amount of DOD resources is being committed to strengthen U.S. force capabilities in the European theater. For example, the Army has recently announced plans to preposition equipment for three additional divisions in Europe (a multibillion-dollar program) to allow high-priority units to respond in force more quickly should the need arise. This action is planned even though DOD acknowledges that the readiness of Army forces, both active and reserve, stationed in the United States will decrease because equipment will be both withdrawn and diverted from them to support the new program. Further, DOD's budget submitted for fiscal year 1979 is being called the "NATO budget" because of the increased support it provides to our European commitment.

Such increased emphasis and reallocation of resources toward the defense of Europe has not occurred much within the Marine Corps. This fact contributes greatly to the problems regarding the readiness of II MAF and its ability to adequately respond to its NATO commitment.

In general, the Corps distributes its resources on a "fair share" basis, rather than allocating them to specific missions. Thus, even though the II MAF is the first Marine force scheduled for deployment to Europe in wartime, it is not accorded a priority claim to resources--ships, personnel, or funding. As an example, the II MAF would need [deleted] amphibious ships to carry out its NATO mission. However, only about half of the Navy's inventory of amphibious ships--about 33--are stationed in the Atlantic Ocean. And not all of these ships are available at any one time because some are in routine maintenance. The other ships needed by II MAF are in the Pacific Ocean, 11 to 26 days transit time away from the Atlantic ports of embarkation of the II MAF. This allocation philosophy applies to other resources, such as personnel and funding, as well.

The rationale behind this seeming disparity lies in the Corps' perception of its real mission: being ready to deploy rapidly to any part of the world where U.S. interests are threatened.

As stated by the Commandant, the Corps' primary mission is to furnish air and ground forces of combined arms for service with the fleets to provide the capability of projecting combat power on short notice to protect the Nation's interests anywhere in the world. This mission forms the basis for all planning, programing, and budgeting for the structure of the Marine Corps.

As a result, the Corps' active forces are deployed as follows:

--One division-wing team (MAF) is based on the East Coast for use in contingencies in the Atlantic hemisphere.

--A second is deployed in the Western Pacific (Japan and Okinawa) to support U.S. policy in the Pacific hemisphere and Indian Ocean.

--A third is based on the West Coast and functions as a "swing force" for deployment anywhere, in the Pacific or Atlantic.

This deployment results in roughly a 60-40 split of Marine forces between the Pacific and Atlantic areas, respectively. Operating costs to support this force, however, break down 70-30 in favor of the Pacific area.

Any discussion of the way the Marine Corps allocates resources should address the Corps' need for its extensive air power capability. The Corps believes that a close-knit air/ground team, where marine supports marine, produces a more effective, unitized fighting force. Moreover, the Corps feels that its combat environment, a contested beachhead, may not lend itself to support from Air Force, Navy, or allied aircraft because of the potential.distances from home bases and the competition for their use. The Corps' inventory, as a result, consists of a large number of rotary and fixed-wing aircraft, which now consume a major portion of the Corps' available funds and absorb a large segment of its technically trainable personnel.

During the 10-year period 1970-79 (budget submission), almost $9 billion in procurement funds was allocated for support of aviation and ground Marine forces. Most, about $6 billion, went to support aviation forces.

According to doctrine, Marine Aircraft Wings exist essentially to provide air power to Marine ground forces after they have established a footing at the assault area. However, historically, this has not been the practice. In Korea and Vietnam, Marine aircraft were combined with the resources of the Navy and Air Force in joint air operations.

Further, the size of the ground force that can be lifted by amphibious shipping has decreased during the last 10 years from about 1-2/3 MAFs to 1 MAF. With delivery of new ships under construction, lift capability will stabilize at about 1-1/3 MAFs. Thus, the question is--should Marine aviation receive the level of support it does when amphibious shipping for the foreseeable future will only accommodate the deployment for an amphibious assault of slightly more than one of the four MAFs in the Corps? Further, does the preeminence afforded to Marine aviation over ground forces result in a degradation of ground forces' capabilities?

Other service resources

An amphibious assault of the magnitude anticipated in the Corps' current European commitments involves extensive participation by the Navy and perhaps by other services.

Crucial roles assigned to the Navy are:

--Transporting the Marine forces equipment to the objective area.

--Sweeping mines from the sea approaches to the beach or landing area.

--Softening enemy resistence with naval gunfire and air strikes.

--Delivering the force to the beach.

--Resupplying the force.

--Extracting and redeploying the force as necessary.

The Navy would have trouble supporting such an operation because (1) there are only enough amphibious ships available to transport an assault echelon (about 30,000 personnel) and only then by waiting 2 to 4 weeks for Pacific-based ships

to travel to Atlantic coast ports of embarkation, (2) there are deleted (there are only three active minesweepers on the east coast), and (3) the deleted to effectively soften up the beach for a large assault force. Another factor to be considered is whether the Navy would or should commit its strategic ships--aircraft carriers and their escorts--to the high-risk environment such an operation would likely entail.

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Are large amphibious assaults practical today?

Environment and technology changes

The Marine Corps' island-hopping campaigns in the Pacific Ocean theatre during World War II are well known. These islands were strategically important because they provided the bases from which sea and air attacks could be launched against enemy forces. Since there were no large, friendly land masses from which to launch attacks against enemy-held islands, there were no feasible alternatives to the tactic of amphibious assaults. In that era, with luck, it was even possible to launch a surprise attack or complete an attack before enemy reinforcements could arrive.

The Corps' most demanding commitment today is the defense of our NATO allies in Europe. The geographic features of this area are vastly different from the Pacific island setting of World War II. Further, since the end of World II, the technology of warfare has changed immensely. In the ensuing 33 years, many sophisticated weapons and devices have been developed, including (1) nuclear weapons, (2) nuclear-powered submarines and surface vessels, (3) rockets, missiles, and other precision-guided munitions, (4) advanced and long-range jet aircraft, and (5) communications and spy-in-the-sky satellites.

Thus, the potential for surprise has been severely reduced, and a large amphibious force assembled for an assault would be extremely vulnerable to modern weapons.

Past use of Corps forces

The amphibious assault, one of the most difficult and complex military operations to execute, is the underlying basis for the Corps' existence. However, not since its action in the Pacific theater during World War II, more than 30 years ago, has the Corps been used in a large-scale amphibious assault of the magnitude now called for in contingency plans. The largest operation undertaken since then was the 1950 landing at Inchon in Korea. The size of the force used was roughly equivalent to two-thirds of a division. In Korea and Vietnam, the Corps' ground forces functioned in the same role as Army ground forces. Similarly, the Corps' aircraft were basically used in general support of all forces in combined operations with the Navy and Air Force.

Response capability

The Marine Corps claims that it is the Nation's force is readiness and, thus, that it is capable of projecting combat power on short notice anywhere in the world. Such a statement implies that the Corps is a quick reaction force that can be effective anywhere.

Our review suggests otherwise. First, "quick reaction" in today's terminology suggests an ability to respond in force in a matter of days. As discussed later in this report, the Marine Corps depends for any large deployment on amphibious ships to move its personnel and equipment. Almost by definition, this excludes the Corps from being considered a quick reaction force because it takes a long time (1) to assemble the ships required, (2) to load the vessels and embark, and (3) to steam to an objective area. For any large force, therefore, reaction time would be expressed in terms of weeks, not days.

Launching an attack from the sea against a hostile beachhead is a unique capability. However, two basic questions need to be answered: (1) What contingency or mission can best be responded to by such a force? (2) Is the concept of amphibious assault a basic military function around which a force should be permanently structured, or is it a combat tactic with somewhat limited application?

Evidence suggests that some of these questions are being asked within the defense establishment. For example, the Secretary of Defense has recently indicated that plans will be considered to use Marine forces, both ground and air, along with Army forces to form a special strike force for use in handling localized contingencies, perhaps on the periphery of NATO. Such a force supported by a Navy aircraft carrier could probably be very effective in such circumstances.

Can the Corps operate effectively against the heavily armored and mechanized forces it would encounter in performing its priority and other missions?

Future trouble spots are considered likely to appear in areas where political and economic power exists--not in backward areas where the opponent would be a poorly organized local infantry. The nations in such areas will likely have the means to equip themselves with relatively sophisticated armored, mechanized forces.

The Corps is basically a light infantry force supported by organic air power. It has few tanks, lacks battlefield mobility, and has a limited antitank capability. In fact, it has no counterpart organizationally speaking in the U.S. Army or the Soviet Army.

Major potential crisis areas include Europe and the Middle East. In Europe the Warsaw Pact forces are highly armored, mechanized, and mobile and are supported by a formidable arsenal of weapons. In addition, these forces enjoy the tactical advantages of (1) choosing where and when to initiate hostilities, (2) determining, to a large degree, the level, intensity, and duration of hostilities, and (3) short supply lines.

Most of the Middle East area states have organized their forces into mechanized and armored formations, including hundreds of tanks. The intensity and firepower capable of being generated by such forces is well illustrated by the 1973 conflict between Israel and the Arab states.

Can the Corps, realistically, be combat effective in such an environment?

The Brookings Institution in its report "Where Does the Marine Corps Go From Here?" issued in early 1976 suggested a wide range of recommendations and alternatives for resolving these issues. Included were the following:

--Reducing the Corps to 1-1/3 MAFs, thereby sizing the force to planned amphibious sealift capability.

--Replacing the Army in the Pacific theater and giving the Corps primary responsibility for inland combat in that area.

--Mechanizing the Corps, while having it retain its amphibious operations role.

--Reorienting the Corps mainly toward sustained inland combat in Europe; in effect, having it join Army forces in that theater.

CONCLUSIONS

The internal [deleted] problems of the II MAF, coupled with external problems (for example, the shortage of amphibious ships), raise serious questions about the [deleted] particularly in a responsive time frame.

Most of these problems are beyond the control of the II MAF and, in fact, affect the Marine Corps as a whole. Further, some--for example, mobility capability--are long-term problems that cannot be solved quickly or cheaply. This is particularly true as long as the Corps is structured, deployed, and tasked as it is today. We, therefore, believe that it is time to resolve the difficult issues raised above and to make some hard decisions about the future role, mission, and size of amphibious forces in U.S. defense strategies.

RECOMMENDATIONS

We recommend that the Secretary of Defense, in coordination with the Commandant of the Marine Corps and the Joint Chiefs of Staff, reevaluate (1) the structure and deployment of Marine Corps forces in relation to currently assigned missions, focusing on the ability of these forces to execute their most demanding mission, and (2) the requirement for a 200,000-plus strength amphibious force in the projected threat and technological environments expected to develop in the future.

This reevaluation should take into account that, within the range of potential contingencies which might require the use of U.S. military power, two basic factors of defense or force planning need to be considered: (1) some contingencies would affect U.S. interests far more than others and (2) some contingencies would require more resources than others. In other words, the Corps should establish a system to allocate available resources to its higher priority missions.

Other conclusions and recommendations pertaining to specific aspects of our review are presented in the following chapters of this report.

AGENCY COMMENTS

DOD noted that this report had had a beneficial effect on some problems we identified (for example, supply support). However, it disagreed with our recommendations to (1) undertake a major evaluation of the size and future role of amphibious forces in U.S. defense strategies and (2) develop a priority system for allocating resources within the Corps.

DOD believed that, rather than making an overall study of the Corps, it needed to concentrate on specific measures which would contribute to deploying Marine Corps forces more quickly and more effectively, deleted Both of these alternatives would likely have a positive effect in reducing response time, deleted however, neither have a naval or maritime perspective which the Corps' comments indicate (see p. 67) is its primary mission. Further, both alternatives would appear to have a complicating effect on the deleted

Regarding resources, DOD commented that the resources to be applied to the Marine Corps and its mission, size, and force structure will be examined in the Planning,

Programing, and Budgeting System process and in subsequent congressional reviews. Further, it stated that GAO's basic assumption in this issue is that the Corps is wrong in having distributed resources based on a worldwide "fair-share" basis rather than on "specific missions" associated with a European contingency. This assumption is extended to state that the resultant "disparity" is due to "the Corps' perception of its mission--that of being ready to deploy rapidly to any part of the world where U.S. interests are threatened." DOD believed that inherent in our assumption is an acceptance of a single-scenario national strategy.

