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MILITARY POSTURE FY 1988



PREPARED BY THE JOINT STAFF

**UNITED STATES
MILITARY POSTURE
FOR
FY 1988**

Prepared by
THE JOINT STAFF

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PREFACE

The primary purpose of this statement on the military posture of the United States is to supplement testimony by the Chairman and other members of the Joint Chiefs of Staff at congressional hearings in support of the Fiscal Year 1988-89 Defense Budget.

Chapter I is an overview that describes the main challenges to US national security, outlines objectives and elements of US military strategy, and highlights continuing efforts to field the best possible armed forces for the protection of US national interests.

Chapter II compares US defense requirements and resource commitments with those of the Soviet Union.

Chapter III provides an overview of the global military environment by comparing US and allied forces with Soviet and Warsaw Pact forces.

Chapter IV assesses the current and projected capability of the US Armed Forces to meet the Soviet nuclear threat.

Chapter V assesses the current and projected capability of US Armed Forces, in concert with friends and allies, to meet the Soviet conventional military threat. This chapter deals primarily with joint perspectives that have increased the capabilities and efficiency of our forces.

Chapter VI addresses other topics of interest.

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CHAPTER I. SECURITY CHALLENGES AND THE MILITARY POSTURE

INTRODUCTION

The US Armed Forces protect and preserve the United States as a free nation. US forces help assure the physical security of the United States as a democracy and protect US interests abroad. The basic military strategy of the United States is the deterrence of war. A credible deterrent across the full spectrum of conflict requires a strong military posture. Although strong support by the Administration and Congress has generated improvements in our warfighting capability during recent years, much of this gain could be lost if funding cuts in rate of growth continue.

MILITARY POSTURE AND GLOBAL REALITIES

The United States has global interests and commitments. The security interests of the United States, its allies, and friends continue to be challenged by the sustained growth and complexity of Soviet military power, Eastern bloc and surrogate exploitation of regional conflicts, and instabilities in many areas of the world.

The Soviets continue to modernize their strategic nuclear, theater nuclear, and conventional forces and their capabilities for projecting military power. Together with clients and surrogates, they are attempting to weaken the ties between the United States and its allies and to extend their influence in the Third World. Soviet global ambitions further impede the peaceful resolution of Third World problems and contribute to regional instability in ways that promote wider conflict.

US military strategy seeks to deter attacks against the United States and its allies, limit Soviet capabilities for coercion, and provide the flexibility to respond appropriately to aggression. Therefore, US forces must be capable of meeting regional challenges as well as threats of global dimension. Readiness, sustainability, and sound force dispositions are imperatives of the US military posture.

Global Considerations

US interests are best pursued within a stable, peaceful international community. Armed conflicts, international terrorism, and regional instability adversely affect the United States and its allies with potential global implications. These challenges have led to the development of sophisticated US mili-

tary forces and to the need for collective approaches to security.

The Soviet Union continues its efforts to influence international events through disinformation, foreign aid, negotiations, the introduction of Soviet equipment and personnel, the use of surrogate forces, support to insurgencies, and, in the case of Afghanistan, direct military intervention.

The continuing Soviet buildup of nuclear and conventional forces has global significance. Soviet military capabilities have put great pressure on US and allied defensive strategies and threaten international stability. The United States and Soviet Union could inflict unprecedented damage on each other by the use of strategic nuclear forces. Nevertheless, the Soviets have continued to develop strategic offensive and defensive capabilities in an effort to reduce the credibility of the US deterrent, to increase the options available to the Soviet leaders, and to diminish the options open to the United States and its allies. The Soviets' heavy dependence on military capabilities, along with their expansionist policies, continues to threaten the North Atlantic Treaty Organization (NATO) and serves to maintain pressure on the Eastern bloc to ensure Warsaw Pact cohesion. In addition, the Soviet Union has broadened the scope of its military activity outside Europe, as shown by its aggression in Afghanistan; extensive maritime operations, especially from facilities at Cam Ranh Bay, Vietnam; and the accelerated buildup of air, ground, and naval forces in the Soviet Far East and the Pacific. The Soviets continue to expand their use of space for military purposes. These activities, along with increased Soviet support and employment of surrogates throughout the underdeveloped world, provide challenges to the West.

Implications for US Strategy and Forces

Military strategy is designed to meet the challenges to US security interests. Such interrelated factors as US-USSR relations, relative strengths and weaknesses of major nations, global military balance, arms control agreements, and current regional military situations must be considered in the formulation of strategy and the development of forces to support it. US military strategy and force levels must be adequate to confront a wide range of challenges, from low-intensity conflict to threats involving modern conventional and nuclear forces.

US MILITARY STRATEGY

The security requirements summarized above form the basis for US military strategy to support the more comprehensive national security objectives. The US military strategy seeks to deter war while maintaining a secure environment within which the United States, its allies, and its friends can pursue legitimate interests. This strategy of deterrence is rooted in a national commitment to peace and freedom.

Elements of the Strategy

The fundamental elements of US military strategy are nuclear deterrence supported by negotiated arms reductions and the Strategic Defense Initiative (SDI); strong alliances; forward-deployed forces; a strong central reserve; force mobility; freedom of the seas, air, and space; effective command and control; and good intelligence.

Nuclear Deterrence With Arms Reductions

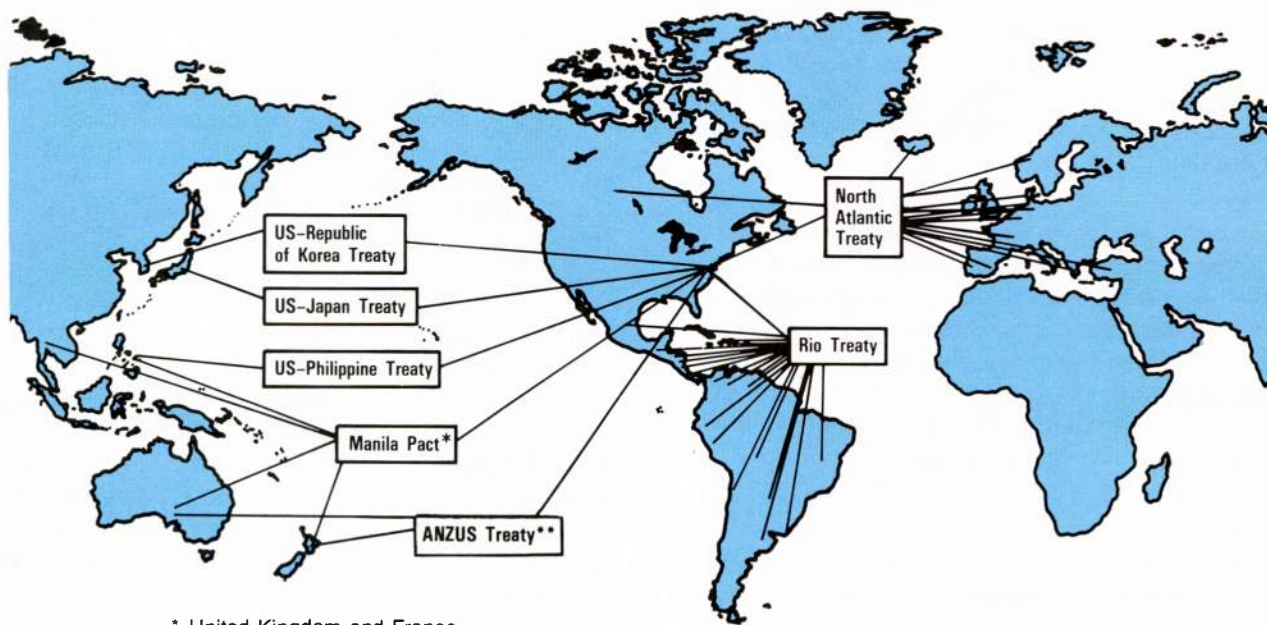
The fundamental objective of US nuclear forces is to remove all incentives for direct attack against the United States and its allies by promising a devastating retaliation to any attacker. The Soviet Union has continued to challenge the US

guarantee of effective retaliation and has threatened US deterrent capabilities by strengthening certain measures of Soviet nuclear strength. To counter growing Soviet nuclear warfighting potential, the United States places high priority on the modernization of its nuclear forces and, under SDI, the study of means for defending against ballistic missile attack. Equitable and verifiable arms reduction agreements are being pursued in parallel with modernization programs. The goal of the United States is a more stable nuclear balance at lower levels of armament.

Strong Alliances

US military strategy is based on a system of strong alliances (Figure I-1). The shared values and combined economic strength of friendly countries provide a firm basis for effective collective security among the NATO nations, Pacific nations, and US allies elsewhere. The cohesion of US collective security arrangements requires understanding that interests of the United States and its allies may not always coincide. Nevertheless, US alliances are more reliable than those of the Soviet Union because they are built on voluntary association, shared values, mutual trust, common purpose, and strong commitment.

United States Collective Defense Arrangements



* United Kingdom and France

** As of 11 August 1986, the U.S. suspended security obligations to New Zealand

As of 30 September 1986

FIGURE I-1

In this period of challenges to the nuclear balance between the United States and the Soviet Union, conventional military forces have become increasingly important. The Warsaw Pact has fielded large armed forces with modern conventional, chemical, and nonstrategic nuclear weapons. The United States alone does not match these forces in numbers. US allies make a significant contribution to deterrence by providing weaponry, well-trained manpower, facilities, and control of key geographical areas, thereby enabling the Free World to meet Soviet challenges.

The United States, with its NATO allies, is pursuing increased stability at lower levels of forces in Europe's Central Region through the NATO-Warsaw Pact Mutual and Balanced Force Reduction (MBFR) talks. Further, there is more openness regarding the activities of military forces in the 35-nation Conference on Security and Cooperation in Europe (CSCE). The United States is also committed along with its allies to begin new discussions of conventional reductions in the area from the "Atlantic to the Urals."

Forward-Deployed Forces

A key factor in the success of US alliances is the forward deployment of military forces. These forces demonstrate the US commitment to the common defense and serve notice that an attack will be met immediately by US opposition. In peacetime, the American presence among allies reduces the coercive potential of Soviet military threats and facilitates early reinforcement in crises. In the event deterrence fails, sufficient forward-deployed forces can ensure an effective combined defense.

Central Reserve

The majority of US nuclear and conventional forces are based in the United States. The readiness and preparedness of these forces to deploy contributes to deterrence of major conflict. These forces provide the capability to reinforce and sustain forward-deployed forces in combat and help deter or contain conflicts in areas of interest where the United States has no permanent military presence.

Force Mobility

In order to project US military power globally, US forces must maintain a high degree of mobility. The successful implementation of US strategy requires highly capable airlift, sealift, and aerial refueling forces. Additionally, overflight arrangements, access and use rights for overseas bases, airfields, ports, and staging areas contribute to deployment flexi-

bility and efficiency. Other important components of US reinforcement are pre-positioning of supplies and equipment in certain areas to reduce significantly dependence on strategic lift for deploying force equipment and sustaining supplies and establishment of host-nation support.

Freedom of the Seas, Air, and Space

Freedom of navigation and access to space are inherent elements of US military strategy. Unimpeded use of the air, seas, and space allows support and reinforcement of forward-deployed forces, enables US and allied forces to operate worldwide, and ensures uninterrupted commerce for the nation and its allies.

Freedom to operate in space is a modern military requisite. The United States depends heavily on satellites for early warning of missile attack, weather data, navigation, surveillance, and command and control. Superior space capabilities will be required to ensure uninterrupted US use of key space assets.

Command, Control, and Communications (C³)

C³ is imperative to the successful employment and most effective use of US military forces. C³ systems must be as survivable and enduring as the forces they support because these systems provide the essential link between the National Command Authorities (NCA), Joint Chiefs of Staff (JCS), commanders in chief of unified and specified commands (CINCs), and the executing forces. Survivable facilities and systems that operate effectively during all phases of conflict add to deterrence and are vital should deterrence fail.

Intelligence

US military strategy depends heavily on accurate and timely intelligence for warning and the effective employment of military forces. Such intelligence increases the likelihood that forward-deployed and reinforcing forces will deter conflict or defend successfully and maximizes the potential of modern weapon systems.

Applying the Strategy

US forces are not available to defend simultaneously against every threat with equal strength. Nonetheless, the United States must make it clear that its interests will be defended and its obligations to allies will be met. US force employment planning considers the fundamental tasks that must be accomplished and the need to retain flexibility to meet other contingencies that threaten US security interests.

Should deterrence fail, US military forces will undertake missions to defeat aggression against the United States, its allies, and friends and to terminate conflict on favorable terms. US forces would seek to limit the scope and duration of any conflict in which they were involved.

Sound military doctrine is essential to the successful implementation of US strategic concepts. Joint doctrine ties together the capabilities of the Services, guiding the development, deployment, and employment of forces. Effective joint doctrine helps prevent duplication and gaps in Service capabilities and aids in the translation of plans into execution. Likewise, combined doctrine provides a standardized reference for military operations with our allies, enhancing interoperability and effectiveness. The CINCs are charged with the mission of executing these military operations in support of national objectives. Further discussion of the role of the unified and specified commands is contained in Chapters 5 and 6.

The US strategy is designed to capitalize on the durable strengths of the United States — its political and social values, diversified economy, advanced technology, and the will and ingenuity of its people. To succeed, US strategy will continue to require the help of supportive allies and remain adaptable and responsive to a changing world.

Competitive Strategies

We are examining competitive strategies aimed at increasing the capacity and efficiency of our military forces in a resource-constrained environment. We are seeking new and innovative means of exploiting Soviet weaknesses while emphasizing durable US strengths. Competitive strategies offer the potential of enhancing the US deterrent capability across the spectrum of conflict. The potential profit of Soviet military adventurism must be reduced to the point where the Soviets have nothing to gain as a result of military action.

PROGRESS MADE

The ability of our nation's military forces to accomplish their warfighting tasks has continued to improve. These enhancements encompass all aspects of military capability: readiness, sustainability, modernization, and force structure efforts. This is due primarily to investment decisions made in the 1982-85 timeframe. Although new equipment is still coming out of the pipeline, much of this gain in

military capability could be lost if funding cuts to the Defense budget continue.

The force structure within which US military forces are organized continues to change to give the balance needed to maintain the capability to respond at various levels of conflict. The Army has moved toward a 28-division structure that has a better balance of light and heavy forces. The number of US Navy ships has increased to meet expanding maritime requirements, and Air Force structure provides greater fighter aircraft capabilities. Modern equipment and organization enhancements have improved the Marine Corps' amphibious forcible entry capability. This improved force structure needs modern equipment to meet the threat. Equipment from the strategic level to the very personal area of ground combat is being modernized, and inventories are being increased. Specifics are addressed in subsequent chapters.

Because of production limitations, funding constraints, and equipment transition periods, modernization benefits will be distributed over the next several years. Training with evolving joint tactics makes our units more robust and allows fewer forces to protect more. Readiness efforts, on the other hand, have produced steady and measurable improvements all through the period. Mission-capable rates of aircraft, the numbers of sorties and aircraft utilization rates, and capabilities in strategic warning and attack assessment have all increased. The readiness of US military forces to execute assigned tasks is at a high state.

One important factor that influences preparedness to respond to threats is sustainability. Both ammunition and missile inventories have been increased, though shortages still exist. Aircraft sortie rates have also improved as a result of increased spare parts. Redundancy of command, control, and communications and increased electromagnetic pulse hardening of strategic time-sensitive sites have enhanced survivability and thus provide sustaining command and control.

The key, however, to mission accomplishment is the men and women who have chosen to serve. The quality of men and women in the US Armed Forces has never been higher.

The combination of good people and effective programs has made US forces more professional, reliable, and capable. The continued support of

Congress and the American people will be critical to maintaining improvements in military preparedness.

PREPARING FOR THE FUTURE

The proposed defense program for the fiscal year (FY) 1988-89 Budget and the FY 1988-92 Defense Program will have a significant impact on the readiness, sustainability, modernization, and force structure posture of US military forces. Fiscal constraints will cause modernization efforts to be stretched out over a longer period of time, force structure to be diminished, and reduced training and support activities for our forces. The net result of these reductions will be to erode the qualitative edge of our military posture and to diminish past trends toward risk reduction relative to the projected threat. Adequate resources must be provided to ensure that our essential warfighting capabilities are not impaired and we continue to provide a credible deterrent. The zero/negative real growth in FY 1986 and FY 1987 defense spending must be reversed to meet future US defense needs.