In discussing resource allocation, we are not suggesting that the Corps should plan solely for a single scenario--European or otherwise. Rather, we are suggesting that, within the range of potential contingencies that might require the use of U.S. military force, some contingencies (1) would affect U.S. interests far more than others and (2) would require more resources than others. Therefore, it seems logical to incorporate these factors into the planning process and allocate resources accordingly.

CHAPTER 3

PROBLEMS WITH DEPLOYING A LARGE AMPHIBIOUS FORCE

The II MAF faces serious basic problems in its ability to deploy to contingency commitment areas, particularly in responsive time frames. The major problem is the lack of enough amphibious ships available when and where needed to transport troops and their essential equipment to an objective area and conduct an amphibious assault. Although there are enough amphibious ships in the Navy's inventory--66--to transport the assault echelon of an MAF-size deployment, the number actually available at any point in time is not adequate because (1) some ships in the fleet are routinely in drydock or undergoing repair and, therefore, not readily available for use and (2) the amphibious ship fleet is stationed on about a 50-50 split between the Pacific and Atlantic Oceans; thus, transit times to Atlantic ports of embarkation for Pacific-based ships are too great to allow a quick reaction time in a European contingency.

In addition, there are other problems, such as the detectability and vulnerability of such a force and the ability of the other services--the Navy and Air Force--to provide the essential auxiliary functions to support an MAF-size assault.

In view of the magnitude of these problems, there is some doubt about the validity of the Marine Corps' claimed capability of projecting combat power on short notice anywhere in the world.

EVOLUTION OF THE AMPHIBIOUS FLEET

Over the past 10 years or so, the number of amphibious ships has been greatly reduced--from 157 in 1968 to 66 now. During this period, over 120 ships were decommissioned, largely between 1968 and 1972, and 23 new ships were introduced into the force. Lift capability of the amphibious fleet has also been reduced, but not in proportion to the reduction in the number of ships because, on a ship-to-ship basis, the new ships were larger than those they replaced. The amphibious fleet force is now the newest in the Navy, with an average age of 10 years at the end of fiscal year 1977.

Decrease in lift capability

At the end of the 1960s, enough ships were available to simultaneously lift the assault elements of 1-2/3 MAFs. Current capability is about one MAF. The current objective of being able to lift 1-1/3 MAFs will be achieved with the delivery of the last three (of five) general-purpose amphibious assault ships still under construction. The amphibious fleet inventory will be stabilized at about 66 active ships.

Ship procurement

Since 1968 the only amphibious ship procurement authorized by the Congress has been the five general-purpose amphibious assault ships. Two of these ships have been delivered, and the other three are scheduled for delivery by the end of fiscal year 1980. The total cost of these ships is estimated to be about $1.2 billion; however, the program has experienced numerous delays and contract disputes, not all of which have been settled. Therefore, the ultimate cost may vary from this total.

To maintain the 1-1/3-MAF lift capability, a replacement program for only one class of amphibious ships--the eight-ship LSD-28--is being considered for the next 5-year period. A procurement program to replace this class had been expected to begin with one ship in fiscal year 1979, with the balance following through fiscal year 1982. Funding of $232 million had been proposed for inclusion in the 1979 budget. The start of this program, however, has been delayed until 1980 or later.

THE CORPS' COMMITMENT TO EUROPE

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Amphibious operations are the focus of its operational commitments in its two basic roles: (1) direct amphibious assaults against hostile shores and (2) flanking amphibious operations to relieve pressure on beleaguered friendly forces or for tactical advantages.

The more vital areas and the force-size commitments are summarized on the following page:

Area: importance	Committed force Size	Source
deleted		

For the areas calling for an MAF-size force, deleted

Magnitude of an MAF-size deployment

The size of an MAF task force can vary according to circumstances; however, the following table, which shows the potential range in personnel and equipment, suggests the magnitude of such a movement.

Category	Quantity
Personnel	40,000 to 50,000
Fixed-wing aircraft	125 to 175
Helicopters	175 to 225
Tanks	70 to 140
Artillery pieces	75 to 100

Not all of the 40,000 to 50,000 personnel would be deployed aboard amphibious ships, simply because there are not enough such ships to accomplish such a move. Thus, the deleted

deleted

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INVENTORY, LOCATION, AND AVAILABILITY OF SHIPPING

The Navy has 66 amphibious ships of the type required to move the Corps' assault echelon. This quantity would appear to be sufficient since it would take only about deleted ships to move an MAF-size force. However, to evaluate the availability of shipping, two important factors must be considered: (1) the number of ships actually operational and not undergoing repairs or drydock and (2) the location of the fleet in relation to the Atlantic ports of embarkation. The following table shows the total fleet by type, general location, and operational status as of July 12, 1977.

Ship type	Number stationed in: Atlantic	Number stationed in: Pacific	Status on July 12, 1977: In port	Deployed	Restricted availability: Pacific	Restricted availability: Atlantic	Regular overhaul: Pacific	Regular overhaul: Atlantic	Total
Command ship	1	1	1	1	0	0	0	0	2
Amphibious assault ship	4	3	-	3	1	1	1	1	7
Amphibious transport	1	1	1	1	0	0	0	0	2
Amphibious cargo ship	2	4	-	3	1	1	1	0	6
Amphibious transport dock	7	7	2	8	1	0	2	1	14
Dock landing ship	6	7	2	7	1	1	1	1	13
Tank landing ship	10	10	3	13	0	1	0	3	20
General purpose assault ship	1	1	-	1	1	0	0	0	2
Total	32	34	9	37	5	4	5	6	66
Less: ships in maintenance	10	11							
Ships available	22	23							

According to Navy officials, the above distribution of ships by location and by status is representative of the fleet's condition at any given time. Thus, only about 70 percent of the fleet (about 46 ships) are routinely available. The Navy assumes that ships undergoing overhaul could be made available for use 30 days after mobilization orders. Our reviews of the Navy's maintenance programs, however, indicate that this time frame may be optimistic. 1/ Ships in a restricted availability status, according to Navy standards, are supposed to be made available within 3 days.

As shown in the above table, only about 22 ships are readily available in the Atlantic for use in deploying the II MAF to Europe. Further, of those stationed in the Atlantic Ocean area, some are deployed in the Mediterranean and other locations that would require up to 11 to 12 days to reach the Atlantic ports of embarkation. The ships in the Pacific Ocean would require up to 26 days to reach the Atlantic ports under optimal conditions. The map on the following page indicates the transit times required for all ships.

1/GAO report "Naval Shipyards--Better Definition of Mobilization Requirements And Improved Peacetime Operations Are Needed" (LCD-77-450, Mar. 31, 1978).

Amphibious Ship Availability

deleted

The illustration shows that not enough amphibious assault ships are readily available to conduct an MAF-size amphibious assault anywhere in a timely manner. Transit times from Pacific locations to Atlantic embarkation ports are in the range of 2 to 4 weeks; embarkation and movement across the Atlantic would take an additional 3 weeks. In all, it would take nearly 2 months to place deleted near its deployment area. Additionally, using Pacific fleet vessels for trans-Atlantic purposes would create a serious problem in the Pacific because this would affect the ability of the I and III MAFs and other forces to respond adequately to their commitments in that area should the need arise.

According to the JCS, deleted

AVAILABILITY OF SUPPORT FROM OTHER SERVICES

To carry out a major deployment to Europe, the Corps would require Navy and Air Force support. Actual and potential problems in relying on these two services to provide needed support are discussed below.

The Navy's roles in an amphibious assault

The Navy plays a number of vital roles in amphibious assault operations. Besides providing amphibious assault shipping, it must

--control the seas and air space around the amphibious assault area,

--sweep mines from amphibious assault approaches, and

--soften up the beachhead with naval gunfire and air-to-ground weaponry.

Control of sea and air space

Control of sea and air space is essential to a successful amphibious assault operation. Thus, an amphibious task

force requires a large number of vital Navy surface combatant ships, such as a carrier and its cruiser and destroyer escorts. Unlike the Korean and Vietnam conflicts, in which the Navy was not seriously challenged at sea or in the sky, major trans-Atlantic scenarios pose significant threats against an amphibious task force from Warsaw Pact air and submarine forces. In situations where there is a major threat against these vessels, naval doctrine calls for them to withdraw from the immediate threat area to gain maneuverable sea room and more time to detect threats and to take measures to protect themselves. Moreover, against an opposing force capable of destroying these vessels, naval doctrine requires them to be able to protect the sea lanes and engage the enemy sea forces.

Minesweeping

Before an amphibious assault, the Navy should clear mines away from the sea approaches to the beachhead to enable amphibious ships and craft to reach the shore. An uncleared, heavily mined sea lane would neutralize an amphibious assault.

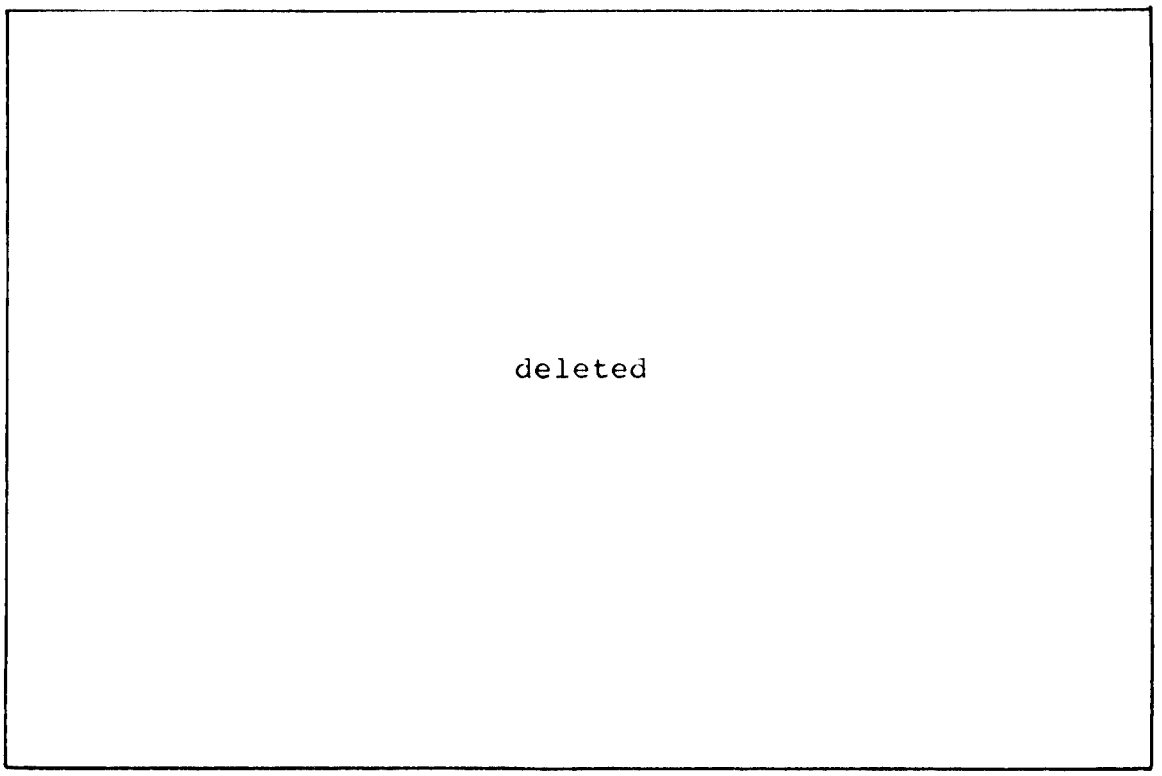
The Navy has only three active minesweeping vessels in the Atlantic. Navy and Marine Corps officials said this number may not be adequate to provide the minesweeping services needed for an MAF-size assault.

Naval gunfire

Amphibious warfare doctrine requires heavy bombardment of the objective area with naval gunfire and air sorties. The purpose is to impair the opponent's ability to fire on the landing force as it is transported from ship to shore--its most vulnerable phase--and to weaken the opponent's ability to push back the landing force. The experience of the Marines in World War II clearly demonstrated the importance of such bombardment.

As with its minesweeping capability, the Navy's ability to deliver heavy naval gunfire has also diminished greatly. deleted The Navy has programs underway to acquire heavy guns, deleted

Availability of support
from other sources



AN AMPHIBIOUS TASK FORCE--
DETECTABLE AND VULNERABLE

During World War II, amphibious assaults and landings were used extensively in both theaters of the war. Both the exploits of the Marine Corps in the Pacific and the Army's massive amphibious landing on the beaches of France are well known. In that era, weapons and equipment were, by today's capabilities, crude. Some of today's technology did not even exist; for example, spy-in-the-sky satellites, nuclear weapons and submarines, and ship-killing missiles.

An MAF-size deployment could consist of as many as 118 ships (amphibious ship fleet and other Navy surface combatant ships, such as carriers and their cruiser and destroyer escorts) and 100,000 Navy and Marine personnel. Such an assemblage of resources proceeding at 16 to 20 knots across the Atlantic would be easily detectable with the sophisticated, modern observation systems in use today and, thus, would represent a highly visible and vulnerable target.

CONCLUSIONS

The successful deployment of II MAF forces to Europe in an amphibious assault mode in the time frames required by current contingency plans appears impractical because (1) there is a shortage in essential support required from other services and (2) deleted

Although the Corps' most demanding commitment is to reinforce NATO during a conflict in Europe--an Atlantic Ocean mission--two-thirds of the active Marine Corps forces and half of the Navy's amphibious ships are stationed in the Pacific Ocean area. Further, the force needed to launch an MAF-size assault would be highly visible and vulnerable.

Answers to the questions concerning how amphibious shipping resources should be distributed and how adequate the support from other sources is depends on the outcome of the reexamination and evaluation of the size, structure, and deployment of forces we recommended on pages 13 and 14.

AGENCY COMMENTS

deleted

Both of these alternatives--deleted--would likely reduce response time; however, neither have a naval or maritime perspective, which as stated in the Corps' comments (see p. 67), is its primary mission. Further, both alternatives would appear to complicate the deleted

CHAPTER 4

EQUIPMENT READINESS

Having enough combat-ready weapons and equipment is essential for successful combat operations. The Corps basically has on hand most of the equipment it is authorized. However, although the equipment and weapons are being reported as fully or substantially combat ready, the actual condition is not as good as reported. Thus, before these units could deploy, [deleted] maintenance and repair work would be required to upgrade the equipment to a combat-ready condition. Further, because of supply and personnel shortages (discussed in chs. 5 and 6), [deleted]

EQUIPMENT CONDITION

We reviewed the condition of the ground and air equipment within the II MAF separately.

Ground equipment

To evaluate the accuracy of material readiness reporting, we randomly selected 58 pieces of combat-essential equipment that were reported as combat ready. Our equipment sample was taken from the universe of equipment and weapons listed in the following table. The number of items "deadlined" (not combat ready) at the time of our selection is also shown.

Description	Total quantity available	Number reported deadlined	Percentage deadlined
8-inch self-propelled howitzer	deleted		
175mm self-propelled gun			
Fuel truck, 5,000 gallons			
Tractor truck, 10 tons			
105mm towed howitzer			
Radio vehicle MRC-110			
155mm self-propelled howitzer			
M60 tank			
Amphibious tractor LVTP-7			
Amphibious tractor LVTC-7			
Amphibious tractor LVTR-7			
TOW missile launcher			
81mm mortar			
106mm recoilless rifle			

Inspection results

We observed a Marine Corps team of technicians inspect the selected equipment items to determine whether they were combat ready as reported. The following table shows the results of the inspections and our ratings.

Readiness condition	Inspection team		Our observers	
	Quantity	Percent	Quantity	Percent
Ready	deleted			
Not ready				
Deadlined for inspection	8	14	8	14
	58	100	58	100

Statistically projecting our inspection results to the equipment universe, we can say that deleted pieces of equipment were not combat ready or had deficiencies that severely degraded their mission capability.

We questioned 12 of the ready ratings assigned by the Marine inspection team because the items inspected had seemingly serious deficiencies which would affect their mission capability. Such deficiencies included (1) the inability of vehicles to start due to weak or dead batteries, (2) inoperative or missing radios, which eliminated communication capabilities, (3) missing and worn tracks on tracked vehicles, such as tanks and amphibious tractors, and (4) inoperative weapons and turrets. Among the equipment for which we questioned the ratings was the 155mm self-propelled howitzers. Two of these weapons were included in our inspection sample--the inspection team determined one to be combat ready and the other not combat ready. The one declared combat ready had the following defects:

--The electrical generator was inoperative and the batteries were dead.

--The gun turret could not be operated in the power mode because there was no electrical power to run the hydraulic system.

--The engine could not be started by its own power because all batteries were dead, and the governor and throttle linkage needed replacement.

--The bearings in the steering control were bad and needed replacement.

After our inspection of ground equipment, officials of the Fleet Marine Forces, Atlantic, command initiated action to establish more detailed criteria for judging the readiness of equipment in the four commodity areas of communications/electronics, engineer, motor transport, and ordnance. Items included the M60 tank, M54 truck, LVTP-7 amphibious tractor, and howitzers and guns. An order was published in mid-1978 directing the implementation of the new criteria (within II MAF). Since the new criteria cover deficiencies that we questioned, we believe our ratings fairly represent the status of the selected equipment universe.

Aircraft and related equipment readiness

At the time of our review, the airwing of the II MAF, the 2d Marine Aircraft Wing, was reporting a substantially to fully combat-ready condition. Our review disclosed, however,

that [deleted] maintenance and repairs would be necessary for the Wing to deploy in a fully combat-ready condition and with the [deleted] its aircraft. Further, problems in certain functional areas, such as command and control, could hamper the Wing's ability to effectively carry out its mission.

Aircraft status

Overall for fiscal year 1977, the aircraft systems in the Wing were reported to be operationally ready for maintenance purposes [deleted] percent of the time available. Thus, [deleted] percent were not operationally ready due to supply shortages or maintenance problems. Individual aircraft systems ranged from a low operationally ready rate of [deleted] percent to a high of [deleted] percent. The range for full systems capability (that is, aircraft capable of performing all designated missions) ranged from a low of [deleted] percent to a high of [deleted] percent. Slightly more than half of the not operationally ready time was attributed to supply shortages and the rest to maintenance problems. The following table recaps the status for the major aircraft systems of the 2d Marine Aircraft Wing for fiscal year 1977.

Aircraft type	Quantity available (note a)	Fiscal year 1977 maintenance data: Operationally ready	Not operationally ready due to: Supply shortages	Not operationally ready due to: Maintenance problems	Full systems capable
		(percent)			
Fixed wing:					
OV-10A					
A-6E					
AV-8A					
F-4J					
EA-6A					
TA-4F					
TA-V8A					
A-4M					
KC-130F					
Helicopters:					
UH1N					
AH1J					
CH53D					
CH46F					
Average					

deleted

a/Average for October 1977.

This means that, on the average, about [deleted] of the Wing's aircraft are operationally ready and about [deleted] are not (excluding administrative aircraft).

A C-1, or fully combat ready readiness rating for the Corps' aircraft, requires that 80 percent of the planes authorized are actually possessed and operationally ready. When an average of [deleted] percent of the aircraft are reported operationally ready, as reflected in the above schedule, this means that within 72 hours, the Wing would have to repair aircraft to achieve a C-1 rating as shown in the following schedule:

Status	Fiscal year 1977 maintenance average		Surge to readiness rating of C-1		Change in aircraft status
	Planes	Percentage	Planes	Percentage	
Operationally ready	deleted				
Not ready					
Total					

The Corps' aircraft readiness reporting criteria allow the Wing to include, for combat readiness reporting purposes, those deadlined aircraft that, in the commander's judgment, could be made ready in 72 hours. This adjustment permits reporting a higher operationally ready percentage than that reflected by actual maintenance status. In effect, the system reports what could be, as opposed to what is. Further, it implies that, should the need arise, the Wing's supply and maintenance systems have a surge capability that can overcome the obstacles which normally prevent the Wing's aircraft from achieving a fully combat-ready status.

The only way to realistically prove or disprove the Wing's surge capability would be to conduct an unannounced field exercise with that objective. However, some information suggests that there would be [deleted] difficulty in surging to a C-2 or C-1 status in 72 hours. For example:

--All needed repair parts would have to be readily available. However, as detailed in chapter 5, there are deleted shortages in the Wing's supply system. Further, deleted Overall, requisitions submitted to the Wing's supply system could be satisfied at that level.

--All required maintenance would have to be readily available. As discussed in chapter 6, there are significant shortages in certain aircraft maintenance skills which could create problems during a surge.

Other air wing systems and equipment

In addition to aircraft, we reviewed the status of (1) equipment used by the Marine air control groups to coordinate the air command and control function and (2) equipment used by the Wing's antiaircraft HAWK missile battalion.

Marine air command and control system

A major mission of the 2d Marine Aircraft Wing is to provide management and control of aircraft and missiles through its Tactical Air Command Center. There are certain communications/electronic equipment systems that are critical to the operation of the center and its related units. In examining the availability of five of the critical equipment systems, we found that they were deadlined for long periods. The following table shows the deadline rates for these systems for the period January to June 1977.

Equipment	Number		Percentage deadlined		
	Authorized	On hand	Average	Low	High
Communications central group (AN/TYA-11)	deleted				
Communications central (AN/MRC-87A)					
Air support radar team communication facility (AN/TRA-9)					
Radio set (AN/GRC-135A)					
Radio set (AN/TRC-75)					

deleted (See chs. 5 and 6.)

HAWK missile system

The mission of the Corps' HAWK antiaircraft missile battalions is to provide surface-to-air missile defense of assigned areas of operation or installations and vital zones against hostile low- and medium-altitude air attacks. For example, they are to provide (1) defense of the landing force during an amphibious assault and (2) defense against air attack on Marine tactical airfields established in the early stage of an amphibious assault operation. These airfields provide a base of operation for Marine aircraft used to provide air support to Marine ground forces.

Each of the Corps' four airwings has a requirement for a HAWK battalion consisting of four batteries; however, the 2d, 3d, and Reserve Airwings have only three batteries each, and the 1st Wing has no HAWK capability at all. Officials explained that the fourth batteries have been deactivated because of personnel and funding limitations.

Although the II MAF has consistently reported its HAWK battalion to be deleted The basic reason for the difference in reported and actual capabilities was spare parts and technician availability problems. The following table reflects the downtime rates reported for some of the major systems in the HAWK battalion for the 6 months ended June 1977.

System	Number authorized	Number possessed	Average percentage reported deadlined January-June 1977
High power illuminator radar (target tracking)	deleted		
Continuous wave acquisition radar (low level target acquisition radar)			
Range only radar (target acquisition in electronic warfare conditions)			
Information control central (data link to tactical air control center)			
Communications generator set 3KW (communications electrical power)			
Communications generator set 10KW (communications electrical power)			

As illustrated above, at any general point in time in the 6-month period reviewed, deleted thereby reducing the battalion's capability by that amount.

WAR RESERVE STOCK

The Corps keeps war reserve stocks of major ground force equipment in its depots at Albany, Georgia, and Barstow, California. These items are to be maintained in a full state of readiness at all times. Our review of these reserves focused on two major items--the LVTP-7 amphibious assault vehicle and the M60 tank.

LVTP-7 amphibious assault vehicle

The LVTP-7 is the only item in the Corps' tables of equipment that is peculiar to the Corps. No other U.S. armed service uses it; consequently, unlike the rest of the Corps' ground forces' weaponry and equipment, which are managed by the Army, it is managed by the Corps. The Corps has a requirement of deleted LVTP-7s for its mobilization readiness and prepositioned war reserves. Only deleted of the deleted LVTP-7s possessed, or deleted percent, were ready for use.

How important is this vehicle? It is in the first wave in an amphibious assault and probably will be the first vehicle to touch shore. Once ashore, it serves as an armored personnel carrier, giving the ground force its only mechanized armored troop mobility. Moreover, each vehicle is armed with a .50 caliber machine gun. Each provides armored protection for 28 combat-loaded marines; thus, the shortage equates to the lack of armored protection and mechanized mobility for more than deleted marines.

The problem in supporting this piece of equipment is caused by shortages of repair parts and components. The LVTP-7 is a sole-source item, and many of its essential parts are also sole source. The Corps is having trouble buying some of these parts. For example, the alternator for the LVTP-7 is available from only one supplier, and this firm has refused to do further business with the Government because of contract clauses required by the Armed Services Procurement Regulations. In addition, a supplier for a bearing assembly has refused to provide cost and pricing data for use in determining a fair and reasonable contract cost. Even when suppliers have accepted contracts, the procurement lead time for some has been excessive; for example, one part will not be available for deleted

To resolve these problems, the Corps has (1) continued to negotiate with suppliers and (2) instituted component rebuild programs where possible. Since the LVTP is scheduled for a deleted

In commenting on this report in August 1978, DOD stated that the number of LVTP-7s available for issue had increased by deleted vehicles--from deleted --and that deleted

In view of the systemwide shortages of a number of essential parts and components required to make these vehicles combat ready, it seems highly unlikely that

cannibalization could significantly increase the number of available assets. In any case, the assets available would still be far short of the requirement of deleted vehicles and would also be difficult to support.