The United States continues to place a high priority on the modernization of its strategic forces. The aim of this vital effort is to make command, control, and communications systems more survivable and enduring while maintaining and improving all legs of the Triad. The development and deployment of the PEACEKEEPER missile, the small intercontinental ballistic missile (SICBM), the TRIDENT II (D-5) submarine-launched ballistic missile system (SLBM), the B-1B, the Advanced Technology Bomber (ATB), the AGM-86B Air-Launched Cruise Missile (ALCM), the Advanced Cruise Missile (ACM), and the short-range attack missile (SRAM II) will make the US strategic deterrent more effective, survivable, and reliable. These nuclear weapon modernization programs are important contributions to deterrence and enable the United States to enter meaningful arms reduction agreements.

A major effort is under way to address the feasibility and desirability of developing defenses against ballistic missiles. Under the President's Strategic Defense Initiative, research is being conducted on potential technologies that might provide a defense against ballistic missiles.

Emphasis on nonstrategic nuclear force modernization continues with the deployment of modernized field artillery warheads and the fielding of sea-launched nuclear TOMAHAWK land-attack cruise missiles (TLAM/N) and ground-launched cruise mis-

siles (GLCMs). Improved command, control, and communications will increase the survivability, flexibility, and deterrent capability of deployed nonstrategic nuclear forces.

The modernization of conventional forces is another key objective of the US defense program. Land forces are undergoing organizational changes to improve their flexibility and maximize the effectiveness of recently introduced or improved weapons, such as the ABRAMS tank, BRADLEY fighting vehicle, AH-64 (APACHE) and UH-60 (BLACKHAWK) helicopters, multiple-launch rocket system (MLRS), and PATRIOT air defense system. As a result of organizational improvements, the Army's 17 Active and 9 Reserve component divisions have been restructured to 18 Active and 10 Reserve component divisions.

The United States continues to build toward a 600-ship Navy with 15 carrier battle groups, 4 battleship battle groups, 100 modernized attack submarines, and expanded amphibious assault and sealift capabilities. Recently introduced or improved weapons, such as the conventional TOMAHAWK land-attack cruise missile and the AV-8B (HARRIER),



AV-8B HARRIER

have contributed to conventional force modernization. Additionally, combat aircraft, fighting vehicles, and modernized munitions are being obtained to increase and strengthen the Marine Corps' rapid reaction and amphibious capabilities.

The Air Force continues to obtain more capable combat aircraft and modernized munitions while working toward an interim goal of 40 tactical fighter wing equivalents. Additionally, the modernization of the KC-135 fleet and deployment of KC-10 tanker/cargo aircraft will enhance our refueling and airlift forces.

These programs, together with the afloat prepositioning force (APF), increased strategic airlift and



M-1 ABRAMS

sealift, and revitalization of special operations forces, will enhance the readiness posture of US forces and their sustainability. Finally, added attention to cross-Service and allied requirements has enhanced the applicability of these improvements to both joint and combined operations.

Good soldiers, sailors, airmen, and marines are essential to successful implementation of the US military strategy. Service manpower programs will continue to aim at recruiting and retaining quality men and women who value service to their nation and have the aptitude, skills, motivation, and physical and mental capabilities to operate and maintain modern weapon systems.

The programs initiated to restore and maintain US military strength must be continued. Constant attention and sustained support are required to keep



KC-10 REFUELING F-111



AEGIS CRUISER

our forces strong. Although the trend in Congress is to reduce defense spending, short-term attempts to economize on military investments, whether in people, equipment, or facilities, can lead only to higher future costs and a less effective military posture with the attendant increased risk to national security.

CHAPTER II. STRATEGIC REQUIREMENTS AND RESOURCE COMMITMENTS

INTRODUCTION

US military strategy requires resources to maintain readiness, modernize for the future, and provide a recognized capability to rapidly mobilize additional forces. The US Armed Forces must, therefore, be supported by an efficient, effective national resource base. This chapter provides an overview of the US and Soviet resource bases that support military requirements.

The heavy Soviet investment in nuclear and conventional forces provides evidence of the high priority Soviet leaders place on military requirements. The United States devotes a smaller percentage of its national resources to its military posture, partly because of the defensive nature of the US military strategy, of the structural differences in the two economies, and of the different national security strategies. The Soviet system of centralized planning has led to an overall weaker economy and a relatively smaller economic base than that of the United States but has allowed greater Soviet focus to be placed on areas of priority. Despite this smaller economic base, the Soviet Union has decided to direct a larger percentage of its peacetime resources to military requirements than does the United States. In addition to being able to spend a larger percentage of its resources, the Soviet Union can focus more resources for force structure and weapon systems hardware than the United States. In particular, the cost of manpower is significantly less for the Soviet Union than the United States (the US budget submission for Fiscal Year (FY) 1987 earmarked approximately 24 percent for military compensation).

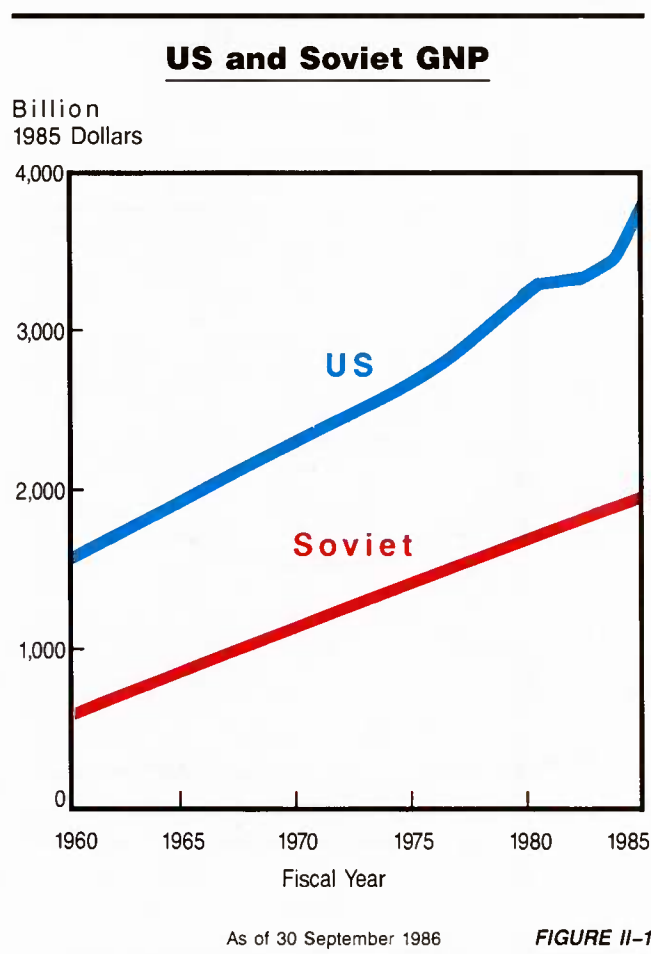
RESOURCES IN SUPPORT OF NATIONAL OBJECTIVES

Overview

A nation's economy must support its national security objectives effectively. The industrial base must be capable of producing the required military equipment from available materials and be supported by adequate manpower. Further, the industrial base must be responsive to critical wartime needs and be able to respond to surge requirements. The necessary raw materials must be available under all conditions. The United States requires a strong technological base to ensure that its forces continue to be equipped with qualitatively superior weapons.

Economic Support

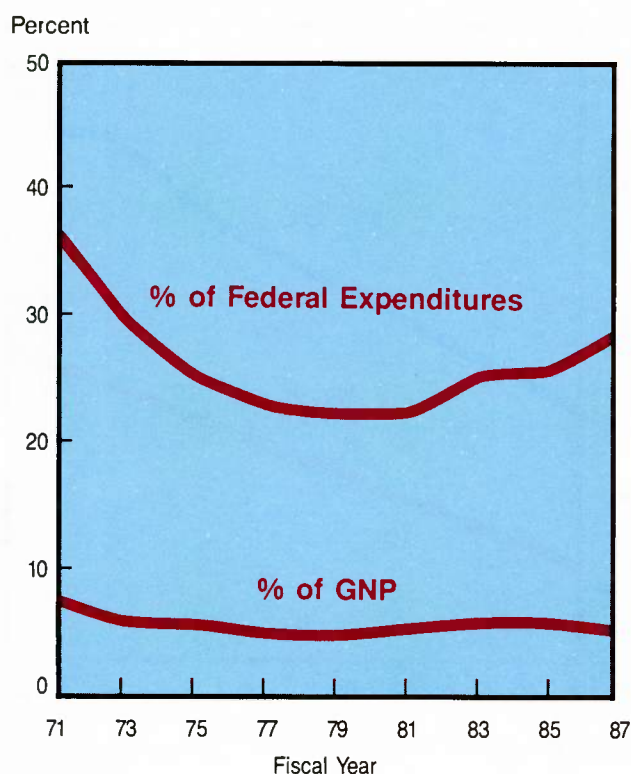
The economic strengths of the United States and the Soviet Union can be compared by examining their gross national products (GNPs). Figure II-1 shows that the US GNP is more than 80 percent higher than that of the Soviet Union. Further, the gap has continued to widen in favor of the United States. Thus, the United States has a greater potential for supporting defense spending.



The Soviet Union has steadily increased its military effort. For the 1976-85 period, the estimated cumulative dollar cost of Soviet investment for strategic forces was almost 2.5 times that of comparable US outlays, and the Soviet investment for general purpose forces was ten percent higher. Consequently, the Soviet inventory of weapons is far larger than that of the United States. Also, the average age of deployed Soviet weapons continues to decrease with

the introduction of new and qualitatively improved systems. Although the decline in US defense spending has been reversed, its percentage of GNP has remained fairly constant over the last few years, as shown in Figure II-2. Defense spending, though, has experienced non-real growth in FY 1986 and FY 1987, and the Budget Authority must be increased in real growth to meet future needs. Strong and sustained support for defense activities will be necessary in light of the Soviets' inventory expansion and continuing high rate of investment.

US Defense Expenditures as a Percentage of GNP and Federal Expenditures



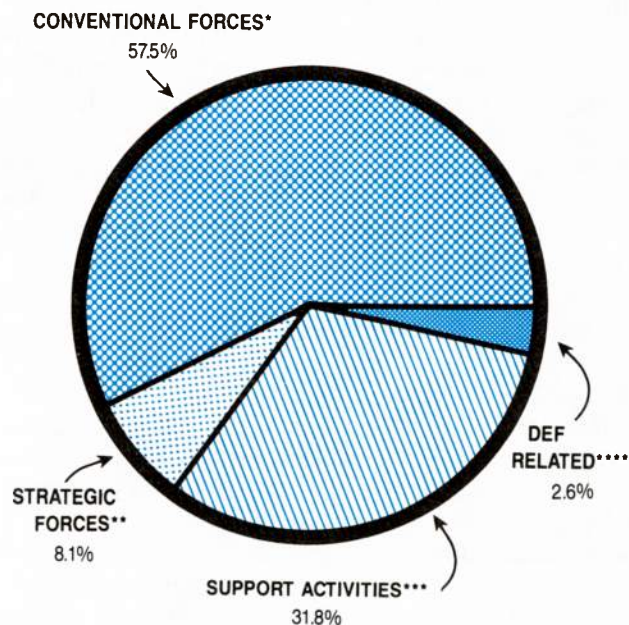
As of 30 September 1986

FIGURE II-2

National Defense Budget

The funds provided in our defense budget are used to develop, equip, support, maintain, and train the forces that enable implementation of our military strategy. A breakdown of the US defense budget for FY 1987 by major program area is reflected in Figure II-3.

Defense Budget for FY 1987



* Includes theater (nonstrategic) nuclear forces

** Does not include RDT&E for SDI or nonstrategic nuclear forces

*** Includes RDT&E for SDI

**** Includes DOE funding

SOURCE: OMB "THE US BUDGET IN BRIEF - FISCAL YEAR 1987"

As of 30 September 1986

FIGURE II-3

Subsequent chapters will address in some detail improvements and developments of these forces. However, budget cuts will have an immediate adverse impact on the readiness of our forces and their ability to implement military strategy. They will undo many of the gains achieved.

Industrial Base

The military potential of nations can be measured, in part, by peacetime production bases and the capability for rapid conversion to wartime needs. The Soviet defense industry is now the world's largest, both in numbers of facilities and output capacity. If the full industrial capabilities of both nations were mobilized for military production, the United States would initially be unable to match Soviet industrial production. Over time, however, the United States,

because of its much greater industrial base, could surpass Soviet capabilities in terms of both size and output. The timing and degree of emphasis the United States places on mobilization of its industrial base would be critical to the successful outcome of a major protracted conflict with the Soviet Union.

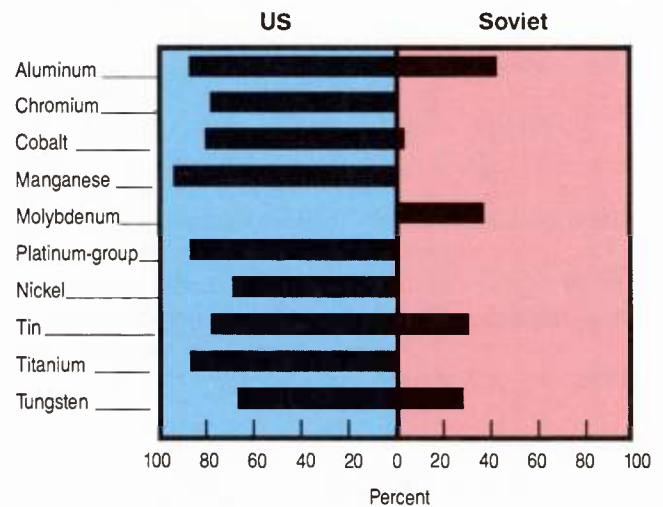
Soviet weapon plants and war-related production facilities are continually active; as old weapon programs are phased out, new ones are begun. As a result, the Soviet arms industry is in a constant high state of readiness and is capable of rapid wartime expansion. In the United States, however, the increased emphasis on high technology manufacturing and the growth of service industries, combined with the decline of heavy industry and traditional manufacturing required for arms production, have reduced the capacity to increase military production rapidly during periods of crisis.

US defense planners have taken several steps in the past few years to improve the ability of the US industrial base to support the military strategy. The Services are provided prioritized lists of systems identified by field commanders as most critical to their immediate requirements. Additionally, industrial preparedness planning is receiving increased attention, and industrial mobilization is being addressed extensively in exercises. Incentive programs are stressing efficient and competitive peacetime production to meet the demands of wartime sustainability. A continuing need exists for investments to ensure that the necessary improvements are made to the US industrial base.

Natural Resources To Support Defense

The ability to mobilize and increase wartime production depends in part on the availability of critical raw materials. These materials must be indigenous to the country, stockpiled, or available over secure lines of communication (LOCs) in time of war. The Soviet Union, which has extensive and varied mineral resources and a policy of self-sufficiency, relies on imports for only a few strategic raw materials, as shown in Figure II-4. The United States, on the other hand, relies on foreign sources for most strategic minerals. Both industry and government in the United States must anticipate problems in maintaining critical raw material stocks for military production in wartime and take necessary actions in peacetime to minimize that impact. The effect of the proposed sell-off of non-critical strategic minerals is currently under study.

US-Soviet Reliance on Selected Mineral Imports



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FIGURE II-4

Energy in Support of the Industrial Base

Energy resource and capabilities are vital to the support and maintenance of the defense industrial base. The Soviet Union, the primary threat to the United States, is the only major industrial and military power that is energy self-sufficient. In the past few years the USSR has surpassed the United States in the total production of primary energy while remaining second in total consumption. Production of natural gas and electricity and nuclear powerplants are the two fastest growing sectors of energy. An energy-sufficient Soviet Union with an exportable surplus has far-reaching military and economic ramifications for the United States and its allies in the near- and mid-terms.

Manpower in Support of Defense

Both the United States and the Soviet Union depend on large labor pools to staff their armed forces and provide skilled labor to support their bases. Although Soviet military forces are 2-1/2 times larger than those of the United States, the Soviet primary mobilization pool of 18- to 50-year-old males is only 12 percent larger. Approximately 2 million males reach age 18 annually in each country.

Conscription is the principal source of Soviet military manpower. The period of service is normally 2 to 3 years. Soviet conscription significantly reduces

personnel costs and guarantees a sizable trained manpower source for mobilization. Of the estimated 50 million personnel within the Soviet reserve forces, 9 million have served on active duty during the last 5 years.

On balance, the Soviet manpower advantages lie in the numbers of personnel already under arms or involved in defense production and the trained military mobilization pool. The size of the US labor pool should be sufficient to meet the demands of both the armed forces and military production because the United States has a less labor-intensive production base. However, the ability of the United States to meet both demands will depend, in part, on the availability of adequate response time.

OVERCOMING A QUANTITATIVE DISADVANTAGE

Technological Leadership

As a result of a larger peacetime military force, greater equipment and manpower reserves, and the ability to mobilize rapidly, the Soviet Union has forces with a quantitative advantage over those of the United States. One US approach to countering numerically superior enemy forces is to field qualitatively superior forces of its own, concentrating resources to produce technology-intensive combat and combat-support forces capable of achieving decisive results. This approach requires the United States and its allies to maintain the lead in critical military technologies and to deploy, in a timely manner, weapon systems reflecting their capabilities. Technological progress increases the deterrent value of US forces and provides a hedge against a Soviet technological breakout. US advanced technology also imposes strategic costs on the Soviets by causing them to divert resources from more easily produced systems in order to counter new, more capable US systems. The importance of technology has never been more obvious than it is today. Yet, as Figure II-5 indicates, the US lead in several key technologies is slipping. Strong US and allied technological bases must be maintained if their qualitative lead in fielded systems is to be retained.

US and allied technological leadership and cooperation are even more important now because the Soviets have fielded new equipment that is technologically comparable to, and in some cases more advanced than, that produced in the West. Since

Relative US-Soviet Standing in the Twenty Most Important Basic Technology Areas*

Basic Technologies	US Superior	US-Soviet Equal	Soviet Superior
1. Aerodynamics/Fluid Dynamics		X	
2. Computers & Software	◀ X		
3. Conventional Warheads (including all chemical explosives)		X ▶	
4. Directed Energy (laser)		X	
5. Electro-Optical Sensor (including infrared)	X		
6. Guidance & Navigation	X ▶		
7. Life Sciences (human factors/biotechnology)	X ▶		
8. Materials (lightweight, high strength, high temperature)	X ▶		
9. Micro-Electronic Materials & Integrated Circuit Manufacturing	X		
10. Nuclear Warheads		X ▶	
11. Optics		X ▶	
12. Power Sources (mobile) (includes automated control)		X	
13. Production/Manufacturing (includes automated control)	X ▶		
14. Propulsion (aerospace and ground vehicles)	X ▶		
15. Radar Sensor	X ▶		
16. Robotics and Machine Intelligence	X		
17. Signal Processing	X		
18. Signature Reduction	X		
19. Submarine Detection	X		
20. Telecommunications (includes fiber optics)	X		

* The list is limited to 20 technologies, which were selected with the objective of providing a valid base for comparing overall US and USSR basic technology. The list is in alphabetical order. These technologies are "on the shelf" and available for application. (The technologies are not intended to compare technology level in currently *deployed* military systems.)

The technologies selected have the potential for significantly *changing* the military capability in the next 10 to 20 years. The technologies are not static; they are improving or have the potential for significant improvements; new technologies may appear on future lists.

The arrows denote that the relative technology level is *changing* significantly in the direction indicated.

The judgements represent overall consensus for each basic technology area. The USSR may be superior in some of the subtechnologies making up each basic technology.

These average assessments can incorporate a significant variance when individual components of a technology are considered.

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FIGURE II-5

there are limits to the forces the United States and its allies can build and operate, US and allied leaders must search for ways to increase the effectiveness of the forces they do field through the exploitation of emerging technologies, sound operational concepts, and effective training.

Emphasis must be given to technologies that provide the greatest advantage and increase in capability while ensuring the readiness of current forces. However, high technology cannot provide the solution to all military requirements. Technically superior equipment can only complement, not replace, superior planning, sound doctrine, proper training, and sustained support. Every proposed application of new technology must strike a balance among technical sophistication, essential readiness, cost, utility, and endurance if it is to be effective in our force structure.

The maintenance of a US technological advantage also depends heavily upon efforts to prevent the transfer of such technology from the United States and other advanced nations to the Soviets and other potential adversaries. The acquisition of critical technology by potential adversaries reduces their cost of obtaining new capabilities, allows them to deploy new systems sooner, and provides data that can be used to counter the effectiveness of US weapon systems and equipment.

Allied Forces

Strong alliances are an important part of the US military strategy. US and allied defense efforts must be integrated effectively to ensure that their collective capabilities are realized. The need persists for greater interoperability between US and allied equipment, ammunition, and techniques, as well as command, control, communications, and intelligence (C³I) systems. The strong air defense alliance maintained with Canada continues to improve. The United States and its North Atlantic Treaty Organization (NATO) Allies are continuing to improve capabilities for mutual support and coordination

through mechanisms such as armaments cooperation and the NATO Wartime Reallocation Agreement, which has recently been negotiated between the United States and Supreme Allied Commander Atlantic (SACLANT). Interoperability with friendly and allied Asian countries is improving through equipment and procedure modifications and frequent combined military exercises. In Japan, single service and joint/combined doctrinal, material, conceptual, and logistic interoperability issues are now reviewed semiannually by bilateral interoperability steering committees.

Strong alliances, combined with a continuing number of important initiatives that are beginning to result in industrial expansion and modernization, enable the United States to counteract the Soviet threat. Positive results from policies and programs established in recent years are being seen. One example is sharing of technology with NATO countries and Japan to reduce redundancy of expenditure in research and development (R&D) efforts.

In addition, Congress has supported increased funding for surge industrial responsiveness. Further activity involves an Industrial Modernization Incentives Program to provide contract incentives that encourage industry to make capital investments that enhance productivity. A healthy and responsive industrial base and overall economy have been, and will continue to be, important elements of US national security. In the case of the industrial base, vigilant attention to quality, productivity, and efficiency, while maintaining a sufficient reserve capability to meet any potential crisis, are vital to our enduring national defense.

CHAPTER III. THE MILITARY ENVIRONMENT

INTRODUCTION

World events have demonstrated that potential adversaries of the United States are willing to use military force in the pursuit of their objectives. Turmoil in underdeveloped areas of the world threatens the flow of resources among nations and provides the Soviet Union opportunities to expand its influence at the expense of the Free World. Instability is most prevalent in the Central American-Caribbean region, Africa, Southeast Asia, and the area stretching from Libya to Afghanistan. Nations within these regions are confronted by social, economic, and political problems that defy easy solution and often lead to insurgency and intraregional strife.

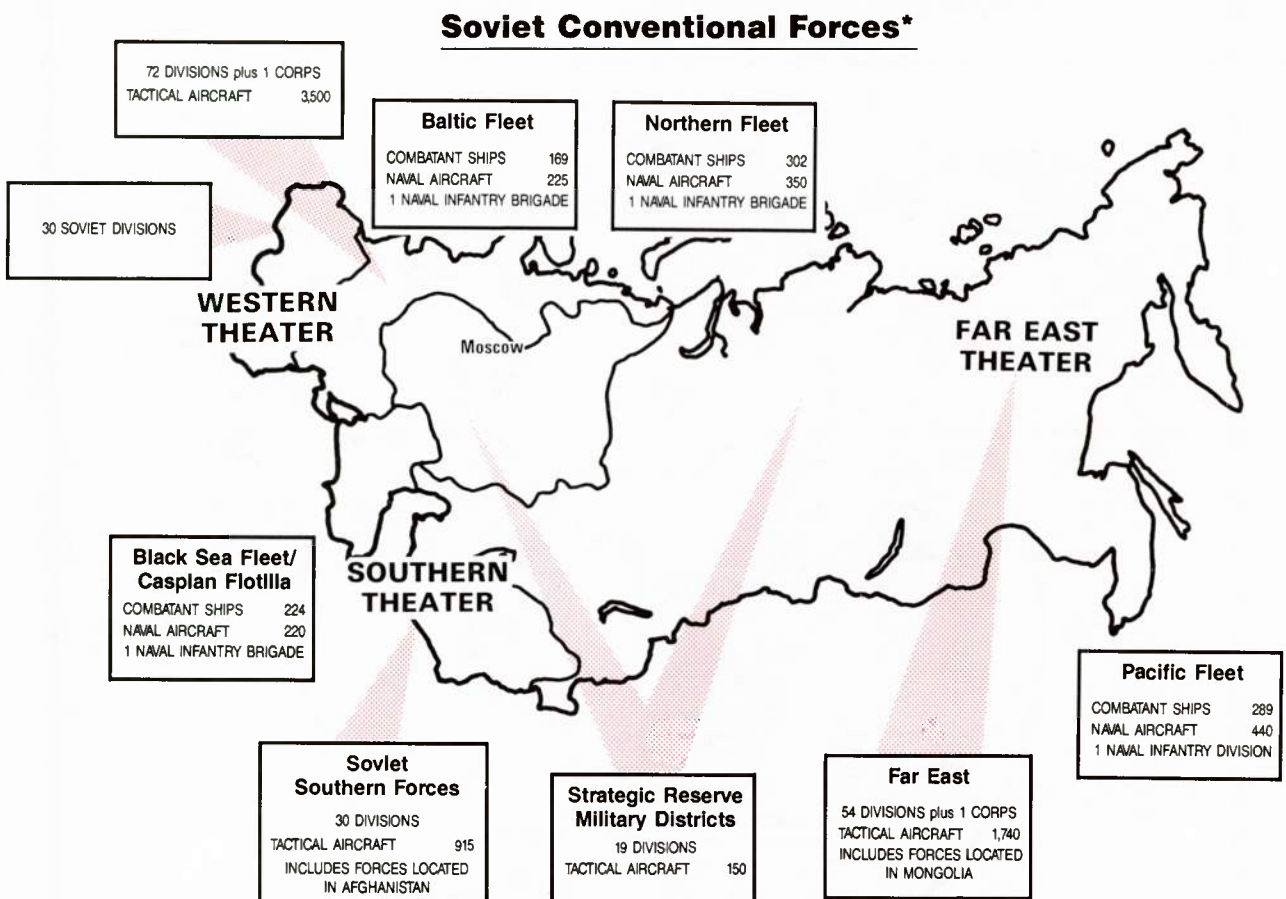
Intraregional conflict poses the risk of involving both neighboring nations and major powers outside the area. The United States must stand ready with other nations to deter regional conflicts or limit them should deterrence fail.

This chapter addresses the global military environment from a regional, maritime, and security assistance perspective.

GLOBAL OVERVIEW

Soviet Posture

Soviet forces deployed in Eastern Europe, together with other Warsaw Pact forces, constitute the major



* (U) Combatant ships include submarines (less SSBN's and SSB's), carriers, principal surface combatants, patrol combatants, mine warfare ships, and amphibious warfare ships. Submarines and principal surface combatants in reserve are precluded.

military threat to the Western allies. Major air, land, and naval forces also face Southwest Asia, China, and the Northwest Pacific (Figure III-1). The Soviets maintain a significant military presence in Africa, Southeast Asia, and Cuba, in addition to a substantial fighting force in Afghanistan. Further, they provide security assistance on an extensive scale and use surrogate forces to project their military power.

US Posture

The effectiveness of the US strategy depends not only on a system of forward-deployed forces but also on close cooperation with regional allies. In addition to their own military forces, these allies may also provide basing and staging facilities, overflight rights, ashore pre-positioning sites, and host-nation support to assist US forces. Figure III-2 shows the current deployment of major US air, land, and naval forces. The majority of the remaining US active component forces and virtually all reserve component forces are located in the continental United States

(CONUS). These latter forces provide the flexibility to shift forces as required by various contingencies or world developments.

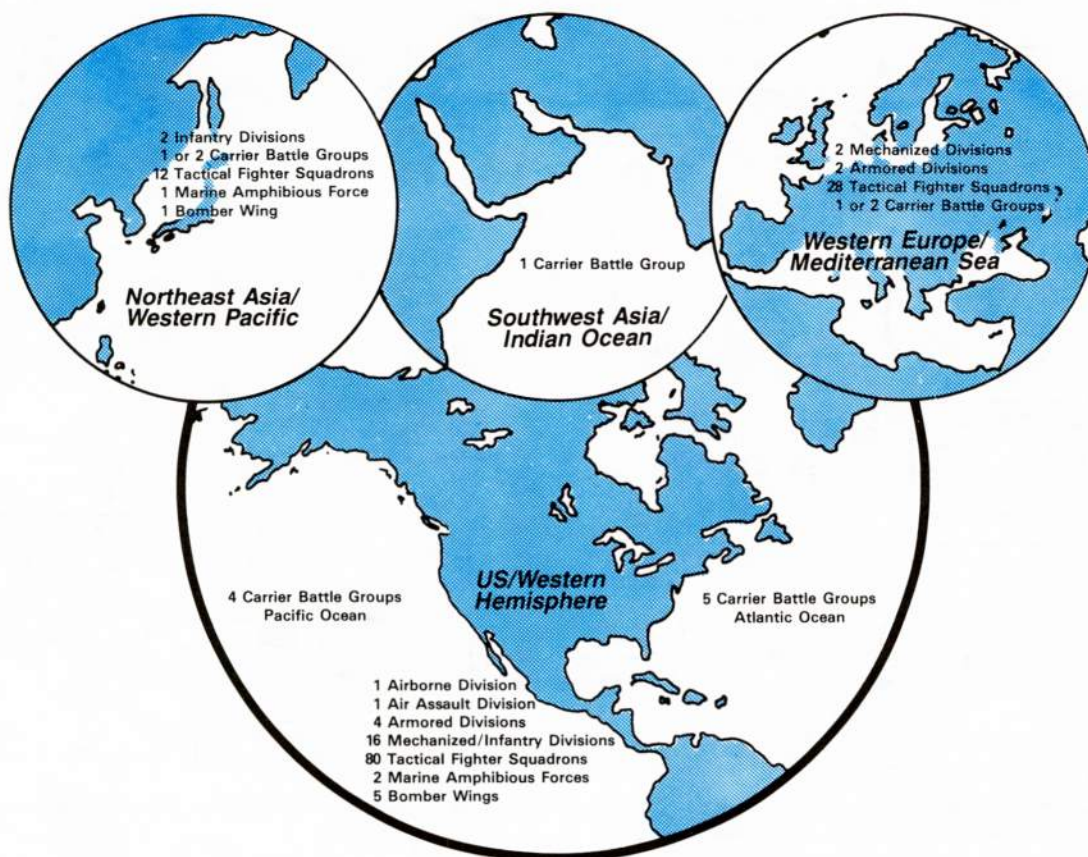
REGIONAL FORCES

NATO and Western Europe

Warsaw Pact conventional forces are being modernized at a pace that threatens to overcome the North Atlantic Treaty Organization's (NATO's) longstanding advantages in quality. The United States and its NATO allies have made significant improvements in their conventional capabilities, but strong and sustained efforts are still required to meet Alliance force goals.