M60 tanks

At the time of our review, a requirement for deleted M60 tanks--both RISE (reliability improvement of selected equipment) and non-RISE versions--had been established for stocking at the Corps' depots. Only deleted were actually on hand and deleted of these were not in an issuable condition. A total of deleted tanks were due in or scheduled for delivery. When received, the inventory will total deleted of the requirement. There have been no serious problems in acquiring repair parts for the M60 series tank.

deleted

EQUIPMENT READINESS REPORTING

The Corps' implementation of the JCS forces status reporting system does not accurately portray the combat readiness of its material and, thus, does not give an adequate picture of the capability of units to perform combat missions. We have found problems in equipment readiness reporting in previous reports on military readiness. For example, in our June 9, 1977, report "Another Look at the Readiness of Strategic Army Forces," we found the same type of discrepancies between actual equipment condition and its reported readiness. The Army has since made major revisions to its readiness reporting regulation which more clearly spell out equipment deficiencies affecting combat capabilities and provide more realistic readiness reporting. Since the Marine Corps has much of the same, or at least similar, ground equipment and weapons as the Army, we believe that the Corps could greatly improve readiness reporting by adopting the Army system.

Reporting criteria

The Corps reports equipment readiness based on two factors: (1) the percentage of authorized equipment that is actually on hand or possessed and (2) the percentage of possessed equipment that is operationally ready. A C-1 or fully combat-ready status would be reported if not less than 85 percent of authorized combat-essential equipment, or 80 percent of authorized aircraft, is possessed and operationally ready. A C-4 or not-combat-ready status would be reported if less than 55 percent of authorized combat-essential equipment, or 47 percent of authorized aircraft, is possessed and operationally ready.

System weaknesses

Inherent weaknesses in the current readiness reporting system are discussed below.

--The first criteria for measuring equipment readiness--determining the percentage of authorized equipment on hand--is relatively straightforward and objective. However, the second--determining the percentage operationally ready--is not. The Corps, unlike the Army (with much the same and similar equipment) and the other military services, has not developed uniform standards for judging the impact of equipment problems and deficiencies on equipment mission capabilities. Thus, the ultimate determination of equipment readiness is left, for the most part, to the subjective judgment of individual commanders. In comparison, the new Army system uses a system of checks, known as combat operability checks, for the operator to use in judging equipment condition. Under the Army's newly revised readiness reporting procedures, equipment status will be reported based on the percentage of time, during a 30-day period, that equipment is actually considered to be operational instead of the 1-day "snapshot" report provided under the Corps' regulation.

--The current system allows a "roll-up" effect, which averages the deadlined equipment numbers for all reportable equipment/weapons types without attempting to weight certain types of equipment that are more combat essential than others. Thus, the number of combat-ready 81mm mortars is considered just as important as the number of combat-ready tanks and howitzers. Further, significant deadline rates for

important weapons systems with relatively small quantities on hand can be effectively masked. In contrast, the new Army system establishes "pacing" items--essential weapons or equipment--which must be combat ready if a unit is to be considered capable of performing its mission. The unit's overall equipment rating cannot normally exceed the readiness rating of such items.

--The readiness reporting system does not consider weapons to be systems. Thus, TOW antitank missile systems that are mounted on a jeep could be and were reported fully combat ready even though the jeep was deadlined.

--The system does not attempt to project any residual capacity left in a weapons system to perform its major mission functions for some initial, minimal period of combat. This concept can be illustrated with the following example. Assume the comparison of two tanks, one with an engine that has been run without overhaul for 500 hours and another that has been run for 75 hours after an overhaul. Assume also that test data and experience show a high probability of major engine failure after 500 hours of operation. Under the Corps' readiness criteria, both tanks would be considered to be equally ready although the older engine has a statistically higher probability of breakdown in the initial combat period.

--The system allows deadlined ground equipment and aircraft to be counted ready if, in the commander's judgment, the equipment could be repaired in 1 day and 3 days, respectively. In view of the supply problems discussed later, such an allowance may be unrealistic.

CONCLUSIONS

deleted and this situation is not being accurately reported under the existing readiness reporting system. As a result, deleted Either circumstance would reduce the potential effectiveness of these units.

We recognize that there are constraints under which the II MAF must operate; however, to properly manage resources that are made available and establish logical priorities, commanders must have accurate, realistic information concerning the status of their combat-essential weapons and equipment.

We commend the efforts of the Fleet Marine Forces, Atlantic, in establishing general criteria for reporting the condition of certain types of equipment in II MAF units; however, we believe that this is just the first step in developing a more comprehensive system for implementation Corps-wide.

RECOMMENDATIONS

Recommendations on supply and personnel problems are discussed on pages 48 and 54, respectively.

Regarding equipment readiness reporting, GAO recommends that the Commandant of the Marine Corps develop a uniform readiness reporting system to be used by all Marine units. The system should

--include uniform standards for judging the impact of equipment deficiencies on equipment mission capabilities,

--consider weapons and equipment as whole systems,

--incorporate weighting factors to account for mission criticality of weapons and equipment, and

--make projections of the residual capacity in weapons systems to perform their mission functions for a minimum period of combat.

We believe that, since the Army reporting system incorporates most of these factors, the Corps should seriously consider adopting the Army system.

AGENCY COMMENTS

The Marine Corps disagreed with our conclusions and recommendations concerning equipment readiness and equipment readiness reporting. The Corps believed that its equipment readiness reporting system was effective. According to the Corps, JCS Pub 6 provides complete guidance for the use of the reporting system and the Corps uses that publication's criteria for determining what is "operationally ready."

Further, the Corps commented that, when it is determined that equipment readiness is not being accurately reported, action should be taken to attack the causes before deciding that a new system is needed.

We believe that our recommendation to develop a uniform, Corps-wide equipment readiness reporting system is specifically directed at a major cause of the inaccuracies found during our review--the lack of standards for use in judging the impact of equipment deficiencies on equipment mission capabilities. Such standards or criteria are not contained in JCS Pub 6.

The force status reporting system established a set of information requirements for each of the services, which were then given responsibility for providing the data. Pub 6 merely (1) provides JCS guidance concerning the framework of requirements and (2) structures the format in which data can be accepted. This publication does provide a definition of "operable equipment," that is, an item of equipment operationally ready to the degree that it can perform its assigned mission. Lack of noncritical repair parts (such as fenders and windshields), routine (normal) modifications, and deadlining for scheduled maintenance will not ordinarily render an item not operationally ready. However, the publication does not contain specific criteria or guidance for determining the mission degrading effects on such combat-essential equipment as tanks, howitzers, and amphibious tractors. For example, consider an M60 tank that is fully operational except that all of its radios do not function. It could "move and shoot," but it lacks one basic capability--communications. Should it be reported fully combat ready, not combat ready, or somewhere in between? Under the Corps' system, it could be reported in any of these categories depending on the judgment of the particular commander submitting the report.

CHAPTER 5

SUPPLY SUPPORT

A major reason for the less than desired level of equipment condition in the II MAF was the inadequate support provided by the supply systems supporting the ground and air units. Significant shortages, including many zero-balance line items, existed, which caused a high number of requisitions to be passed to the next echelon of supply, the national inventory managers. Passing requisitions increases the time required to receive the ordered parts and components, thereby increasing the time that equipment and weapons are deadlined or remain in a degraded condition. Corps officials attributed this problem basically to a shortage of funds. Funding was a problem because stockage objectives could not be maintained within the resources made available; however, better management of these resources could increase effectiveness and responsiveness of the supply systems.

SUPPLY SOURCES

The forces of the II MAF are supported from three major sources of supply:

--General account. This account consisted, at the time of our review, of about 13,000 line items valued at about $3.5 million. This is supposed to represent a [deleted] day supply and is designed to support the day-to-day peacetime requirements of the II MAF ground forces. Requirements which cannot be satisfied from this source are passed to the Marines' or to DOD's national inventory managers. For the most part, items carried in this account are demand-supported items; that is, they are routinely required by units to support equipment, etc.

--Aviation supply system. This system was made up of a supply organization within each Marine aircraft group under the 2d Marine Aircraft Wing and a base station supply point. The system as a whole includes about 105,000 line items valued at about $116 million. Requisitions not filled from this source are passed to the Navy's Aviation Supply Office. This account is also supposed to represent a [deleted] day stock level and would be used for initial support during wartime. Stockage is generally based on demand experience.

--Mount-out stocks. These stocks were maintained by II MAF in the form of nine identifiable blocks and contain about a [deleted] day supply of critical supplies, equipment, and weapons for II MAF ground forces. This supply source provides the initial combat support for ground forces until lines of communications can be established.

The general and airwing supply accounts are basically demand-supported systems. This means that stockage levels are determined, for the most part, by the number of requests received for specific items and the length of time required to obtain items from the next higher echelon of supply. These factors determine what items will be stocked and in what quantities. The quantity stocked is called a requisitioning objective (RO) and consists of (1) an operating level, (2) a quantity to cover order/ship time, and (3) a safety level. Such a system can function effectively and responsively only if the computed stockage levels are maintained through routine replenishment. The II MAF's supply activities have not operated in this manner, as discussed below.

STATUS OF ACCOUNTS

General account

Generally, between 23 to 34 percent of the line items stocked in this account had no quantities on hand and available for issue at any given time. Further, up to one-third of those items with quantities on hand had less than that authorized for stockage. As a result, units were unable to obtain what was needed, when needed, to keep their weapons and equipment up to full system capability.

The table on the following page shows the general account's stock status and performance for August 1976 through April 1977.

Month	Percentage of requisitions objective items with: One or more on hand	Zero balance	Gross effectiveness rate (percent) (note a)	Net effectiveness rate (percent) (note b)
August	71	29	51	62
September	66	34	60	70
October	70	30	58	66
November	72	28	55	68
December	77	23	60	69
January	71	29	58	64
February	63	37	55	61
March	74	26	53	64
April	73	27	53	62
Average	70.7	29.1	56.0	65.0
Goal			65	75
Percentage short of goal			9	10

a/The percentage of all requisitions submitted against the account that are partially filled from that source.

b/The percentage of requisitions received for items with an RO that are either partially or completely filled.

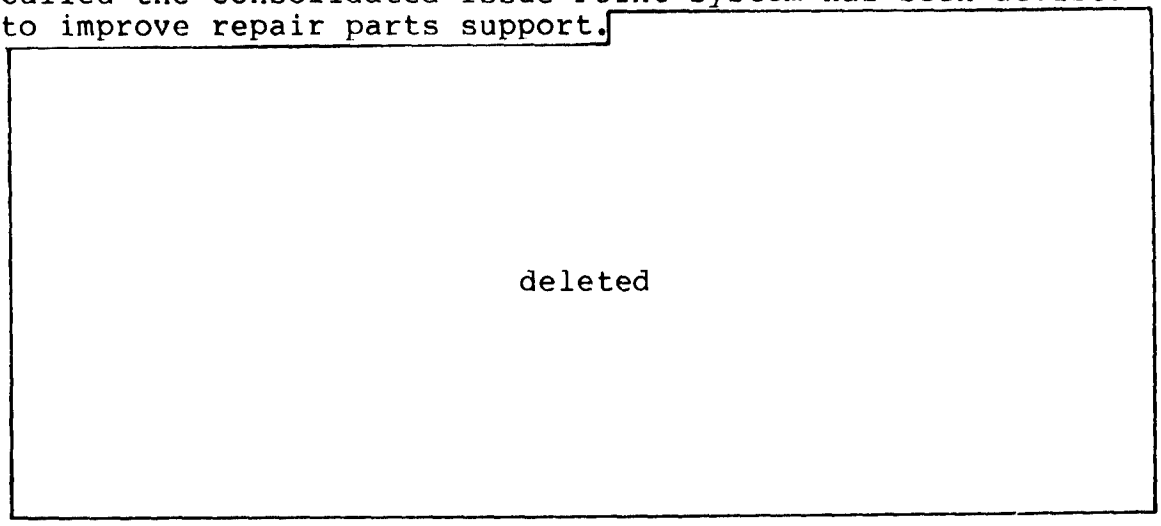
As a result of the general account stock shortages shown above, many requisitions--about 44 of each 100 received from the support units--had to be passed to the Marine inventory manager in Albany, Georgia, or to DOD managers to be filled. Passing a requisition greatly increases the amount of time required to satisfy unit demand. The following table reflects the 10-month average--from August 1976 through May 1977--of time required to receive shipments of items requisitioned.