The Warsaw Pact's military strength is far in excess of that required to defend its territory. The Warsaw Pact's conventional forces are organized, equipped, and trained to conduct offensive operations, and their doctrine and exercises continue to emphasize the

US Conventional Forces



As of 30 September 1986

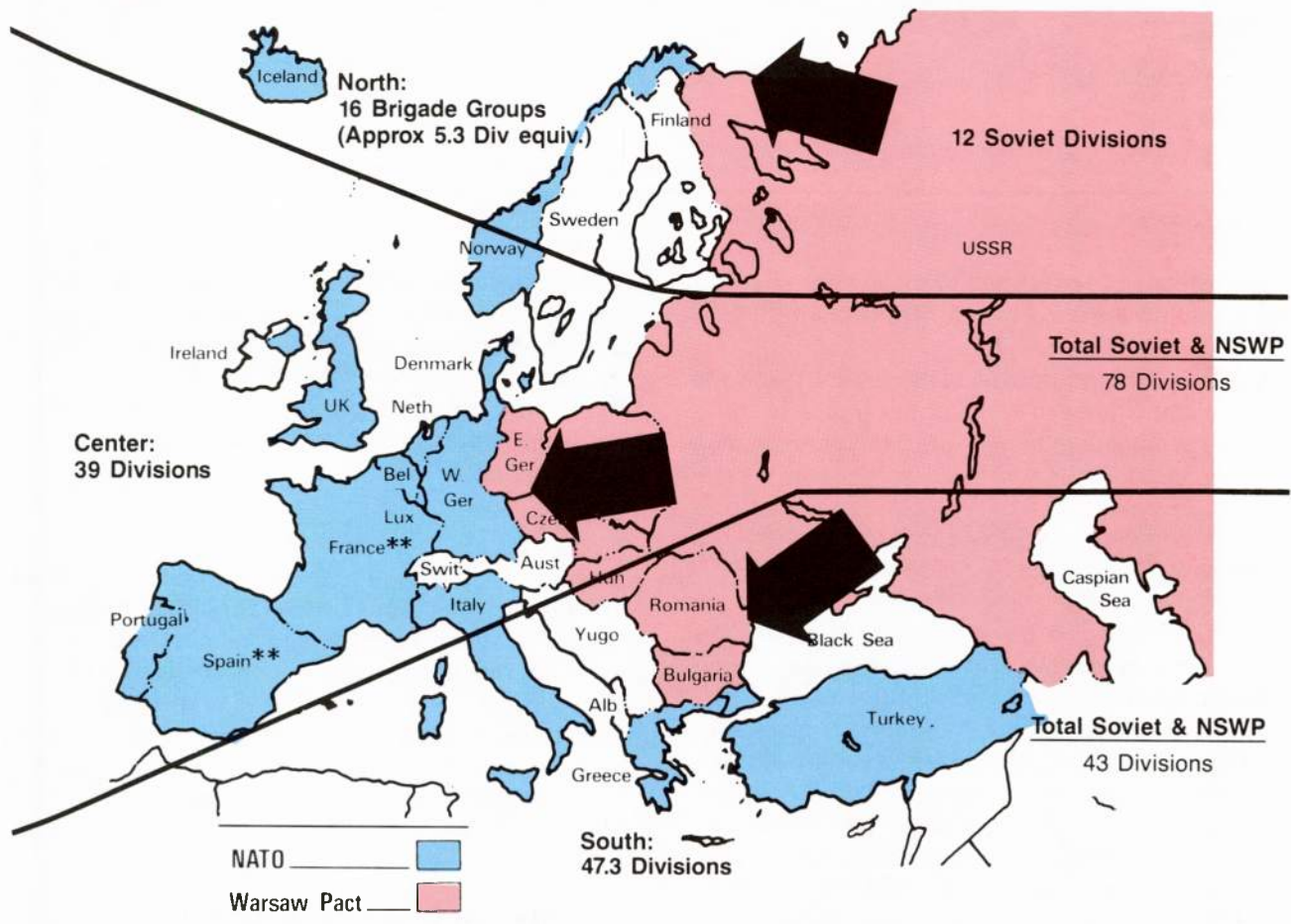
FIGURE III-2

elements of surprise and large-scale penetration of NATO territory. The major forces facing NATO are depicted in Figure III-3 with axes showing probable routes of attack. Warsaw Pact armies could be reinforced with larger numbers and in a shorter time than NATO, particularly if the West had little warning. Figure III-4 illustrates this Warsaw Pact advantage. In the past year, the capability of US combat forces in Europe to support military operations has continued to improve. However, corresponding Soviet and Non-Soviet Warsaw Pact (NSWP) improvements require continued increases to maintain a viable deterrence posture within NATO. One critical challenge

confronting US European Command (USEUCOM) and NATO is the congressionally mandated European Troop Strength (ETS) ceiling and its adverse impact on force structure, modernization, readiness, and sustainability. Abolishment of the ETS ceiling as an arbitrary manpower ceiling and establishment of a force structure based upon geostrategic principles and the ever-increasing threat would enhance NATO's deterrence capabilities.

The ability to reinforce forward-deployed US forces rapidly is also a key factor in supporting NATO commitments.

Inplace and Rapidly Deployable NATO and Warsaw Pact Forces*



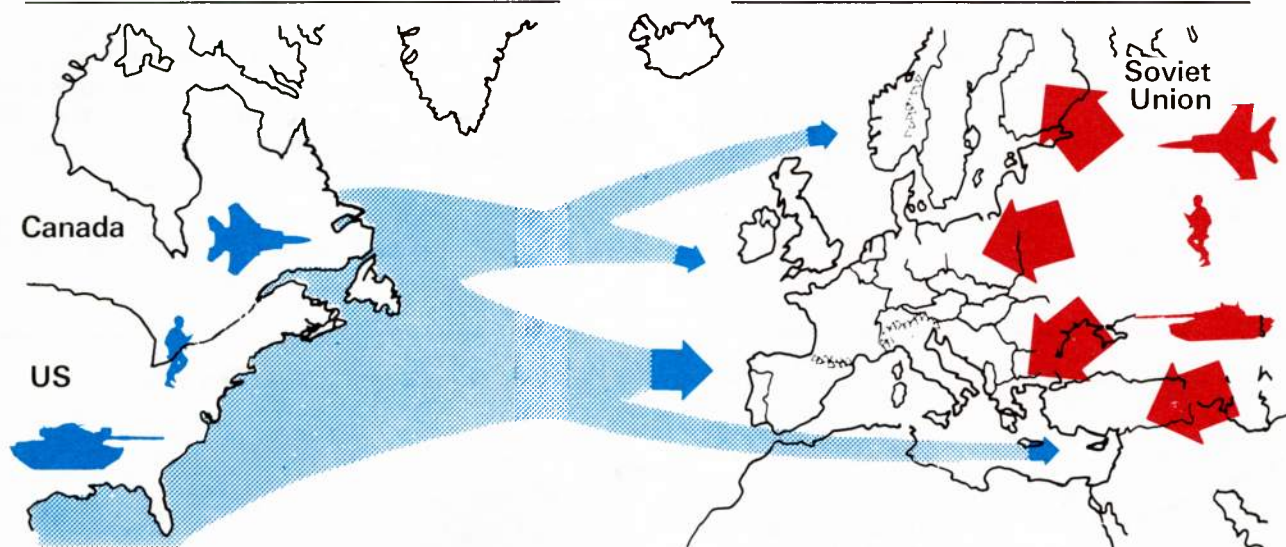
* Includes rapidly deployable and POMCUS Forces. Includes those U.S. Forces whose equipment is stored in Europe and high-readiness Soviet Forces located in the Baltic, Belorussian, Carpathian, Odessa, Kiev, and North Caucasus military districts. Also includes separate Soviet airborne divisions. All Soviet forces in the Leningrad and Transcaucasus military districts and NSWP mobilization bases are considered in place. Excludes artillery divisions.

** France and Spain are not part of the NATO integrated military command structure and are not included.

NATO-Warsaw Pact Reinforcement

6,000 km From North America

650 km From Western Borders of Soviet Union



As of 30 September 1986

FIGURE III-4

Comparisons of NATO and Warsaw Pact forces in Europe are displayed in Figures III-5 through III-8.

Trends in ground forces continue to favor the Warsaw Pact. The Warsaw Pact advantage in tanks continues at more than two-to-one, and its advantage in artillery, mortars, and rocket systems is even greater than that. The Warsaw Pact maintains large numbers of air defense systems in Europe, and the ratio of these systems to NATO tactical air units is increasing.

NATO continues to have an advantage over the Warsaw Pact in numbers of tactical air-to-ground systems, but still faces a significant numerical disadvantage in air-to-air fighters. Although the qualitative advantage of NATO's tactical air weapon systems helps offset imbalances in total numbers of aircraft, aircraft survivability remains a major NATO concern. The lack of a NATO identification system (NIS), which includes an improved identification friend or foe (IFF) capability, hampers the employment of NATO's air defense aircraft. Agreement on the use of the operating frequencies has been achieved; however, until the equipment is fielded, airspace control will remain a difficult problem. Also, the Warsaw Pact has a greater number of hardened shelters for its aircraft than does NATO. Actions continue within the Alliance to expedite the aircraft shelter program.

Modernization programs have allowed NATO naval forces to maintain an overall advantage over the Warsaw Pact; nevertheless, Soviet naval forces remain capable of threatening US and allied forces operating in the maritime approaches to Europe and of posing a threat to reinforcement and resupply shipping in the Atlantic Ocean.

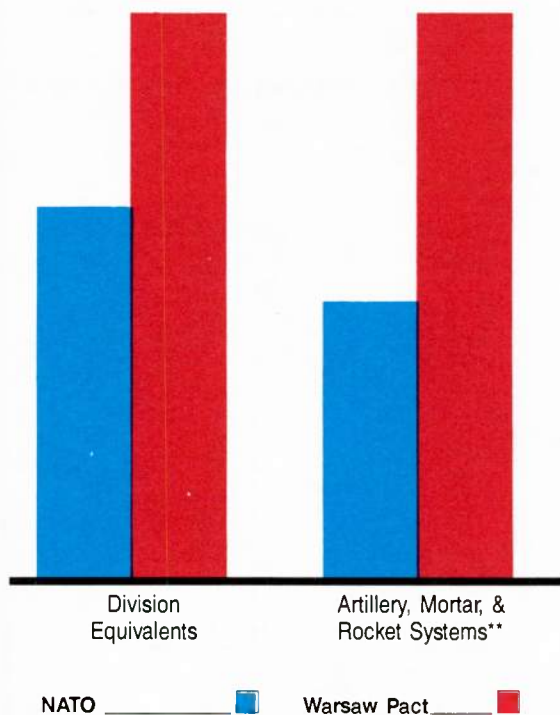
The successful defense of the NATO Alliance remains highly sensitive to the time available for mobilization, early decisions by NATO political authorities, force allocations, en route survivability, and the adequacy of munitions and other consumables. Critical to the ability of the United States to reinforce the European theater will be the availability and sustainability of such bases as Iceland and the Azores along with its ability to protect and defend Atlantic, Caribbean, and Mediterranean sea lines of communication (SLOCs).

Middle East and Southwest Asia

The security of the Middle East and Southwest Asia is vital to the economic health of the Free World and, consequently, to the security of the United States. Regional stability, Free World access to oil resources, and the limitation of Soviet influence remain important US objectives. Figure III-9 identifies current areas of concern.

NATO-Warsaw Pact Ground Force Balance*

(Mobilized)



* Fully mobilized—includes North American reinforcements and all Warsaw Pact forces located west of the Ural mountains. Excludes artillery divisions.

** Artillery, mortar and rocket systems include 100mm and above only.

As of 30 September 1986

FIGURE III-5

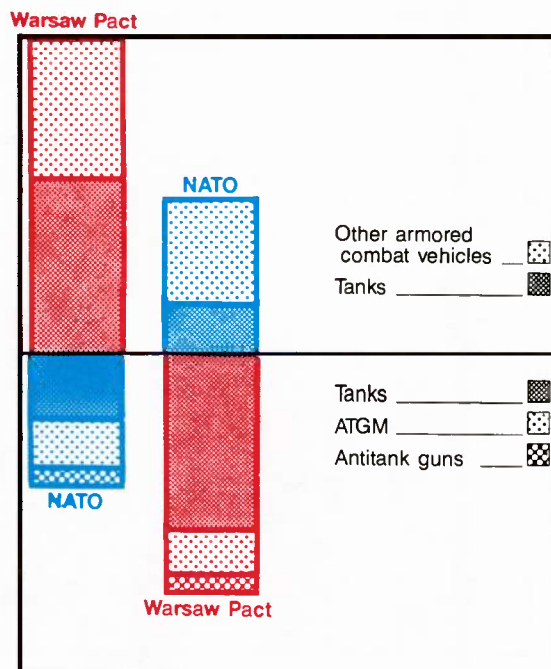
To accomplish its objectives in the region, the United States is involved in diplomatic initiatives, selected security assistance, and multinational peace-keeping efforts to provide a strong deterrent stance (Figure III-10). In recognition of major external threats, the United States is continuing to improve its capability for deploying forces to the region should the need arise.

Threats to the political stability and the free flow of oil within this region are numerous and complex. Local disputes continue to draw regional factions into armed conflict, and terrorist actions remain a significant challenge.

The region is marked by the ongoing Arab-Israeli conflict, the internal conflicts in Sudan, the Peo-

NATO-Warsaw Pact Armor and Antiarmor Systems*

(Mobilized)



* Fully mobilized—includes North American reinforcements and all Warsaw Pact forces located west of the Ural mountains. Excludes artillery divisions.

As of 30 September 1986

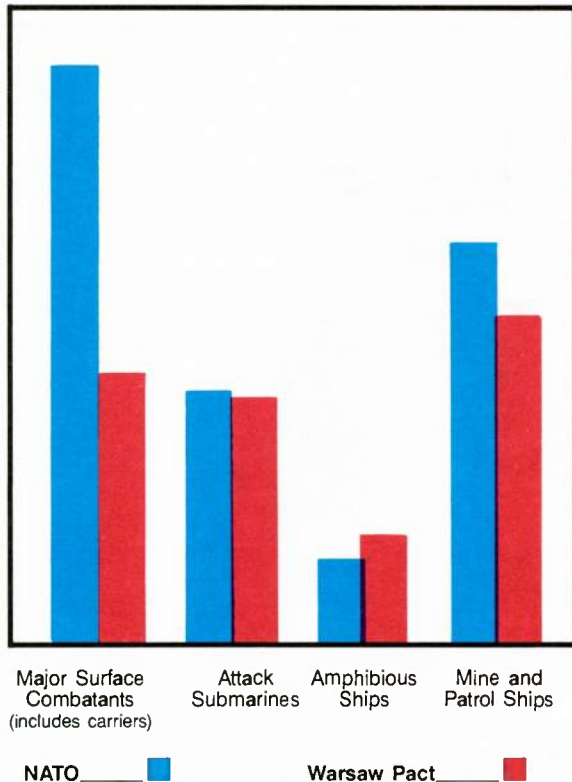
FIGURE III-6

ple's Democratic Republic of Yemen, Ethiopia, and Soviet-occupied Afghanistan. The Arab-Israeli conflict continues, although some small steps have been taken to reach an accommodation, as in the Taba dispute. Several Arab states remain approachable in an attempt to establish a framework for peace, but other rejectionist Arab states continue actively sponsoring terrorism and the isolation/elimination of Israel. Much work remains to establish a climate in the Middle East where the legitimate rights of all parties, including the Palestinians, can be equitably addressed. However, the most imminent regional threat is posed by the Iran-Iraq war. In the past year, the scope and intensity of the war has widened. The escalating trend by both parties toward attacking targets of increasing economic value poses a real threat to US and allied interests in the region.

Soviet forces facing Iran and Eastern Turkey are reorganized as a major offensive force of some 30

NATO-Warsaw Pact Naval Force Balance*

(Mobilized)



* (U) Warsaw Pact figures include units assigned to the Soviet Northern, Baltic, and Black Sea Fleets and Caspian Flotilla, and to the navies of Bulgaria, the German Democratic Republic, Poland, and Romania. Reserve units are excluded. Attack Submarines include SSGN, SSG, SSN, and SS. Soviet Pacific Ocean Fleet ships are excluded.

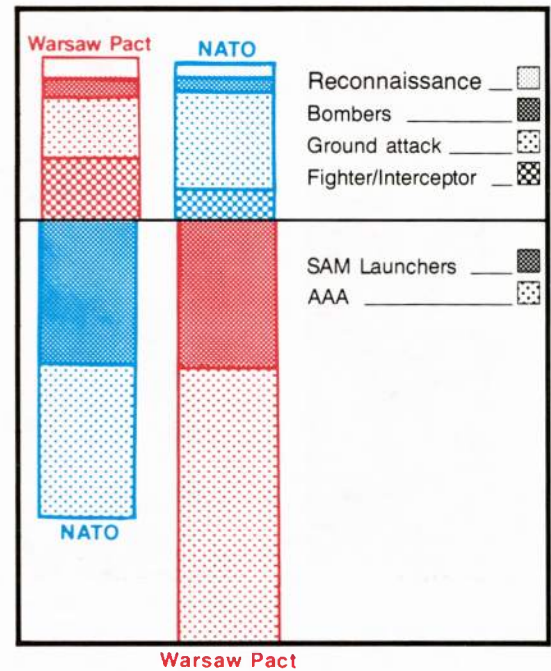
As of 30 September 1986

FIGURE III-7

divisions, 5,400 tanks, and 965 tactical aircraft. These forces are controlled by an operational high command — theatre of military operations (TVD) — that includes 116,000 Soviet forces occupying Afghanistan and facing Pakistan. In Afghanistan, Soviet occupation and oppression continue with large-scale combat operations conducted against local civilians as well as the resistance forces. Forced population relocations and violations of the sovereign borders of neighboring states also contribute to severe regional tensions that cannot be resolved until Soviet forces are withdrawn. The Soviets have sought to extend their influence in the region through major military assistance programs complemented by diplomatic efforts. They have a

NATO-Warsaw Pact Air and Air Defense Systems

(Mobilized)



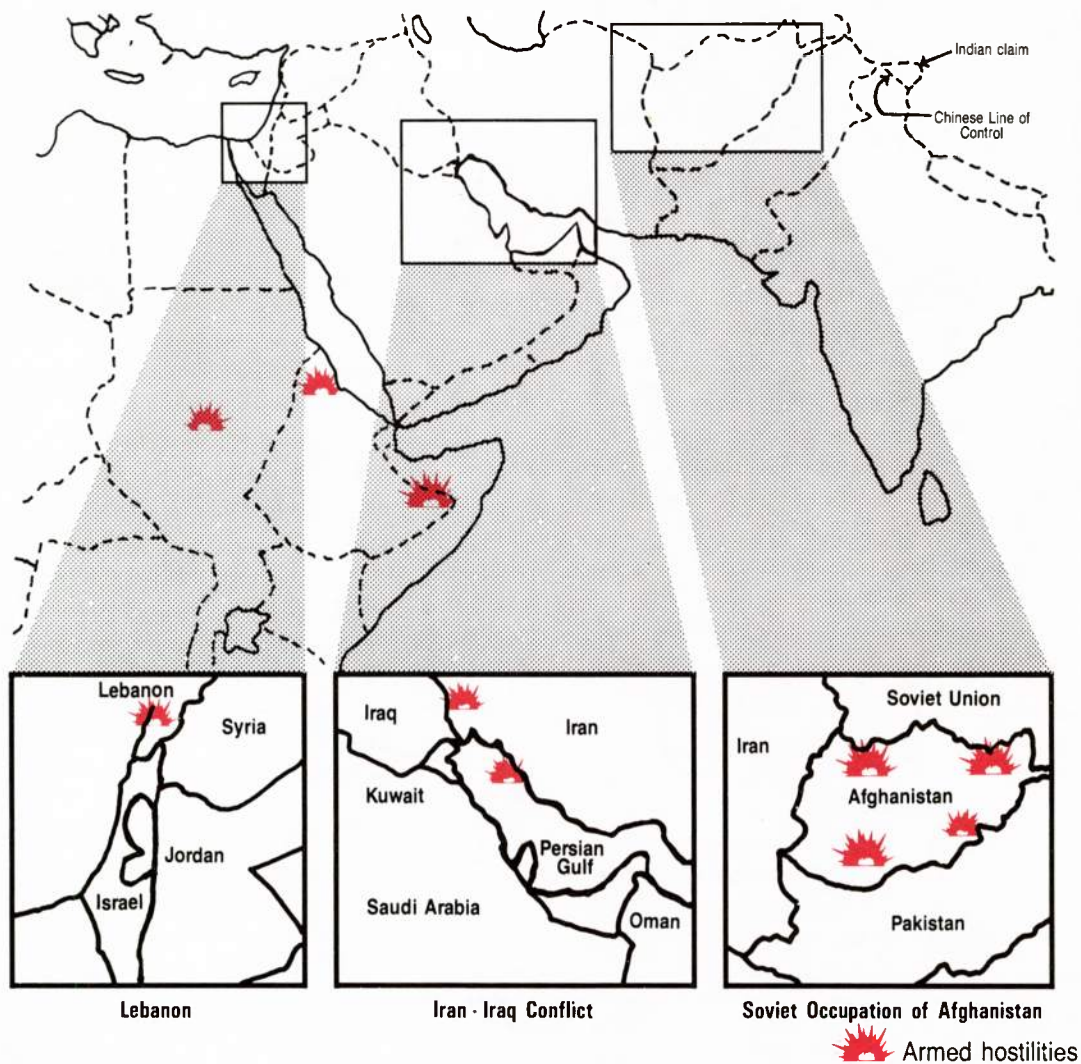
As of 30 September 1986

FIGURE III-8

dominant role in Ethiopia and the People's Democratic Republic of Yemen, including access rights that provide facilities and anchorages for a permanent Soviet naval presence in the Arabian Sea.

The United States participates in a number of programs to promote peace and stability in the region. Security assistance is provided to friendly nations in order to build up their capabilities to protect themselves and to help deter intraregional conflict. The United States continues to maintain naval forces in the Persian Gulf and Indian Ocean, and US ground and air forces periodically conduct exercises with nations of the region. US allies, such as France and the United Kingdom, also provide security assistance and a limited military presence. The Commander in Chief, US Central Command (USCINCCENT), is responsible for coordinating all US military activities in the Southwest Asia region. A forward headquarters element of US Central Command (USCENTCOM) continues to operate from a US Navy ship in the Persian Gulf area. Figure III-11 shows selected forces present in the Middle East/Southwest Asia region. In the Indian Ocean, the Commander-in-Chief, US

Areas of Concern Middle East–Southwest Asia



As of 30 September 1986

FIGURE III-9

Pacific Command (USCINCPAC) maintains its Naval Support Facility and pre-positioned force at Diego Garcia near the strategic sea lines of communication to and from the Persian Gulf.

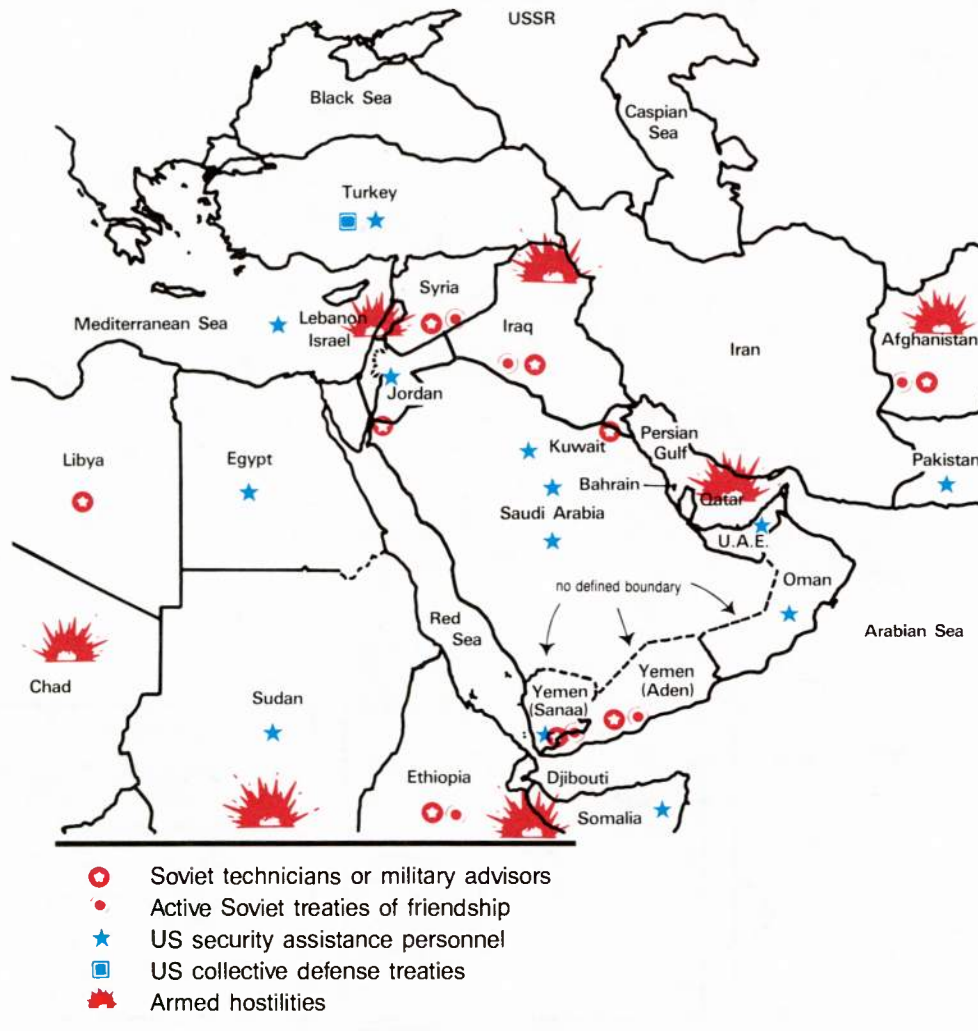
Pacific

The Pacific continues to be an area of vital importance to the United States. The region encompasses more than half the world's surface area, harbors over half the total population, and accounts for more trade with the US than any other region. US security interests in the Asian-Pacific region in-

clude supporting internal defense efforts, strengthening collective defense with allies, promoting regional stability, maintaining strong economic ties, and maintaining free access to and within the area.

Although the balance of power places the Soviet Union on the strategic defense in Asia, increased Soviet abilities to project military forces into the Pacific region pose a significant threat to US and allied interests. Figure III-12 shows the disposition of selected military forces in the region. Strong Soviet land forces remain on the Sino-Soviet border, and

Middle East and Southwest Asia



As of 30 September 1986

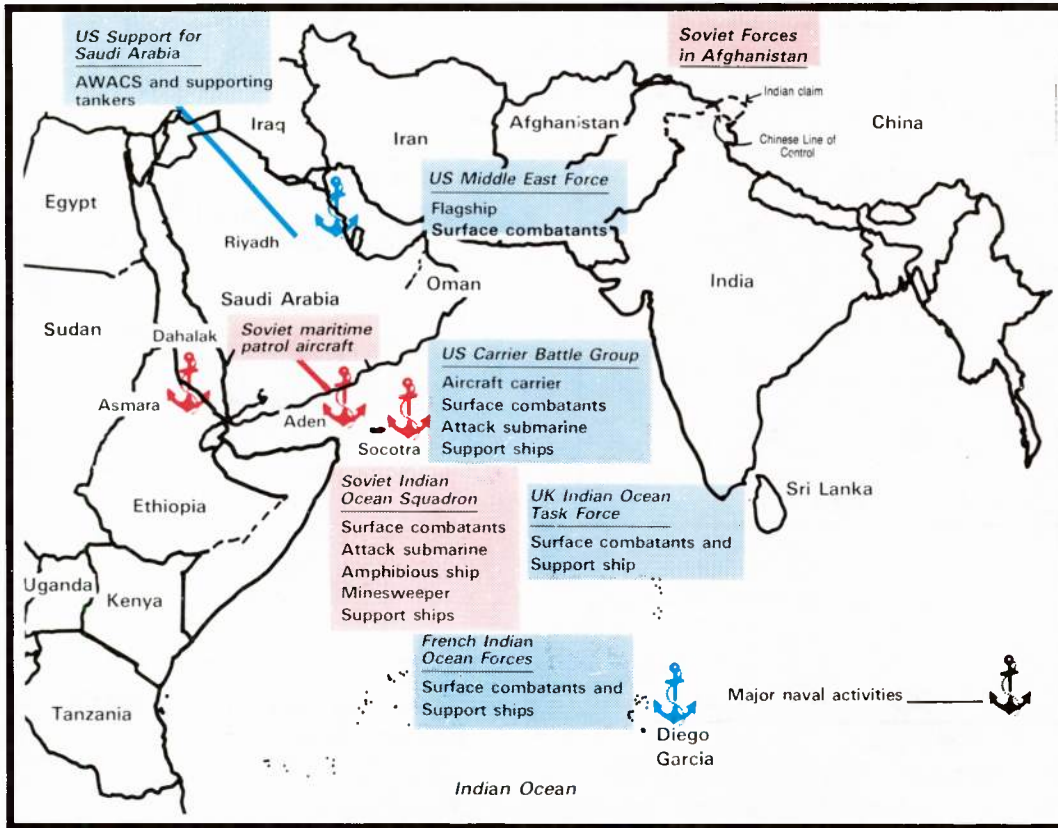
FIGURE III-10

Soviet naval forces are available for employment in the Pacific. The continued improvement of Soviet forces, the basing of missiles in the Far East Military District and persistent Soviet efforts to secure naval access to the Pacific Ocean increase the threat to Japan and other Northeast Asian nations. The continuing development of the first true Soviet naval and air base outside the Warsaw Pact at Cam Ranh Bay, Vietnam, has improved the Soviet ability to reconnoiter and interdict Pacific and Indian Ocean SLOCs and respond to regional crises in the Indian Ocean and South Pacific. The North Korean Armed Forces continue to prepare for a military reunification of the Korean peninsula should circumstances prove favorable. North Korea, supported by the Soviets,

continues to modernize its armed forces. Acquisition of FLOGGER aircraft and SA-3 missiles will improve North Korean air defense capabilities. In Southeast Asia, Vietnam's armed forces, with over one million men under arms, are larger than the total armed forces of the Association of South East Asian Nations (ASEAN) states and remain the region's primary destabilizing influence. Soviet economic and military support has allowed Vietnam to improve its military capabilities. Nearly 150,000 Vietnamese troops currently occupy Cambodia, threatening the security of Thailand's border areas.

A common interest among the United States and its Asian-Pacific allies and friends is to promote

Allied-Soviet Presence in Southwest Asia



As of 30 September 1986

FIGURE III-11

peace and stability in the region. The growing threat requires close defense cooperation and collective security arrangements with our allies, and it requires the full utilization of our own in-place reserve forces. The United States has bilateral security agreements with Japan, the Republic of Korea (ROK), Thailand, and the Philippines and continues bilateral defense cooperation with Australia.

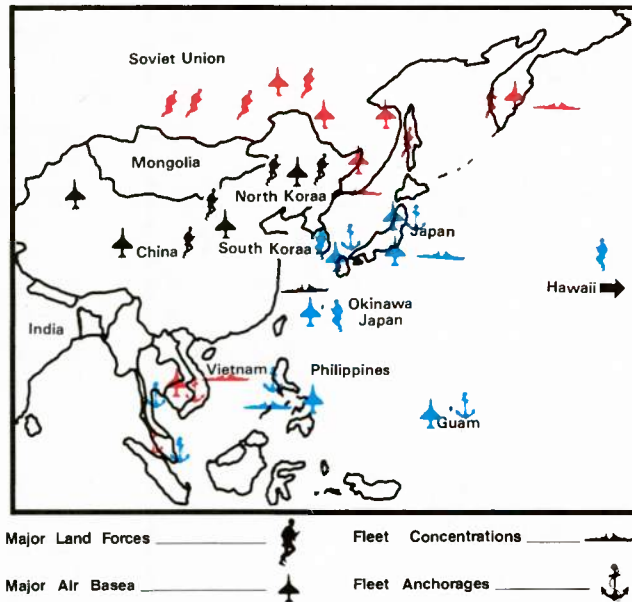
The Australia, New Zealand, and the United States (ANZUS) Organization, continues to provide a framework for United States and Australian defense cooperation in the Western and Southern Pacific. Although the ANZUS Treaty remains an important part of the interlocking system of Western alliances, current differences with the New Zealand Government have resulted in the US suspending its security obligations to New Zealand.

The well-trained ROK forces are becoming increasingly self-sufficient in their capability to de-

fend against aggression from the north, but South Korea is still dependent upon US support, both operationally and through pre-positioned war reserve material, to deter or counter an attack. The United States continues to deploy a ground division and combat air forces within the country, and US naval units in the Western Pacific can respond quickly if needed. Figure III-13 compares the major forces on the Korean peninsula. The ROK provides extensive support to forward-based US units, and the forces of the two countries are integrated into a single command structure, the Combined Forces Command. Combined US-ROK military training is conducted through day-to-day activities and annual exercises. Major exercises, such as TEAM SPIRIT, demonstrate allied cooperation and US reinforcement potential.