	Number of days					
All receipts	1-15	16-30	31-60	61-90	90 or more	Total
Average number	229	2,023	3,708	888	1,140	7,988
Percentage	3	25	47	11	14	100

As shown, relatively few requisitions are satisfied in less than 15 days, and most fall in the range of 16 to 60 days, with the bulk of these in the 31- to 60 day range.

In commenting on this report, the Corps provided statistics on the performance and stock status of the general account for January to May 1978 which indicated that effectiveness was improving. For example, during this period, the percentage of RO items with one or more assets on hand averaged 85 percent; thus, zero-balance line items averaged 15 percent. The gross effectiveness rate was up only 2 points--from 56 to 58 percent, but the net effectiveness rate averaged 71 percent, as opposed to 65 percent at the time of our review. The Corps commented that there was still a problem regarding the depth of stock available.

The Corps added that a new ground-force supply system called the Consolidated Issue Point system has been devised to improve repair parts support.



These actions should improve supply support to units if adequate stockage (both breadth and depth) is maintained at the Consolidated Issue Points and the general account, thereby reducing the number of requisitions that have to be passed to an inventory manager for filling.

Funding

A major reason for the stock shortages in this account is insufficient funding to support both (1) day-to-day operations and (2) the ROs. Budget documents indicated the following deficiencies.

	Fiscal year 1977	Fiscal year 1978
Funds required	$12,452,000	$12,060,000
Funds available	10,250,000	10,120,000
Shortfall	$ 2,202,000	$ 1,940,000

As a result, RO quantities are not fully stocked, which results in more requisitions being passed. This further aggravates the supply system's ability to be responsive. For example, as the stock levels (ROs) are depleted, the supply system reserves more funds to cover the increasing number of requisitions that will have to be passed. This, in turn, further reduces the funds available to routinely replenish stocks.

In commenting on this report, the Corps stated that the above figures were substantially correct but that the anticipated deficiencies did not materialize in budget execution. The requirements and actual funding was as follows:

	Fiscal year 1977	Fiscal year 1978
Required	$12,452,000	$12,060,000
Funded	13,587,000	11,744,000
Difference	$-1,135,000	$ 316,000

Another $500,000 was expected to be provided by the end of fiscal year 1978.

Aviation supply system

The same basic problems that affected the general account for ground forces also affected the 2d Marine Aircraft Wing supply system. At the time of our review, the system stocked 105,000 line items with an authorized value of $116 million, and there was a net shortage of $45 million, which represented 39 percent of the total authorized.

The gross and net supply effectiveness rates were averaging about 56 and 70 percent, respectively, against goals of 75 and 85 percent. As with the general account, many requisitions were passed to inventory managers, with the resultant delays in getting parts.

deleted

For example, we found 33 stock items, both high- and low-value items, which, at the time, were deadlining deleted aircraft. We found that:

--For only 4 of the items was any stock actually on hand.

--For 26 of the items requisitioning objectives had been established, but for only 3 was any stock available for issue.

--For 14 of these items no stock was available in the Navy system ready for issue. For all of these items, however, stock was on backorder.

--The average age of the requisitions submitted to obtain these parts was about 64 days.

Further analysis of the 26 line items with established requisitioning objectives disclosed that 15 had an average value of about $40 and accounted for slightly more than half-- deleted --of the deadlined aircraft. The following table compares low-value (less than $1,000) and high-value (more than $1,000) items:

Low-Value Items (less than $1,000)

No. of line items	Requisitioning objective: Total no.	Requisitioning objective: Value	Requisitioning objective: Average value	Quantity on hand: No.	Quantity on hand: Value	Quantity on order: No.	Quantity on order: Value	Lines available in Navy system	Aircraft deadlined
15	494	$19,029	$38	a/88	$8,290	149	$10,790	7	
High-Value Items (Over $1,000)									
11	57	320,720	5,802	1	3,680	27	156,400	5	deleted
26	551	$339,749	$616	89	$11,970	176	$167,190	12	

a/Due out to units.

These statistics suggest that increased attention to stocking the RO quantity of critical, yet low cost, items could increase aircraft readiness by decreasing the deadline rate.

In commenting on this report, the Corps explained that it had recently approved deleted However, the revised criteria apply only to items stocked in the Consolidated Issue Points--not those in the aviation supply system.

Mount-out stocks

The II MAF maintained nine blocks of mount-out stocks. These are the supplies that Marines take into battle; they consist of major items of weapons and equipment, combat rations, ammunition, repair parts, etc. These stocks are intended to make the units self-sustaining for at least deleted days.

At the time of our review, the II MAF was authorized mount-out stocks consisting of 24,000 line items valued at $4.9 million. Shortages in these stocks totaled almost $2 million--an amount equal to about 40 percent of that authorized. The following table shows the status of the individual mount-out blocks as of June 1977.

Mount-out account no.	Line items: Authorized	Line items: With quantity on hand	Line items: Zero balance	Value authorized	Value on hand	Shortage excess (-)
MML140	2,032	1,952	80	$ 138,528	$ 115,527	$ 23,000
MML141	1,962	1,921	41	134,452	112,102	12,350
MML142	1,941	1,625	316	149,663	116,068	33,595
MML143	1,892	1,773	119	118,964	156,657	-37,693
MML144	1,952	1,688	264	130,764	126,190	4,574
MML145	1,915	1,723	192	153,084	105,098	47,986
MML147	3,996	3,884	112	281,458	215,240	66,218
MML149	104	91	13	3,533,091	1,764,654	1,768,437
MML150	8,214	7,426	788	254,517	199,284	55,233
Total	24,008	22,083	1,925	$4,894,521	$2,910,820	$1,973,700

As shown above, the largest shortage occurs in mount-out block MML149, with the highest dollar requirement and the highest dollar value for line items (that is, $34,000 per line item versus about $30 to $700 for the other eight blocks). This block consists of such items as radio sets, generators, forklifts, trucks, machine guns, and other equipment.

During our review, the Corps announced a program to increase mount-out stocks from a [deleted] supply of parts and equipment. To meet this goal, excess stocks and safety levels of the general account would be used to build to this level.

In commenting on this report, the Corps stated that the status of the mount-out blocks had improved over the June 1977 figures reported above. This resulted from a complete rework/recomputation of all mount-out requirements based on end item densities within Fleet Marine Forces, Atlantic. The value authorized for stockage is now $5,769,441 with $4,969,382 on hand, for a shortage of $800,059. About 50 percent of this deficiency is in the major end-item block, MML149. Mount-out stocks were increased by transferring on-hand stocks from the general account or, if not available there, by requisitioning from the appropriate integrated manager.

CONCLUSIONS

The supply activities supporting the units of the II MAF have not been responsive in meeting the users' requirements because of inadequate stockage of parts, the large number of requisitions being passed to national inventory managers, and long delays caused by the complexity of the local requisitioning and distribution chain. The Consolidated Issue Point program and the recently implemented [deleted] [deleted] should help improve support; however, the effect of these changes will be limited by (1) the extent to which the authorized stockage levels are maintained at the quantity dictated by demand and order/ship time, and (2) the other factors needed for the effective functioning of demand-supported supply systems.

RECOMMENDATIONS

We recommend that the Commandant of the Marine Corps reduce the authorized days of supply of the II MAF supply accounts to a level that will permit the requisitioning objectives to be filled. Such action would allow the system to keep assets on hand for most line items, thereby reducing the delay associated with passing requisitions to national inventory managers. Such a reduction need last only as long as funding constraints prevent stocking the deleted day level.

AGENCY COMMENTS

The Marine Corps and Navy disagreed with our recommendation to reduce the stockage level in its supply accounts. They believed that

deleted

GAO was not suggesting that order/ship time be adjusted, rather, that the possibility of adjusting downward the quantities in the R/O allocated to operating and safety levels, be examined. Each day that can be reduced from these levels represents funding relief in that the system does not attempt to have on-hand or on order the higher operating levels.

CHAPTER 6

PERSONNEL

In the early 1970s, the Corps experienced serious personnel problems. These included severe disciplinary problems--the highest desertion, unauthorized leave, and crime rates of all the services. Most of these problems were attributed to the recruiting of unsuitable, low-quality personnel.

During the past several years, the following actions have been taken to alleviate these personnel problems.

--Administratively discharging personnel deemed to be unsuitable from a disciplinary viewpoint.

--Improving recruiting and basic training programs.

--Raising the quality standards for recruits.

These actions seem to have had beneficial results because the disciplinary problems are decreasing to a manageable level.

Overall, the II MAF units had personnel assigned and on hand in excess of the total number authorized. As of September 30, 1977, 40,349 positions were authorized and 43,076 were actually assigned, creating an overall excess of 2,727. Some occupational fields, such as infantry, were significantly overstrengthed.

This statistic alone, however, does not accurately portray the personnel status of the II MAF, because some significant shortages existed in certain essential military occupational specialties (MOSs), particularly those requiring formal training in the more complex skill areas. Most of these personnel and skill shortages were in the aircraft wing.

DISTRIBUTION OF PERSONNEL RESOURCES

The Corps divides its commands or units into the following two general categories for establishing priorities for personnel distribution.

--100-percent commands. These are commands that should be staffed at 100 percent of authorized strength in gross numbers and in critically short MOSs. The II MAF units are in this category.

--Proportionate share commands. These are commands that receive a proportionate or "fair share" of personnel assets after staffing the 100-percent commands.

However, when skill shortages exist to the extent that all requirements of the 100-percent commands cannot be satisfied, the principle of "fair share" is applied. Thus, all Marine Corps commands operate at less than their authorized strengths in critically short MOSs. The functional areas most affected in II MAF units are discussed below.

AIRCRAFT MAINTENANCE

As discussed in chapter 4, an average of about deleted percent of the 2d Marine Aircraft Wing's aircraft were deadlined for maintenance purposes for fiscal year 1977. About half of this downtime was due to needed maintenance.

In reviewing the maintenance backlogs for December 1976 through March 1977, we found that about 40 to 60 percent of the total hours aircraft were down was due to maintenance shop backlogs. According to Corps officials, much of the shop backlog was caused by a shortage of personnel in critical maintenance skills. Examples are shown in the following table.

Aircraft maintenance	Number authorized	Number on hand	Percent available
Aircraft mechanic	310	deleted	
Structures mechanic	202		
Hydraulic, pneumatic mechanic	186		
Ground support equipment mechanic	91		
Helicopter maintenance chief	29		
Helicopter powerplant mechanic LT-400	110		
	928		
Aviation ordnance			
Aviation ordnance chief	19		
Aviation missile technician	86		
	105		
Avionics			
Radar, electrical, navigation systems personnel	284		
Total	1,317		

Shortages of skilled personnel were compounded by the fact that many of the people assigned were not available in their jobs. During May 1977, for example, Headquarters and Maintenance Squadrons 14 and 32 experienced absences of [deleted] percent, respectively, of their maintenance personnel. Absences were attributable to incarceration, unauthorized absences, leave, assignment to a school, hospitalization, and other duties such as security guard, lifeguard, and mess duties. Some of these absences are normal (authorized leave, hospitalization, and schools) and some are uncontrollable (unauthorized absences and incarceration), but others (such as lifeguard, security guard, and mess duties) detract from the Wing's ability to use skilled persons in their skill areas. Authorized leave accounted for only 6 and 8 percent of the absences, respectively.

Although important shortages of critical skills existed (primarily within the air wing), some occupational fields in II MAF units had significant overages of personnel. For example, in May 1977 the 2d Division was authorized 7,848 spaces in the infantry occupational field and had on hand 8,820--an excess of 972.

OTHER PROBLEM AREAS

We also looked at the personnel status in other functional areas within II MAF.