Japan remains key to regional stability by virtue of its strategic location, economic strength, and self-defense capability. The Japanese Self-Defense Forces are increasingly well-equipped and well-trained. Al-

Major Power Balance in East Asia and the Pacific



As of 30 September 1986

FIGURE III-12

though Japan's military posture continues to require strong security linkages to the US, its defense budgets are increasing in recognition of the growing threats and acknowledgement of responsibility for conducting defense of its SLOCs out to 1,000 nautical miles (nm). US bases in Japan play a vital role in complementing Japan's defenses and providing operational and logistic bases for US regional security efforts.

Building a stable relationship and cooperating in China's modernization are important elements of US strategy for the region. The PRC is gradually improving its critical defensive security capabilities while pursuing national modernization. China is pursuing an independent foreign policy, but even limited US-PRC military cooperation can enhance China's security and promote a stable regional environment. Continuing the US role in China's modernization and supporting China's gradual incorporation into regional and world interaction strengthens the credibility and presence of the United States.

The United States maintains a close and long-standing bilateral defense relationship with the Philippines and has strategically important air and naval facilities there. The Philippine government faces

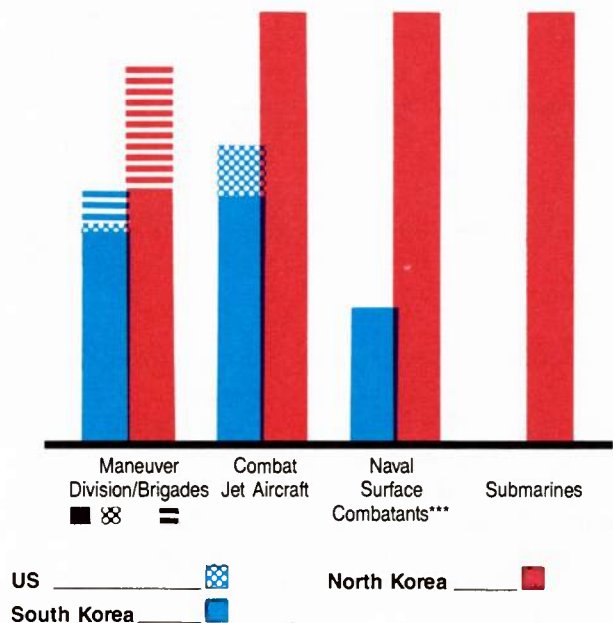
demanding political and economic challenges, along with a persistent and uncompromising threat from local insurgents. US economic and military assistance to the Government of the Philippines should be directed toward fostering the political, military, and economic reforms necessary to ensure a stable, Western-oriented Philippines.

Latin America

Latin America, particularly the Caribbean Basin and Panama Canal, is a vital US security concern. Over 50 percent of US trade and many strategic materials transit Caribbean waters. Substantial NATO reinforcements and material would use these SLOCs in the event of a conflict in Europe. US access to oil in the region is important in peacetime and would be vital in wartime. US and allied interests continue to be threatened by insurgencies in the region and by Soviet, Cuban, and Nicaraguan efforts to exploit instability. The impact of illicit narcotics presents a significant threat to the United States and Latin American countries. In some instances, dollar

Comparison of US-South Korean Forces and North Korean Forces

(Mobilized)



As of 30 September 1986

FIGURE III-13

proceeds from the sale of illegal drugs have been used to purchase weapons for insurgencies supported by Cuba and Nicaragua.

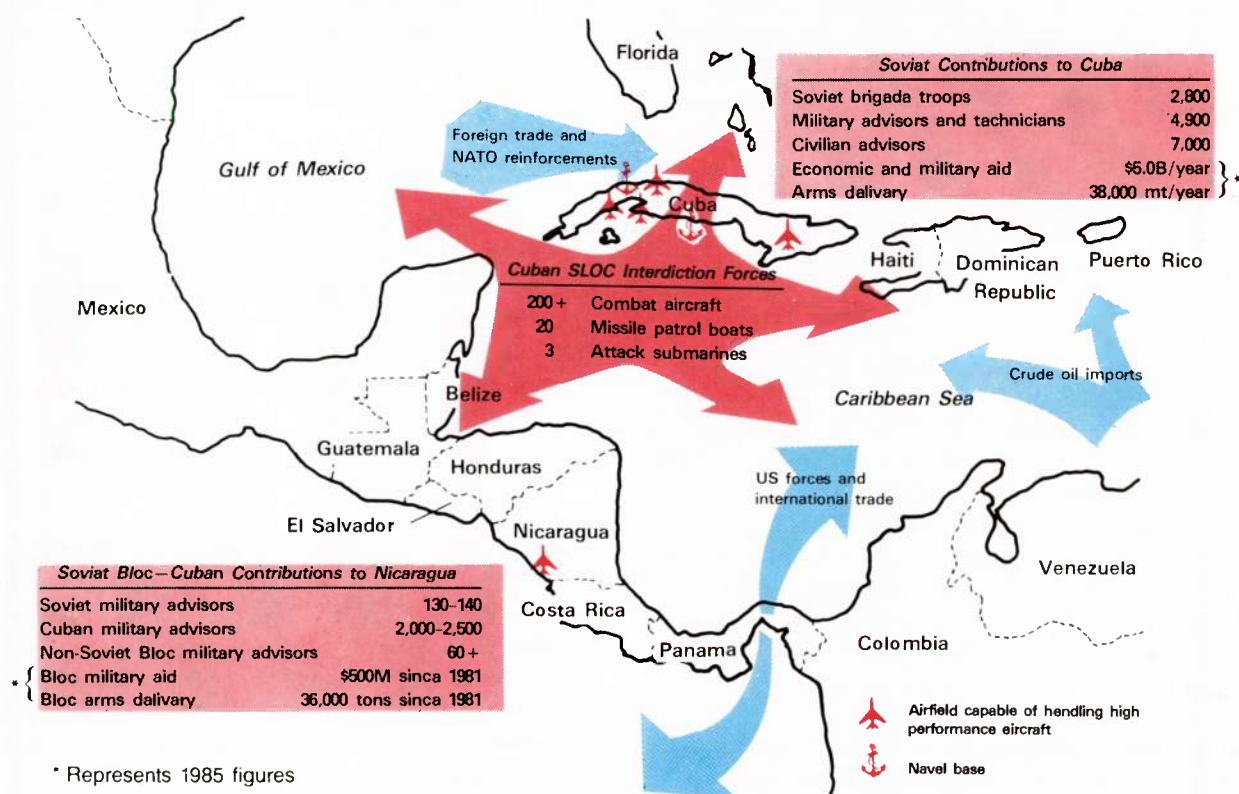
The Soviet Union is attempting to foment as much unrest as possible. Working through Cuba and Nicaragua, the Soviet Union hopes to force the United States to divert attention to an area that, in the past, has not been a serious security challenge. The Soviet Union provides Cuba extensive financial support and has a combat brigade, an intelligence collection facility, advisors, and technicians there. The Soviets also provide military aid to selected countries in the region, either directly or using client-states such as Cuba, East European nations, or North Korea as conduits.

Cuba continues to have the largest army in the region, and is growing steadily in air and naval strength. Bolstered by Soviet aid, Cuba supports a number of insurgent movements by providing training, advisors, technicians, and substantial amounts of military equipment. Cuba's military strength and

hostile posture would provide a direct threat to US SLOCs in a global conflict as shown in Figure III-14.

Although Cuba is an important base for Soviet involvement in the Western Hemisphere, Nicaragua provides unique opportunities to establish a mainland center of Soviet influence in Central and South America that can threaten recent democratic trends, erode US influence in the region, and divert US resources from areas of greater strategic value to the Soviets. Nicaragua, following the pattern set 25 years ago in Cuba, is a regional sanctuary and prime source for spreading insurgency throughout Central and South America. With Soviet and Cuban assistance, the Nicaraguan armed forces have expanded over eightfold in the last 5 years, making them the largest, most powerful armed forces in the history of Central America. This inordinate growth in conventional capability has upset the balance of power, decreased regional stability, and provides a secure mainland base for the support of subversive activities throughout the region (Figure III-15). The further consolidation of Sandinista power supports an

Soviet-Cuban Presence in Latin America



As of 30 September 1986

FIGURE III-14

Conventional Forces in Central America

	<i>Costa Rica</i>	<i>Nicaragua</i>	<i>Honduras</i>
Personnel (Thousands) . .	8	120*	22**
Tanks	0	150	0
Armored Vehicles	0	200	99
Artillery (53mm & up) . . .	0	146	24
Air Defense Artillery	0	200 +	30
Aircraft	10	89***	101

* Includes active duty forces, inactive militia and reserves as well as National Police

** Includes 5,000 police, 2,000 Air Force and 600-700 Navy

*** Includes transportation aircraft that perform militarily associated missions

As of 30 September 1986

FIGURE III-15

expanding Soviet penetration into Latin America that could conceivably result in additional Soviet facilities in proximity to the United States. The continued presence of Soviet military and technical advisors in Peru also poses a threat to US security interests. The presence of Soviet naval surface action groups in the Caribbean along with continued deployments of Soviet long-range reconnaissance and antisubmarine warfare aircraft to Cuba remains a concern.

The United States and a vast majority of its Latin American allies have a common interest in promoting regional peace and stability. The success of this interest is dependent on an ability to consistently apply sufficient forces and resources, prevail in an environment of low-intensity conflict, and present a clearly understood perception that the US and its allies are capable and willing to respond in a manner appropriate to the intensity of the problem. To improve regional stability, the US must help with the development of responsive pluralistic societies that are not vulnerable to insurgencies. The US also must encourage and assist Latin American military institutions in adopting professional, apolitical roles that support democratic development and a respect for human rights while protecting their national sovereignty. Military-to-military relations must be promoted through a system of interactions with Latin American militaries to improve coordination, the exchange of views, understanding and cooper-

ation. The sharing of intelligence and training in areas such as civil defense, civic action, internal security, psychological operations, and military engineering and medicine are counters to low-intensity threats. Military assistance is helping countries such as El Salvador and Haiti cope with externally supported insurgencies and internal security problems respectively.

In addition, exercises are conducted with friendly armed forces of the region to improve combined capabilities for defense and host-country self-sufficiency. Exercises improve host-country defensive capabilities, reassure democratic governments of US support, contribute directly to enhanced US military readiness, and increase allied confidence by support of defensive interests in Latin America. The forward deployment of US forces in Panama and other periodic force deployments emphasize the US commitment to the region.

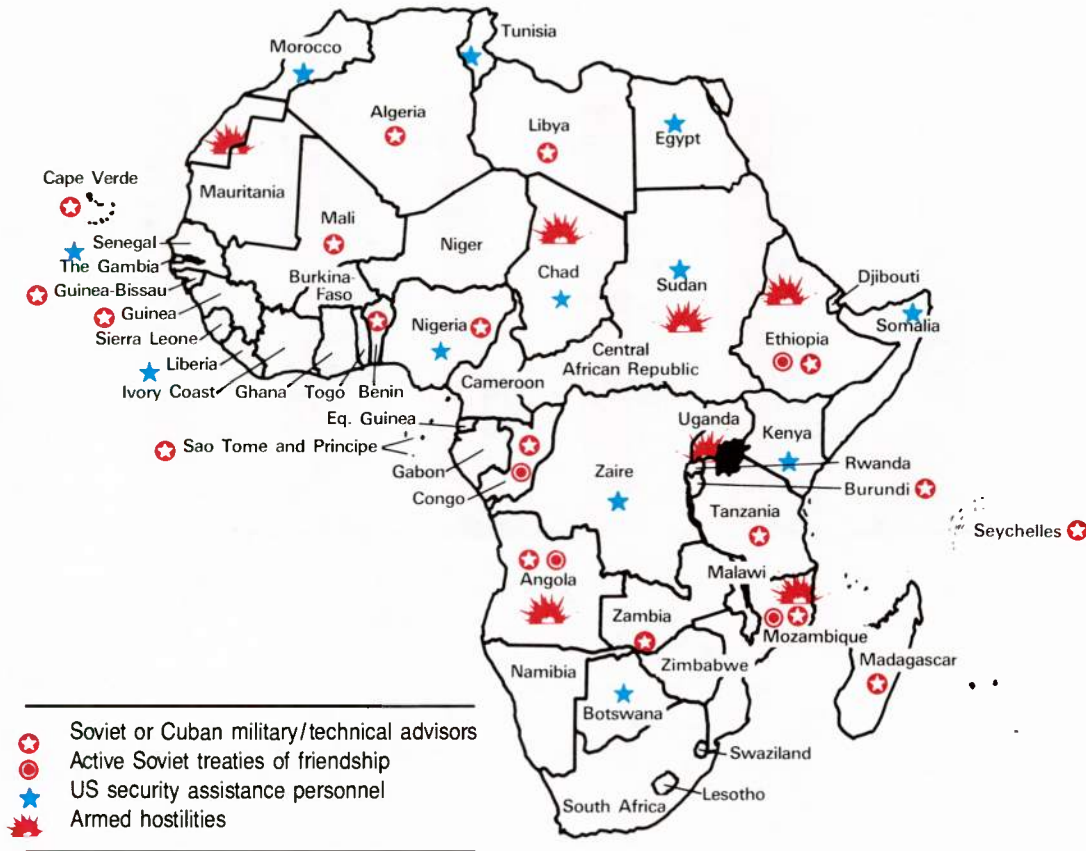
The United States is strongly committed in support of democracy in Latin America. A comprehensive security assistance program is required to counter Soviet adventurism and expansionism, and the projected levels are clearly inadequate. The US commitment is to promote democracy, development, defense, and national and regional dialogue in an effort to enhance peace, prosperity, and stability.

Africa

US security interests in Africa stem from the strategic location of many African countries along important air and sea lines of communication, excellent port and air facilities, and strategic resources. The Soviets and their surrogates view Africa as an area where their own influence can be increased and the West's decreased. Libya's Qadhafi also desires to spread revolution to neighboring African states. The factors for instability in Africa make the continent particularly vulnerable to interference from foreign revolutionaries to foment unrest and gain influence.

Around the Horn of Africa, the presence of Cuban forces and Soviet advisors in Ethiopia aggravates tensions (Figure III-16). Internal power struggles in Sudan and civil unrest in South Africa pose additional stability challenges in the region. Elsewhere, the presence of Cuban forces (35,000 personnel) and approximately 1,000 Soviet advisors in a divided Angola continues to be an obstacle to efforts to improve stability in southern Africa. US interests require support of former colonial powers in providing

Africa



As of 30 September 1986

FIGURE III-16

security assistance to their former colonies and in helping African nations with development needs. Many of these issues cannot be solved militarily. Broad-based US assistance is essential in the face of natural disasters such as drought and locust infestation and the active interference of the Soviet Union, Libya, and Cuba. Only through long-term consistent support can the unity and self-sufficiency of African states be achieved.

MARITIME ENVIRONMENT

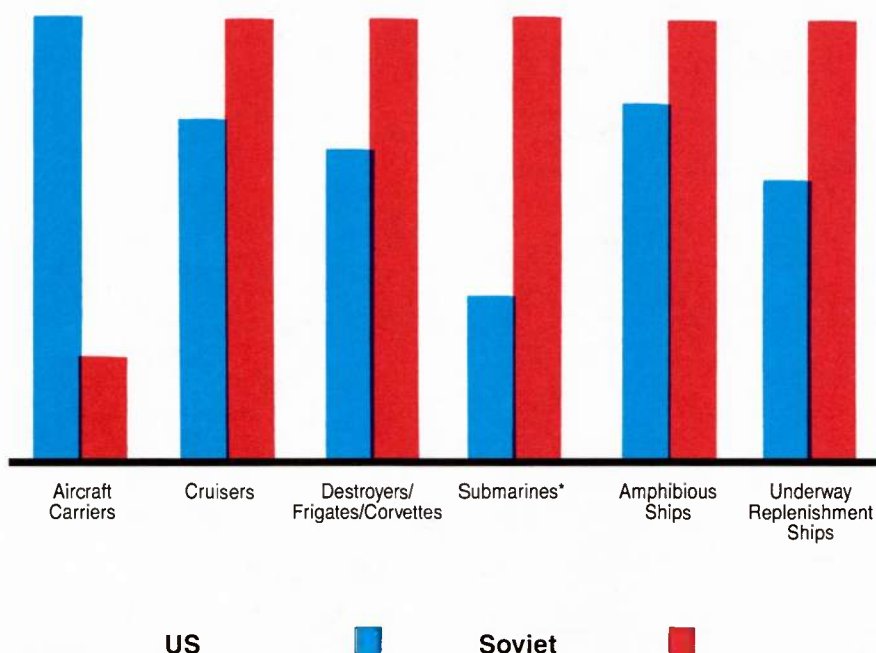
The ability to deploy and reinforce US forces in support of overseas interests and to ensure the uninterrupted flow of strategic materials is an essential element of US military power. For these reasons, the US Navy maintains forces capable of seeking out and destroying enemy naval forces, maintaining local air and sea control, projecting forces ashore, supporting

ground forces, and transporting forces and supplies. The maritime balance, therefore, must be viewed from a global perspective.

The Soviet Navy, while receiving less priority than Soviet rocket and land forces, continues to evolve into a balanced force capable of performing sea control missions in waters contiguous to the USSR and sea denial operations. Figures III-17 to III-20 compare selected US and Soviet naval trends. The Soviets are introducing nuclear-powered warships with greater firepower and endurance into their surface fleet. The introduction of a larger aircraft carrier in the early 1990s will be a significant improvement over the KIEV-class and will enhance the Soviet capability for open-ocean operations.

Soviet cruisers and guided missile destroyers joining the fleet have advanced antiship, antisubmarine,

US-Soviet Principal Naval Forces



* Excluding ballistic missile units, SSAN, SSA, SSQN, SSQ, SSUN and SST. Reserve units not included

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FIGURE III-17

and antiair weapon systems. The expansion and modernization of the general purpose submarine force includes the addition of new classes of nuclear-powered attack submarines (SSNs). Improved Soviet Naval Aviation (SNA) land-based bombers pose an increasing threat to US and allied surface ships. US Navy surface forces still possess a significant advantage over the Soviet Navy in open-ocean anti-surface warfare. US land-based aircraft can also provide assistance in defending the sea lines of communication. P-3, B-52, and other aircraft with the capability to deliver mines and launch HARPOON anti-ship missiles now provide added support against enemy surface targets. Land-based tankers and fighters operating in conjunction with Airborne Warning and Control Systems (AWACS) provide additional capability against the SNA threat.

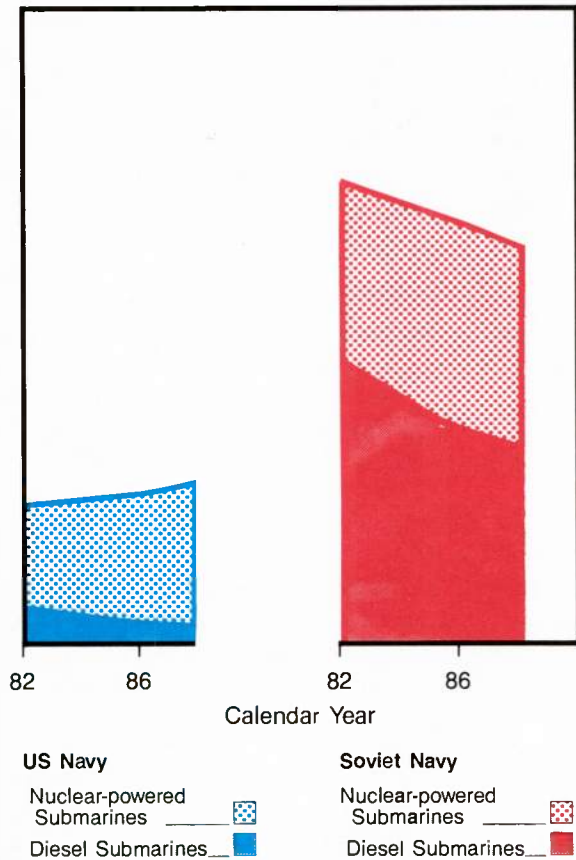
US naval capabilities will continue to lead the Soviets. The US Navy will maintain its open-ocean superiority and continue to improve its capability to operate in high-threat areas while performing

missions in support of allies and forces ashore. Soviet naval forces will continue to be constrained by geography and lack of sustainability.

SECURITY ASSISTANCE

Security assistance programs contribute to US national security objectives by assisting allies and friends to meet their defense needs and supporting collective security efforts. Security assistance is an essential element of foreign policy and a cost-effective way to build positive government-to-government relations. It is administered by the Department of State even though the Department of Defense is responsible for implementing the program. By sharing costs and effort, many countries can achieve a level of mutual security that they could not attain independently. By strengthening US allies and friends, security assistance programs also serve as an economy-of-force measure that allows the United States to concentrate its available forces in areas of greatest threat. For these reasons, security assistance is an integral part of US military strategy.

US-Soviet General Purpose Submarines*



* Excluding ballistic missile units

As of 30 September 1986

FIGURE III-18

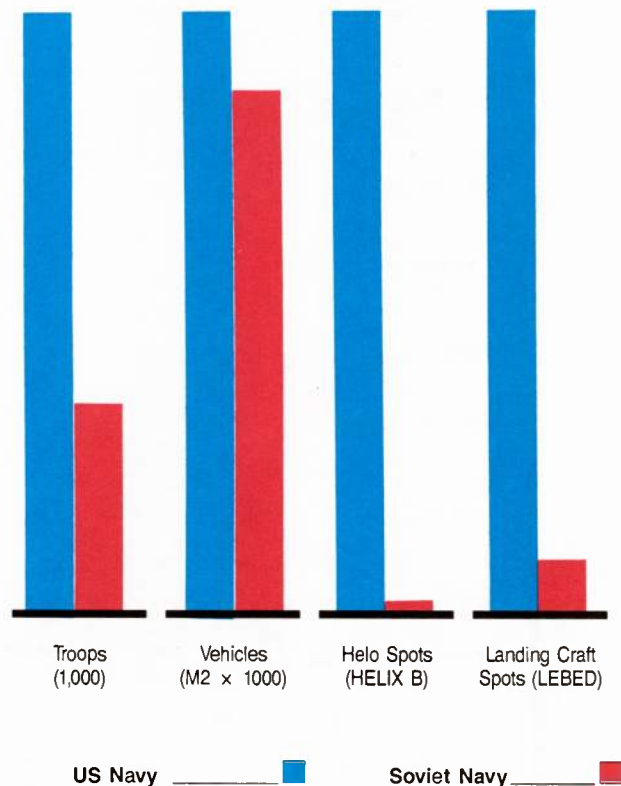
Security Assistance Objectives

The primary military objectives of security assistance are to assist countries in preserving their independence; promote regional stability; help obtain base rights, overseas facilities, and transit rights; ensure access to critical raw materials; and provide a means to expand US influence.

Elements of Security Assistance

The major components of security assistance are the Foreign Military Sales (FMS) Program, the FMS Credit (FMSCR) Program, the Military Assistance Program (MAP), the International Military Education and Training Program (IMET), the Economic Support Fund (ESF), and Peacekeeping Operations (PKO).

US-Soviet Amphibious Lift Capability-CY 1986



As of 30 September 1986

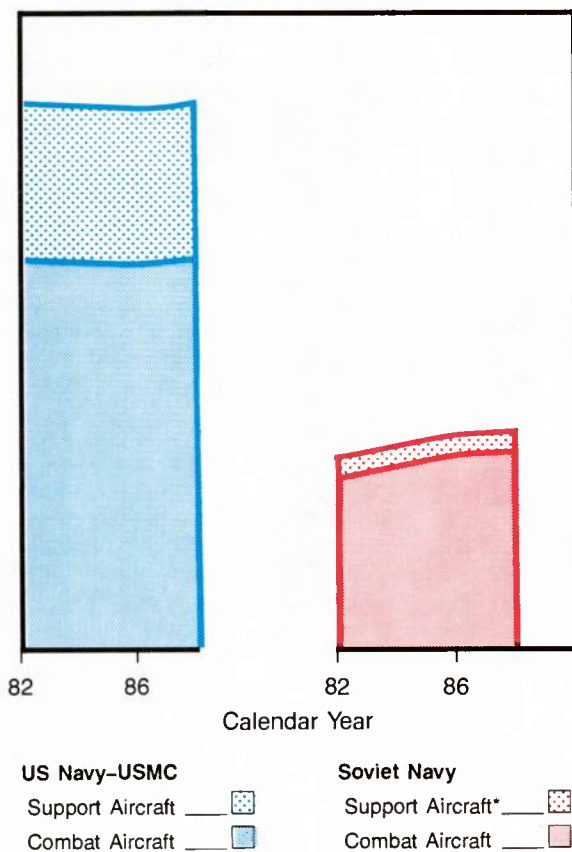
FIGURE III-19

Of the four elements, FMSCR, MAP, IMET and ESF, the mix of program elements will vary from one country to the next. Annually, a very careful analysis of the recipient country's needs is conducted by a combined team of senior country officials, US country team members, CINC staff, and Washington agencies. The resulting security assistance program recommended to Congress is tailored for the individual country. Some may require a substantial measure of FMSCR or MAP. Today, there is not enough of either in the overall program approved by Congress.

Foreign Military Sales and Foreign Military Sales Credit Programs

The FMS Program enables eligible governments to purchase defense equipment, services, and training from the United States on a cash basis. FMSCR is available to countries proposed by the

US-Soviet Naval Aviation Aircraft



* Excludes Trainers and Transports.

As of 30 September 1986

FIGURE III-20

President and meeting legislated provisions established by Congress. FMSCR has been included in the budget and all loans are made directly by the US Government to recipient countries. For eligible countries, a portion of this credit is available as low-interest concessionary loans. Over 80 percent of the proposed fiscal year (FY) 1987 military security assistance budget would be allocated to FMSCR.

The Military Assistance Program

This grant program provides an account for designated countries that may be used to obtain defense equipment and selected services. MAP funds allow certain economically disadvantaged countries to improve their security and ability to contribute to

collective defense. The FY 1987 MAP allocation of \$900 million represents eleven percent of the total security assistance program budget appropriated. This program is intended to enable the United States to assist certain needy countries by further improving their security and ability to contribute to collective defense without adding to their debt burden.

The International Military Education and Training Program

The IMET Program provides training to foreign military and certain foreign government-sponsored civilians on a grant basis. The IMET Program consists of formal courses, orientation tours, and on-the-job training. This program has greatly expanded US contacts with foreign governments, whose representatives are trained by US personnel and exposed to the American people, culture, and policies. IMET students frequently assume leadership and management roles in their armed forces and elsewhere in their governments.

The FY 1987 IMET proposal remains about one percent of the total military security assistance budget. Figure III-21 depicts expenditures and numbers of students who have attended US military-sponsored training under IMET over the past six years. Since FY 1984, modernization programs have required that an increased percentage of IMET funds be used to support the training of pilots and similarly skilled technical personnel. While modernization programs have resulted in a higher average cost per student, IMET enhances collective defense at a relatively low

Worldwide IMET Expenditures

Students Trained in US

FY	Expenditures* (in millions)	Students Trained	Cost Per Student
80	\$24.9	3,545	\$6,996
81	28.7	4,836	5,935
82	46.2	6,317	7,314
83	46.0	6,861	6,705
84	51.5	5,967	8,631
85	56.2	5,880	9,557
86	52.2	6,394	8,228

* Actual dollars/not adjusted for inflation

As of 30 September 1986

FIGURE III-21

cost to the United States by providing urgently required training to foreign forces.

Economic Support Fund

The ESF provides economic assistance on a grant or low cost loan basis to selected countries having special political and security interest to the United States. This very important Agency for International Development (AID) program is designed to help correct the economic problems of countries by funding and encouraging creation of growth industries. In many instances, popular grievances, and low-intensity conflict can be averted through economic stabilization and growth.

Peacekeeping Operations

PKO enable the United States to participate in multinational operations necessary to help prevent international conflicts. PKO were established to provide for that portion of security assistance devoted to programs such as the Multinational Force and Observers and the US contribution to the UN Truce Supervision Organization (UNTSO) in Palestine.

Security Assistance Initiatives

Over the past few years, legislative initiatives have been introduced to increase the flexibility and effectiveness of the security assistance program. These initiatives were designed to provide more flexibility in planning, production, and delivery, thus making security assistance a more responsive tool of US national security objectives.

Soviet Security Assistance

Weapon transfers continue to be an important Soviet means of projecting influence. Over the past five years, Soviet arms sales agreements have totaled \$79 billion. Although Soviet arms agreements are sometimes directed toward disrupting regional stability, recipients have been attracted by favorable financial terms and quick delivery. In recent years, the sale of military equipment has become a more important source of hard currency and commodities for the Soviet Union. In several instances, Soviet weapon transfers have provided a means of acquiring base access rights abroad. Weapon transfers also provide an entree for Soviet advisors into the recipient's military establishment, allowing them to exert influence through control of training, maintenance, and spare parts and the sale of newer equipment.

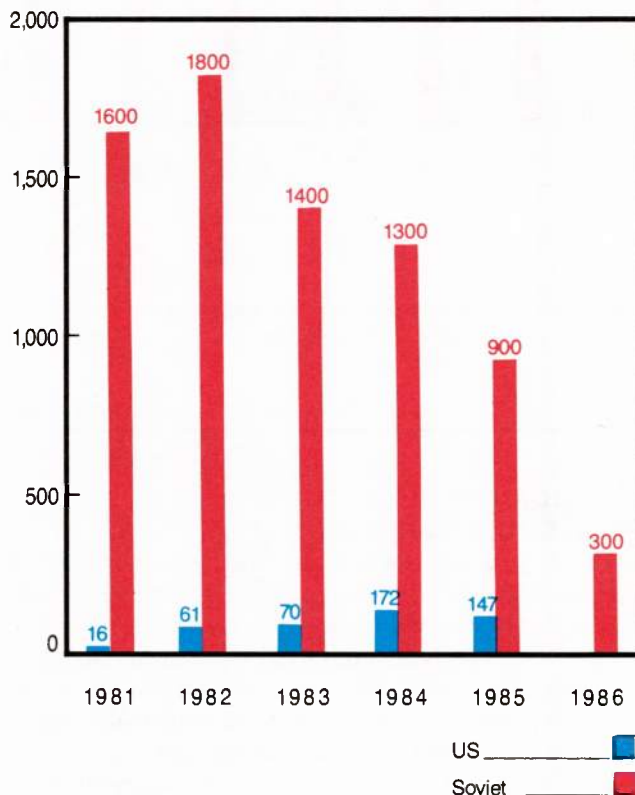
Since 1955, nearly 80,000 military personnel from less-developed countries have been trained in the

Soviet Union and Eastern Europe. In 1986, approximately 21,500 Soviet military advisors and technicians were stationed in nearly 30 non-Warsaw Pact countries where they played a central role in organizing, training, and influencing client armed forces.

The Soviet Union continues to provide a significant amount of military aid to countries in Central America, the Caribbean Basin (Figure III-22), and Africa (Figure III-23). The Soviets view the Middle East, Africa, and Southwest Asia as regions of great strategic importance and have maintained an especially high level of military assistance in those regions (Figure III-24). These charts compare Soviet military assistance deliveries with US programs.