HAWK antiaircraft missile battalions

The Corps' HAWK missile battalions provide ground-to-air protection, primarily for its tactical airfields. Normally, each of the Corps' three active airwings and its reserve airwing has a HAWK battalion consisting of four batteries. These batteries form a protective umbrella over an airstrip and may be positioned to afford protection for two not-too-distant airstrips. The 2d, 3d, and Reserve Marine Aircraft Wings, however, have only three batteries each. The 1st Marine Aircraft Wing has no HAWK capability. Although the requirement for a fourth battery exists in the Corps' tables of organization and equipment, Corps officials state that the fourth battery is inactive because of personnel and funding limitations. The shelving of a complete battalion and three batteries, however, was not enough to resolve the personnel shortages in the other batteries.

As shown in the following table, the three HAWK batteries of II MAF have deleted shortages in critical skills.

Skill description	As of June 1977 Number of personnel Required	On hand	Percent shortage
deleted			

Marine air control groups

Marine air control groups coordinate the air command and control systems of Marine aircraft wings. As discussed in chapter 4, the deleted

Skill description	Training period	Number of personnel Required	On hand	Percent shortage
Tactical air controller	10 wks.	26	deleted	
Air traffic controller--tower	3 mos.	40		
Air traffic officer	8 wks.	24		
Air traffic controller--radar	3 mos.	68		
Air traffic controller	8 wks.	18		
		176		

The personnel requirements used in the above tables showing shortages in the HAWK battalion and the air control groups are the table of organization figures, which represent wartime requirements. In commenting on this report,

the Corps stated that the peacetime or manning level requirements should be used as the authorized figure against which actual assignments should be compared to determine personnel shortages. According to the Corps, these shortages are small and could be provided to II MAF from the Corps at large, including the Marine Corps Reserve. (See our comments on p. 56.)

CONCLUSIONS

Like any organization, the Corps, to be effective, must have enough properly trained and motivated personnel. In an era in which the technology of warfare has become increasingly complex, the need for trainable and trained personnel becomes extremely important.

The Corps has had serious personnel problems; however, the severity of these problems appears to be decreasing and to now be at a manageable level.

It seems appropriate then, at this time, for the Corps to attempt to bring its personnel structure into balance. One way to alleviate the shortages in critical skills is to institute an MOS cross-training program. Such a program would involve identifying those personnel in overage MOS and occupational fields who have the potential for being trained into an MOS with a critical shortage.

The Army recently undertook such a program to alleviate noncommissioned officer and MOS shortages, and the program was reasonably successful. This and other types of programs for improving the management of military forces are addressed in our prior report, "Urgent Need for Continued Improvements in Enlisted Career Force Management" (FPCD-77-42, Sept. 29, 1977).

RECOMMENDATIONS

We, therefore, recommend that the Commandant of the Marine Corps:

--Establish a program to cross-train qualified personnel in overage MOS and occupational fields into those that have critical shortages.

--Revise personnel distribution policy to give the highest priority for critical skills to units that

are assigned the highest priority missions. In other words, eliminate the "fair-share" concept as it has applied in the past to shortage MOSs.

AGENCY COMMENTS

The Marine Corps agreed that the problems discussed in this chapter exist within II MAF and, for that matter, throughout the Corps.

The Corps stated that the possibility of cross-training personnel into shortage MOSs had been analyzed. It found that the elasticity of this type of movement was somewhat limited since most overage MOSs were in "soft skills" and the personnel were not qualified for "hard skill" training. According to the Corps, about 500 Marines in overage "soft" MOSs could be cross-trained into critical skill areas. Some lateral movement of this nature is occurring, but the Corps felt that fiscal and other constraints severely curtailed this option.

Although it appears that only limited relief would be gained from a cross-training program, we believe that such a program should still be considered. For example, training 500 people to fill the shortages identified on pages 51 and 53 would increase the fill rate for these critical MOSs from about [deleted] percent to [deleted] percent.

The Corps disagreed with our recommendation to assign Marine personnel according to its highest priority missions. Specifically, the Corps stated that

--there is no way to predict which mission will be called first;

--uniform staffing spreads overages as well as shortages, thus providing equal combat power per unit; and

--priority staffing would, in essence, degrade the Corps' worldwide capability.

The Corps added that the NATO mission has received a great deal of attention within DOD, but that the Corps must continue to be capable of reacting to contingencies worldwide and at all levels of conflict.

We believe that applying "fair-share" staffing, rather than providing equal combat power to all units, equally degrades the capability of all units and, therefore, reduces the Corps' capability to respond to all missions. Further, "fair-share" staffing reduces flexibility rather than increasing it because units would have to be augmented for any major deployment, be it in the Atlantic or Pacific theaters.

This being the case, logic dictates that limited resources be allocated on a priority basis according to current intelligence assessments and evaluations of the world situation. As acknowledged by the Corps on page 54, if the more demanding missions were not called first, resources could be redistributed to meet requirements.

CHAPTER 7

FUNDING TRENDS AND RESOURCE ALLOCATION

According to the Commandant of the Marine Corps, the Corps' primary mission is to provide forces to the fleets to give Navy forces the capability of projecting combat power on short notice anywhere in the world. This mission is the basis for all planning, programing, and budgeting for the structure of the Corps and, accordingly, determines how Marine Corps forces are deployed and stationed as well as how budgetary resources are distributed.

As a result, the Corps generally distributes its resources on a "fair-share" basis, rather than allocating them to specific missions in priority sequence. For example, the II MAF is the first Marine Corps force scheduled for deployment to Europe in wartime, but it is not accorded a priority claim to the resources--ships, personnel, or funding--required to respond to this commitment.

In contrast, within DOD as a whole, the European contingency dominates the defense planning process and provides the impetus for the development of general force requirements for other services. Accordingly, more and more DOD resources are being committed to strengthen U.S. capabilities in that theater--even at the expense of U.S.-based forces and other contingency missions.

The remainder of this chapter discusses the Marine Corps' budget and the distribution of monetary and other resources.

SOURCE OF MARINE CORPS FUNDS

For the past several years, the Marine Corps budget has comprised about 3 percent of the total DOD budget. The Corps' budget, however, does not provide all the monetary resources required to support this force; significant amounts are provided by the Navy and DOD.

The table on the next page breaks out the fiscal year 1978 total Corps budget by general appropriation category and by source:

Appropriation	Total	Source: Corps	Percent	Navy	Percent	DOD	Percent
	(millions)			(millions)		(millions)	
Military personnel (reserves)	$2,169.2 (90.9)	$2,104.7 (81.5)	97	$ 64.5 (9.4)	3	$ 0	0
Operation and maintenance (reserves)	868.8 (30.7)	667.7 (16.6)	77	201.1 (14.1)	23	0	0
Procurement	1,289.3	452.1	35	837.2	65	0	0
Research, development, testing, and engineering	160.1	0	0	160.1	100	0	0
Military construction (active and reserve)	46.2	0	0	46.2	100	0	0
Retired pay (defense)	463.5	0	0	0	0	463.5	100
Claims (defense)	1.9	0	0	0	0	1.9	100
Family housing (defense)	69.0	0	0	0	0	69.0	100
Total	$5,068.1	$3,224.5	64	$1,309.1	26	$534.4	10

As shown, about 36 percent of the total resources made available to the Corps for fiscal year 1978 came from Navy and DOD appropriations.

BUDGET GROWTH

Since 1970, the Marine Corps budget has increased only about 25 percent in actual dollars, which represents a decrease in purchasing power of about 30 percent in 1979 constant dollars. The Corps' budgets for fiscal years 1970 and 1978 are compared on the next page:

Corps' appropriations	FY 1970	FY 1978	Increase decrease(-)	Percentage change
	(millions)			
Military personnel	$1,627.1	$2,023.2	$ 396.1	23
Military personnel reserve	48.8	81.5	32.7	67
Operations and maintenance	406.6	651.1	244.5	60
Operations and maintenance reserve	0	16.6	16.6	100
Procurement	490.9	450.2	-40.7	-8
Corps stock fund	0	1.9	1.9	100
Total	$2,573.4	$3,224.5	$ 651.1	25
Fiscal year 1979 constant dollars	$4,929.9	$3,416.5	$-1,513.4	-30.7

A comparison of funding for fiscal year 1970, which reflected substantial involvement in the Vietnam war, with funding for fiscal year 1978, a peacetime year, is probably not a good one. However, even using 1971 for comparison, there is a trend of decreasing purchasing power, particularly since the 1978 budget includes costs not officially tracked in 1971. For example:

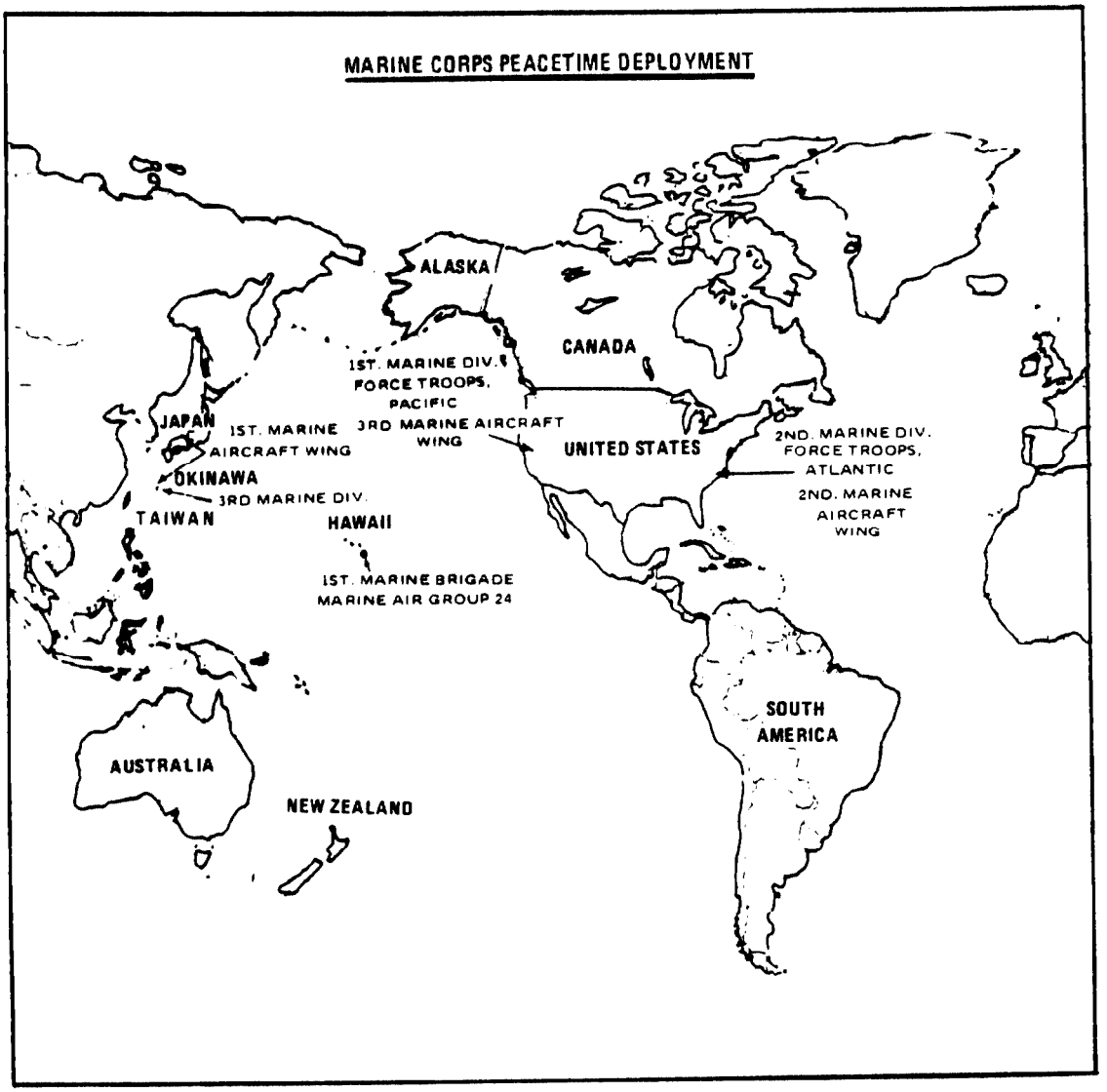
--Before fiscal year 1976, the share of the Navy's operations and maintenance costs associated with Marine aviation was not attributed to Marine support.

--Navy Reserve personnel and operations and maintenance support for the Marine reserves was not computed.

--The Marine Corps' share of Navy-managed research, development, testing, and engineering programs, such as the AV-8B aircraft, was not included in official Navy support determinations.

RESOURCE ALLOCATION

With a mission to provide combat forces anywhere they are needed in the world, the Corps stations its major active units on the East and West Coasts of the United States and in the Western Pacific. The following map illustrates the current deployment of these forces.



This distribution basically provides:

--One division-wing team on the East Coast for use in contingencies in the Atlantic hemisphere.

--Another division-wing team in the Western Pacific (Japan and Okinawa) to support U.S. policy in the Pacific hemisphere and Indian Ocean.

--A third division-wing team on the West Coast to function as a "swing force" to support contingencies in either the Pacific or the Atlantic.

Deploying its forces as illustrated results in about a 40-60 split of resources (personnel, aircraft, etc.) between the Atlantic and Pacific areas, respectively. The following table reflects authorized personnel man-years (officers and enlisted) in fleet marine force units by geographic location for 3 fiscal years.

	FY 1976		FY 1977		FY 1978	
Personnel in:	No.	Percent	No.	Percent	No.	Percent
Atlantic forces	42,109	38	40,743	38	40,647	38
Pacific forces	67,144	62	66,704	62	68,227	62
Total	109,253	100	107,447	100	108,874	100

We also obtained a breakout of those operating costs that could be allocated between Atlantic and Pacific locations, as shown below.

Location	Total	FY 1976	FY 1977	FY 1978 (note a)
	----------(000 omitted)----------			
Atlantic:				
Forces	$ 84,232	$ 26,095	$ 28,982	$ 29,155
Base operation	222,764	73,354	74,442	74,968
	$306,996	$ 99,449	$103,424	$104,123
Percentage of total	33	35	32	34
Pacific:				
Forces	$148,537	$ 40,889	$ 55,726	$ 51,922
Base operation	459,939	140,353	167,453	152,133
	$608,476	$181,242	$223,179	$204,055
Percentage of total	67	65	68	66
Total	$915,472	$280,691	$326,603	$308,178

a/Allocations through January 31, 1978.

As shown on the previous page, the Pacific area receives substantially more funds than the Atlantic to support base operations. Further, support for the Pacific bases is expected to increase markedly as the Corps assumes control of additional installations and facilities as the Army reduces its presence in the area--specifically in Okinawa.

Distribution between ground and aviation forces

The Corps believes that a close-knit air/ground team, where marine supports marine, produces a more effective, unitized fighting force. Moreover, the Corps feels that its combat environment, a contested beachhead, may not lend itself to support from Air Force, Navy, and/or allied aircraft because of the potential distances from home bases and the competition for their use. Marine aviation now consumes half or more of the Corps' available funds and absorbs a large segment of its technically trainable personnel. Historically, Marine aviation has taken most of the procurement funds available, and recently, the percentage given to aviation appears to be increasing. This trend seems to be somewhat questionable since the lift capability--the number of Marines that can be transported at one time--has decreased.

Aircraft and missions

With the level of funding accorded aviation, the Corps' inventory has grown. It now consists of a large number of rotary and fixed-wing aircraft capable of performing a wide range of missions. The fixed-wing aircraft include the following.

Aircraft type	Mission
A-6 Intruder	All weather attack
A-4M Skyhawk	Attack
AV-8A Harrier	Vertical and short takeoff and landing attack
F-4 Phantom	Air defense interceptor/ air superiority/attack
RF-4B Phantom	Reconnaissance
KC-130 Hercules	Aerial refueling/assault transport and logistical lift

According to doctrine, Marine aircraft wings exist essentially to provide air power to Marine ground forces after the force has secured a footing on the assault area. Historically, however, this has not been the practice. In Korea and Vietnam, Marine aircraft were combined with the resources of the Navy and Air Force in joint operations. Moreover, in these conflicts, Marine aircraft flew interdiction missions, that is, missions into enemy territory against nonpersonnel targets. Conversely, Navy and Air Force aircraft flew close air support missions in support of Army, allied, and Marine ground forces. This joint operation worked effectively; it was not important which service provided the aircraft.

Procurement resources

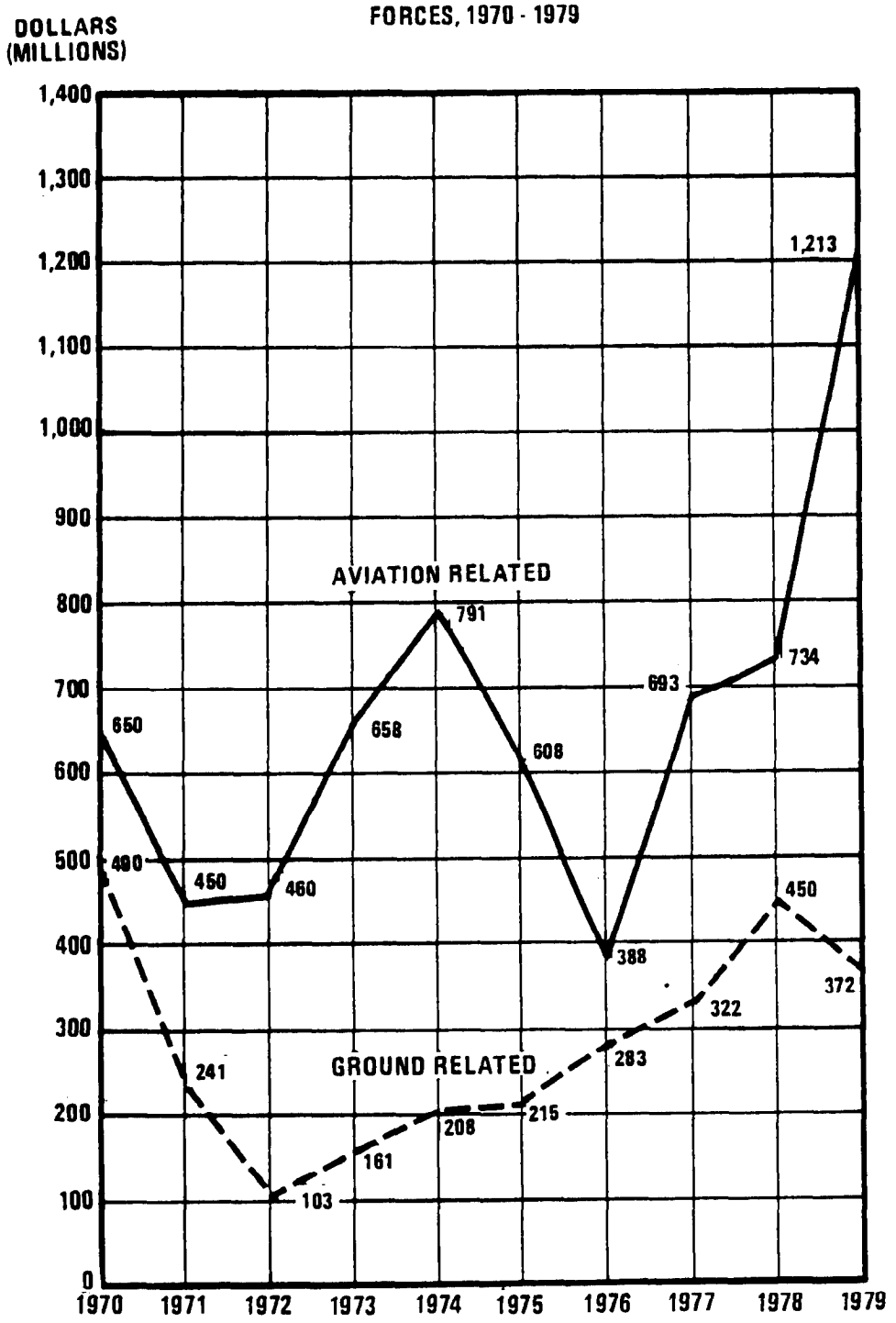
During the 10-year period 1970 through 1979 (budget submission), almost $9 billion in procurement funds has been allocated for support of aviation and ground Marine forces. Almost 70 percent, about $6 billion, went to support aviation forces.

Put another way, aviation-related funding, after the Corps' disengagement from Vietnam, was maintained from 1972 through 1978 on an average at the fiscal year 1971 level in terms of constant dollars. The fiscal year 1979 budget request for aviation was about $500 million higher than the actual 1978 budget of $734 million--and almost back to the 1970 Vietnam budget level in terms of purchasing power.

For ground force procurement an average of $248.8 million was budgeted for the years 1972-78--an amount approximating the fiscal year 1971 budget of $241.6 million--which resulted in a significant decrease in purchasing power. The 1979 request of $376.9 million represents about 87 percent of the purchasing power of the 1971 budget and only 40 percent of the 1970 budget.

The history of the distribution of procurement funds between air and ground forces is illustrated by the graph on the following page.

ANNUAL PROCUREMENT FUNDS
ALLOCATED TO AIR AND GROUND
FORCES, 1970 - 1979



During the same period, the amphibious lift capability of the Navy dropped from 1-2/3 MAFs to 1 MAF. The current objective is to achieve a 1-1/3-MAF level (which will be reached by 1980) and stabilize at that capability. (See ch. 3.)

CONCLUSIONS

The Corps' primary mission requires that it be able to respond--quickly--in force, at any time, anywhere. As discussed in previous chapters, the resources needed to fulfill this mission are not now available and may never be. It is essential, therefore, that the limited resources which are made available be applied to meet requirements with the highest need based on a realistically established set of priorities. To do this, a more realistic, better defined mission needs to be developed for the Corps. Further, careful consideration should be given to the existing distribution of resources between ground and air forces. In other words, should Marine aviation receive the level of support it does when amphibious shipping for the foreseeable future will only accommodate the deployment--for an amphibious assault--of slightly more than one of the four MAF's in the Corps and does the preeminence afforded to Marine aviation over ground forces result in a degradation of ground forces' capabilities?

RECOMMENDATIONS

We recommend that the Secretary of Defense, the Joint Chiefs of Staff, and the Commandant of the Marine Corps more clearly define the Corps' specific contingency mission commitments and develop a priority system for allocating resources to the most demanding commitments. Further, an evaluation of the existing distribution of resources between aviation and ground forces should be made to determine whether the existing level of support to aviation should be continued.

AGENCY COMMENTS

See comments on pages 14 and 25.

APPENDIX I

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

COMPTROLLER

28 AUG 1978

Mr. Richard W. Gutmann
Director, Logistics and Communication Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Gutmann:

This is in reply to Mr. Shafer's letter to the Secretary of Defense regarding your report dated June 8, 1978, on Marine Amphibious Forces: A Case Study (OSD Case #4926) LCD-78-417.

Enclosed for your incorporation in the final report are general (Enclosure 1) and specific (Enclosure 2) comments pertaining to the draft report.

It is apparent that the review already has had a salutory effect on readiness reporting in the Marine Corps and the Navy as well. This is one of the areas that is undergoing active study within this Department, as a first step in getting a better grasp on the relationship between resource allocation and consequent effects upon readiness of the force as a whole.

Regarding the recommendations made in the draft report, we do not believe that OSD needs to make the overall study of the Marine Corps you suggest as much as we need to concentrate on specific measures which will contribute to deploying selected Marine Corps forces more quickly and more effectively, deleted We have studies underway deleted to accomplish more rapid deployment. Thorough examination of the resources to be applied to the Marine Corps and its missions, size, and force structure will be conducted in OSD as well as OMB in the PPBS process and in subsequent Congressional reviews.

Therefore, we do not believe that it would be prudent to withhold resources needed to resolve the readiness problems discussed in the draft report.

Sincerely,

Fred P. Wacker

Fred P. Wacker
Assistant Secretary of Defense

Enclosures

Classified by DASD(GPP),OASD(PA&E)
SUBJECT TO GENERAL DECLASSIFICATION SCHEDULE OF EXECUTIVE ORDER 11652. AUTOMATICALLY DOWNGRADED AT TWO YEAR INTERVALS. DECLASSIFIED ON 12/31/86

APPENDIX I

COMMENTS ON THE FIVE SPECIFIC ISSUES.

(U) GAO Issue: Are the Corps' Resources Properly Allocated to Support its Missions?

Comment:

1. (U) GAO's basic assumption in this issue is that the Marine Corps is wrong in having distributed resources based on a worldwide "fairshare" basis rather than on "specific missions" associated with a European contingency. This assumption is further extended to state that the resultant "disparity" is due to "the Corps' perception of its mission -- that of being ready to deploy rapidly to any part of the world where U.S. interests are threatened." Inherent in GAO's assumption is their acceptance of a single scenario national strategy. (See GAO note 1, p. 74.)

2. (U) Recognizing the insular and maritime nature of the United States and the need to guarantee free use of the seas and access to resources, the requirement for naval power projection is firmly established as a key element of American National Military Strategy. Marine Corps responsibilities in support of this Strategy have a fundamental bearing on the allocation of resources and their geographical disposition. Because the Marine Corps provides a uniquely tailored air-ground force with a primary naval mission and a maritime perspective, its contingency responsibilities are global. To meet these global responsibilities requires, at a minimum, the posturing of a division-wing team in each of the two separate world ocean areas, with forward deployed elements that can be sustained and rapidly reinforced. It follows that a third division-wing team should be positioned in a strategically central location from which it can swing readily to reinforce either of the other two, and that a Reserve is needed to meet wartime mobilization requirements. Based on this fundamental logic, the Marine Corps' existing basic force structure is considered by the Department of the Navy to be appropriately balanced and attuned to existing military requirements. (See GAO note 2, p. 74.)

3. (U) The issue also challenges funds allocated to Marine TACAIR based on the statement that "...in Korea and Vietnam, Marine aircraft were lumped together with the resources of the Navy and Air Force in joint air operations...and not in the sole support of Marine ground forces." The Department of the Navy considers that any change in the composition of Marine TACAIR would have a serious effect on the ability of the Marine Corps to fulfill its amphibious power projection

role, for its combat value is based upon the organization of its forces into a highly integrated air-ground team. This air-ground team is designed for the amphibious assault in which the requirement exists to build to maximum combat power on a hostile shore from a zero base without the availability of prepositioned land based heavy fire support. Organic Marine air support complements Navy tactical air support and compensates for the absence of land based heavy fire support during the amphibious assault. Overall, it provides five separate supporting aviation functions throughout the operation which are considered vital to success: Anti-air Warfare, Offensive Air Support, Aerial Reconnaissance, Assault Support, and Air Control. The inherent value of this capability for amphibious force projection by the Navy-Marine Corps Team has become increasingly important today with diminishing basing access and restricted landing and overflight rights. Diminishing basing access, or no access at all, precludes dependence on air support from the Air Force in some scenarios. (See GAO note 3, p. 74.)

4. (U) Another key point is that air support from outside the Amphibious Objective Area (AOA) equal to that provided by USMC aircraft operating from expeditionary bases within the AOA, would require a dramatic increase in numbers of aircraft. There is already an imbalance between NATO and PACT in aircraft so it would not be prudent to reduce our aviation resources. If there is an assumption of the Marine TACAIR mission by any other Service, it would have to be additive to their own special requirements. Therefore, the elimination of Marine TACAIR as a budget reduction measure would, in fact, require compensatory budget increases to another Service in an attempt to provide the equivalent combat capability. (See GAO note 3, p. 74.)

(U) GAO Issue: How Much of an Amphibious Assault Force is needed? For What Mission?

Comment:

1. (U) In some cases, the amphibious assault forcible entry capability provides the National Command Authorities the only means of responding to potential contingencies. Prepositioned forces cannot be placed everywhere that U.S. interests may be threatened. Political and economic limitations related to forward deployed land forces and base and overflight rights are important considerations. In some situations, airfields may not be secure or available. In this context, the capability to project combat power on short notice is relative. As pointed out in the GAO report, it takes time to deploy a large force because of the necessity to assemble shipping and to load and steam to a point of conflict. But this situation applies to any large force deployed from United States ports. In the meantime, though, the Marine Corps has elements already embarked and deployed in Navy amphibious ready groups. The balance of Marine forces not deployed are maintained in a constant state of training and equipment readiness for deployment. In addition to maintaining the amphibious assault capabilities inherent in Fleet Marine Forces, they maintain the capability to deploy by varied mobility means in order to provide a flexible, rapid, and credible response at all levels of crisis and conflict, in support of the national security objective.

2. (U) How much is enough? Today we are at a 66-ship level, with the lift capability of approximately 1 1/3 MAFs. This will provide the capability to conduct a MAF sized assault while maintaining the capability to respond to a concurrent minor contingency with forces of up to a MAB in size.

3. (U) That we possess a permanently structured amphibious force is fundamental to our national security. In today's environment we cannot count on friendly airfields, overflight rights, forward basing privileges, access to vital raw materials, or secure lines of communication. If the amphibious capability were ever relegated to a secondary role for another Service, it would become a full-time job for the force assigned this mission. As acknowledged by the report, amphibious operations are the most complex of military operations, therefore, proficiency in this military skill cannot be expected without continuous training -- the result would be a defacto Marine Corps. (See GAO note 4, p. 74.)

(U) GAO Issue: Are the resources needed for a successful amphibious assault now available?

Comment:

1. (U) The implication of the GAO argument on this issue is that if the resources aren't available, then change the requirement and modify the strategy. In other words, let the programs and resources drive the strategy.

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3. (U) The Report also notes that extensive participation by the Navy and Air Force may be required in amphibious operations and that there is no assurance these resources can be made available. What is overlooked in this assumption is that Marines do not unilaterally decide to make an amphibious landing. Under the unified command concept, Marines are assigned, together with assets from the other Services, to CINCLANT, CINCPAC, and CINCEUR. It is the unified commander who decides if an amphibious assault is strategically or tactically necessary and makes the assignment of necessary forces (Army, Navy, Air Force) to the operation to assure success. (See GAO note 5, p. 74.)

(U) GAO Issue: Are the large amphibious assault operations now required of the Corps in contingency plans viable or practical in today's environment?

Comment:

1. (U) The amphibious aspect of the Marine Corps' mission has been subject to dynamic and continuous evolution since World War II. In response to a changing threat, changes in national strategy, and technological developments, the spectrum of amphibious operations and the utility of amphibious forces have progressively developed to the point where the classical perception of amphibious operations, typified by Second World War operations in the Pacific, is no longer entirely descriptive. A broadened perspective would include not only amphibious assault operations, but would also recognize the role of amphibious forces in sea control, influence projection, crisis control, aid to allies, and deterrence. (See GAO note 6, p. 75.)

2. (U) To illustrate, since 1958, deployed amphibious forces have responded to no less than 45 contingencies. A more inclusive description of the Marine Corps amphibious role, therefore, encompasses missions such as: Projection of naval power ashore into either a hostile or non-hostile environment without dependence on developed facilities ashore or overflight and base rights; peacetime projection of U.S. influence and presence; show of force to give evidence of U.S. interest and capability; protection or evacuation of U.S. nationals; assistance to allies through flexible and selective levels of military assistance; and early commitment of U.S. forces to combat when required. (See GAO note 6, p. 75.)

3. (U) It is true that the United States has not conducted a major opposed amphibious assault in over twenty years, but neither have we engaged in armored warfare, dropped a nuclear weapon, or participated in a major sea battle. In those years, we have engaged in only one major war, and it would be wrong to suggest that any U.S. military capability not employed extensively in Vietnam is outmoded.

4. (U) Military planners both within and outside of the Marine Corps would not agree with the proposition set forth in the report that "...the potential for surprise no longer exists and a large amphibious force would be extremely vulnerable to the weapons of today." It is true that strategic surprise may be very difficult, but tactical surprise is attainable and will be in the future.

APPENDIX I

5. (U) Arguments which point out the vulnerability of amphibious forces in general war fail to take into account that entire coastlines cannot be heavily defended, and time and space factors pose problems to an enemy in bringing his forces to bear. Conversely, the mobility of the amphibious force enables it to select the time and location of the operation so as not to land where the threat is greatest. In the face of an increasingly sophisticated threat, intensive efforts are continuing to develop new techniques and systems to counter enemy capabilities and maintain the forcible entry capability. Capabilities have been specifically developed to enhance the ability to neutralize enemy weapons systems. Developments such as Surface Effect Ships, VSTOL aircraft, improved anti-tank weapons, stand-off air delivered ordnance, laser designation and target acquisition devices, lightweight major caliber guns, airborne mine countermeasures, and new advanced amphibious vehicles and landing craft will result in greater capabilities for the amphibious assault in the future. (See GAO note 7, p. 75.)

6. (U) Amphibious assaults have always been the most difficult and complex tactical maneuver. However, to focus solely on the potential risks is to ignore the military benefits to be gained by amphibious operations in a major war.

APPENDIX I

(U) GAO Issue: Can the Corps effectively take the offensive against Warsaw Pact forces?

Comment:

1. (U) Inherent in the capability to initiate offensive operations against an enemy force is the requirement to possess superior combat power. This is usually translated into an attacker/defender ratio of 3:1. It is for this reason that care is taken in assuring that the prerequisites for amphibious operations are present before initiating an assault.

2. (U) The question belies the role of the Marine Corps, suggesting unrealistic unilateral actions, and tends to imply that Marine Corps forces would be opposing a substantial part of the Warsaw Pact forces. Pact forces do constitute a formidable threat. However, the military success of Marine Forces in this environment cannot be assessed accurately in isolation. An objective appraisal of their capability requires a complete assessment of NATO vs the Warsaw Pact with focus on a Marine Force commitment against a realistic portion of potential enemy forces.

GAO NOTES

1. We are not suggesting that the Corps ought to plan for a single scenario--European or otherwise. Rather, we believe that, within the range of potential contingencies that might require the use of U.S. military force, some (1) would affect U.S. national interests far more than others and (2) would require more resources than others. Logically, these factors should be part of the planning process and resources should be allocated accordingly.

2. Only about [deleted] percent of the existing Marine Corps force structure can be deployed aboard amphibious shipping to perform its basic mission--as defined by law--of providing forces for service with the fleet in the seizure and defense of advanced naval bases and for conducting such land operations as may be essential to the prosecution of a naval campaign.

3. Although the Navy and Marine Corps state that the integrated air-ground team is an essential organizational requirement, historically this has not been the case. Instead, Marine air forces have normally been consolidated into joint operations with the Navy and Air Force.

4. The basic thrust of these comments is that only the Corps is capable of performing amphibious assaults. Past experience does not support the contention that amphibious operations require a force dedicated to this mission. During World War II, the only period in history in which large amphibious operations have been conducted, most such operations were conducted by the Army. All amphibious assaults in the European theater were Army operations, and most of the major assaults in the Pacific were joint Army/Marine actions. Even today, the Army maintains a large fleet of watercraft to support amphibious operations.

5. The Corps' comments, while valid, do not recognize the constraints imposed on the unified commander. For example, conducting a major amphibious assault in support of NATO would require

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6. Most of the responses to the contingencies discussed in the Corps' comments were in a permissive environment and for humanitarian and evacuation purposes. We take no issue with such application of Marine forces.

The comments state that a more inclusive description of the Corps' amphibious role encompasses such missions as projection of naval power ashore and show of force. To carry out these roles, the Corps, since 1948, has maintained Marine amphibious units (consisting of between 1,600 and 4,000 men) in routine forward deployment aboard ships. At present, there are four such deployments--two in the Pacific and two in the Atlantic/Mediterranean.

There are no cases in the contingencies discussed above in which these afloat forces acted in combat without being reinforced from the United States or from other forward bases. Thus, if such afloat forces must wait for reinforcement, valid questions can be raised about the true usefulness of the Corps in a show of force or power projection role. That is, is a 1,600- to 4,000-man force a significant military deterrent in most parts of the world today?

7. It is true that entire coastlines cannot be heavily defended. But it is also true that amphibious assaults cannot be launched at just any point of a coastline. The beach gradient, water, weather, and other conditions must fall within rather narrow parameters to successfully launch such an operation.

The amphibious force does have mobility while aboard ships; however, once it lands, it loses that mobility. The Corps is basically "foot" infantry, not a mechanized force. Therefore, the force would have to be landed somewhat near the enemy force, although granted not at the point of highest threat. Otherwise, it would be difficult to engage an enemy force.

Most of the new system developments discussed are directed toward providing a quicker way to land a force. But once on the beach, the force is still foot infantry. It is difficult to visualize how these developments enhance the Corps' ability to launch an offensive against a sophisticated enemy. The major weapon mentioned in this list that would be used by the landed force is improved antitank weapons. Such weapons are primarily defensive in nature and, thus, do not provide a basis for taking the offensive against an enemy force.

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