Military Assistance Deliveries to Countries in Central America and Caribbean Basin*

Millions of Dollars**



* Does not include Mexico and Venezuela

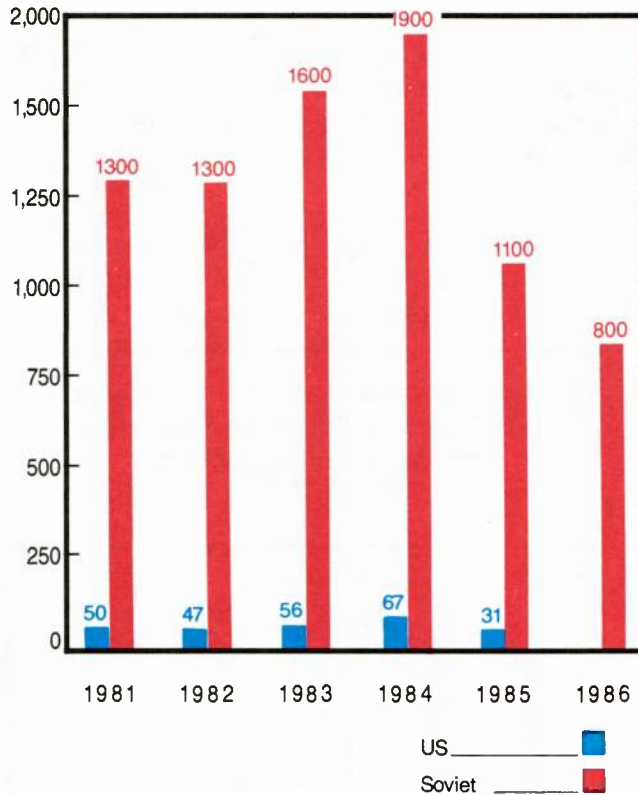
** Numbers and types of equipment delivered have not changed; revised costs reflect current information

As of 30 September 1986

FIGURE III-22

Military Assistance Deliveries to Countries in Central, South and West Africa

Millions of Dollars*



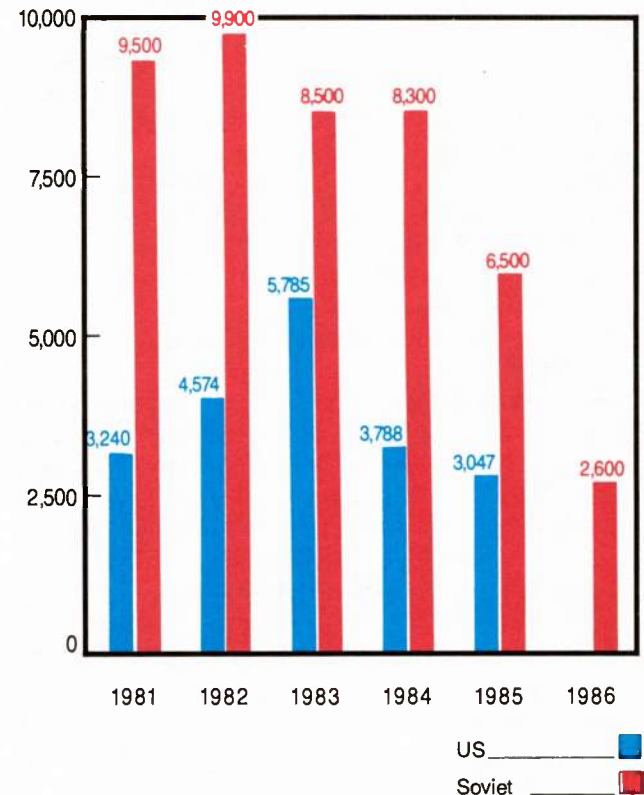
* Numbers and types of equipment delivered have not changed; revised costs reflect current information.

As of 30 September 1986

FIGURE III-23

Military Assistance Deliveries to Countries in Middle East, North Africa, and Southwest Asia*

Millions of Dollars**



* Includes Israel and Egypt

** Numbers and types of equipment delivered have not changed; revised costs reflect current information.

As of 30 September 1986

FIGURE III-24

Outlook for US Security Assistance Funding

Funding of US security assistance is presently in a major transition. From the beginning of President Reagan's tenure, this aspect of national security has experienced steady annual funding increases through FY 1984. Beginning in FY 1985 and continuing in FY 1986, the political momentum for a balanced budget was one of several factors causing security assistance funding for friendly nations to level off (Figure III-25).

FY 1986 Funding

Figure III-26 shows the final outcome of the FY 1986 security assistance budget. Israel and Egypt received a little over half the funds, and the remaining 100 nations included in the program received

47 percent. These countries purchased a great deal of security protection that directly benefitted the US at a fraction of the cost for comparable direct US force participation.

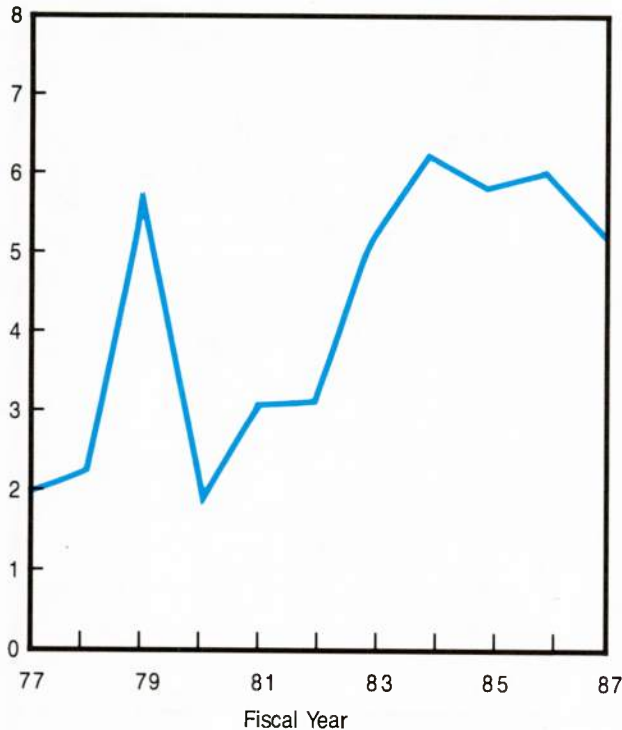
FY 1987 Funding

The proposed FY 1987 security assistance budget Presidential request represents an increase over the FY 1986 budget because of Third World requirements where Soviet presence has increased (see previous figures). As in FY 1986, the security assistance budget request reflects a balanced consideration of the needs of friends, allies, and US objectives (Figure III-27).

Security Assistance Budget*

(Current \$)

Billions of Dollars



* FMSCR, IMET, and MAP

As of 30 September 1986

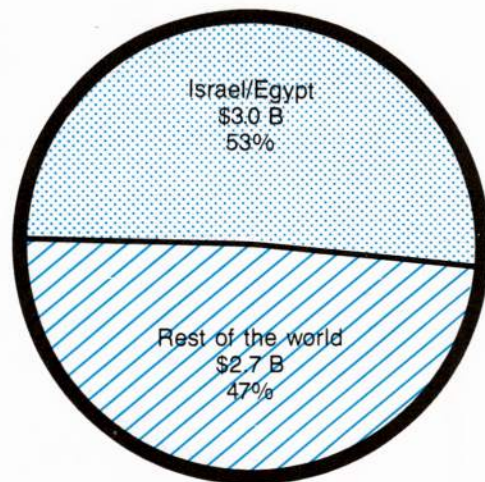
FIGURE III-25

Figure III-28 shows the distribution of the 1987 budget appropriated by Congress. The budget request of \$6.6 billion has been reduced to \$4.9 billion while the earmarks for Israel and Egypt remain constant at \$3.1 billion. Additional earmarks are set for Pakistan, Turkey and Greece which total \$1.1 billion. After subtracting earmarked money, only \$700 million remains for distribution to other countries around the globe. This drastic funding reduction will cause significant external security problems for the US.

Implications of Severely Reduced Security Assistance Funding

The security assistance program buys a great deal in terms of security for the United States. In Central America, the successful US policy of actively checking Communist aggression can not remain viable in the face of a massive cutback in security assistance

FY 1986 Security Assistance Budget



As of 30 September 1986

FIGURE III-26

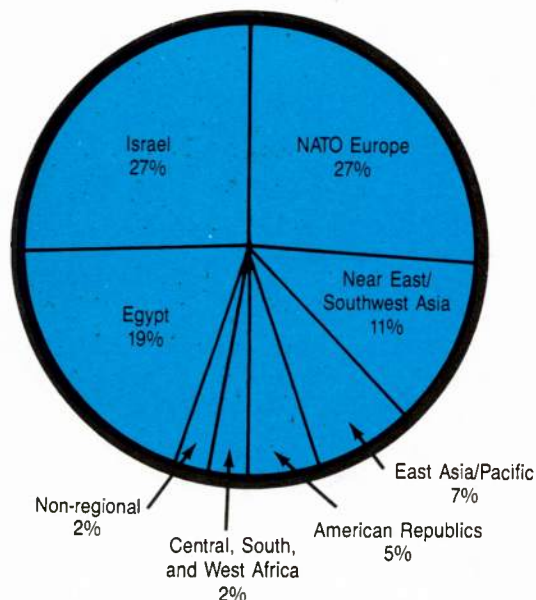
funds to El Salvador, Honduras, and other friendly democracies in the region. This large cut threatens to erase US gains from previous years.

In the Caribbean, there is an adverse impact on modest gains made over the past several years. Additionally, there is a concomitant degradation in the countries' ability to support US campaigns against illegal drug trafficking.

In the southern tier of Europe, Portuguese, Spanish, Turkish and Greek force modernization programs, all vital to NATO, are interrupted. A large cut cancels very modest security assistance programs that provide vital support to long-time friends and the one alternative to Soviet funds and political penetration. In the Mideast, the massive US security and economic investment in Egypt has been hazarded by cuts to other nations in the region, such as Sudan and Somalia. Successful Libyan and Soviet inroads, particularly in Sudan, would pose a great security risk to Egypt. A similar situation exists in Southeast Asia, where a heavily funded Soviet client, Vietnam, threatens Thailand. Again, security assistance funding serves

FY 1987 Security Assistance Administration Proposal*

(6.6 Billion \$)



* Estimated Administration proposal (includes FMSCR, IMET, and MAP)
As of 30 September 1986

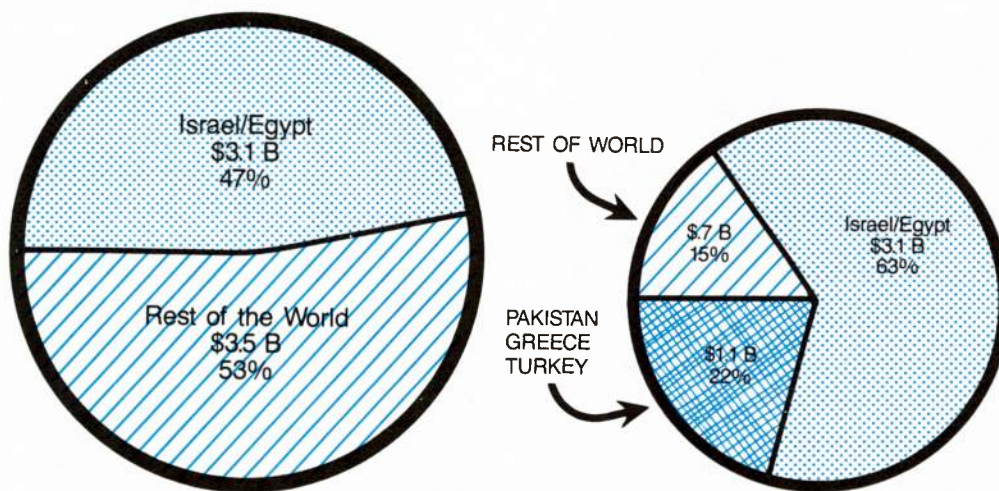
FIGURE III-27

as a counterweight to such Soviet overtures, and drastically reducing already modest funding severely impacts on US efforts.

FY 1988 and Beyond

The future of the security assistance program and whether it can continue to advance coalition defense objectives is questionable. The austerity imposed by the current US budget and other limitations imposed on the program by Congress have left serious concerns about the focus of the program. The extent of the negative impact from a budget that will prevent meeting financial assistance commitments to security assistance recipients cannot be assessed.

FY 1987 Security Assistance Budget



FY 1987 Presidential Request (\$6.6 B)

FY 1987 Congressional Appropriations (\$4.9 B)

As of 30 September 1986

FIGURE III-28

CHAPTER IV. NUCLEAR FORCES

INTRODUCTION

The overall military balance is critical to US and allied security. Adverse trends in either nuclear or conventional force capabilities lessen assurance that aggression against US and allied interests can be deterred and increase the risks of coercion. Although significant progress has been made toward redressing trends unfavorable to the West, this progress has not compensated fully for decades of high Soviet investment in force expansion and modernization. US modernization programs are designed to improve the capabilities of the nuclear deterrent through the development and deployment of technologically advanced systems. The continued modernization of the US Triad, coupled with improvements in warning systems, command, control, and communication capabilities, and theater nuclear forces, is essential to reverse adverse trends in the nuclear balance and increases stability.

This chapter compares the strategic and nonstrategic nuclear forces of the Soviet Union with those of the United States.

STRATEGIC FORCES

The Soviets' strategic doctrine holds that they must be prepared to survive and prevail in a nuclear war even though they realize the catastrophic consequences. The sustained Soviet strategic buildup during the past two decades is a product of this thinking. Figure IV-1 shows that the Soviets hold a distinct advantage in the number of ballistic missiles. The Soviets continue to improve all aspects of their strategic offensive forces and supporting elements; they have significantly modernized command and control capabilities and continue to build up their strategic defenses. The Soviets are convinced that strategic nuclear forces will deter attacks on the Soviet Union and reduce the will of others to challenge Soviet political or military actions in general.

The US strategic nuclear posture is based on the Triad, a combination of land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and long-range bombers. The Triad continues to provide a balanced range of offensive retaliatory capabilities. The US nuclear deterrent also includes warning systems and command, control, and communications capabilities that provide connectivity and positive control between the National Command Authorities (NCA) and the strategic forces.

Strategic Offensive Forces *

US		Soviet	
<i>ICBMs</i>			
TITAN _____	7	SS-11 _____	448
MINUTEMAN II _____	450	SS-13 _____	60
MINUTEMAN III _____	547	SS-17 _____	150
PEACEKEEPER _____	2	SS-18 _____	308
	1,006	SS-19 _____	360
		SS-25 _____	72
			1,398
<i>SLBMs</i>			
POSEIDON (C-3) _____	256	SS-N-5 _____	39
TRIDENT I** (C-4) _____	384	SS-N-6 _____	304
	640	SS-N-8 _____	292
		SS-N-17 _____	12
		SS-N-18 _____	224
		SS-N-20** _____	80
		SS-N-23** _____	48
			999
<i>Bombers</i>			
B-52G _____	167	BEAR _____	150
B-52H _____	96	BISON _____	15
FB-111 _____	61	BACKFIRE _____	275
B-1B _____	18		440
	342		

Approximate Totals

	US	Soviet
Delivery Vehicles		
• Missiles	1,646	2,397
• Bombers	342	440

* Does not include all strategic systems.
** Includes SLBMs potentially carried on TRIDENT, TYPHOON, and DELTA-IV submarines on sea trials

As of 30 September 1986 **FIGURE IV-1**

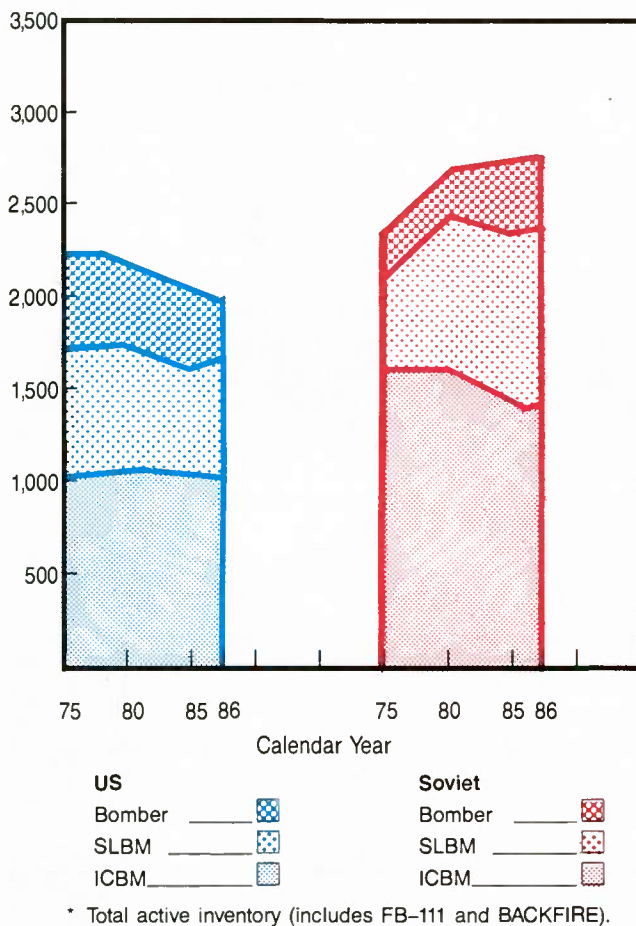
Additionally, strategic defensive forces contribute to deterrence by reducing the potential effectiveness of an attack.

Until such time as the nuclear powers actually phase out offensive ballistic missiles, US and its allies security will continue to depend upon a credible and effective Triad consisting of ICBMs, SLBMs, and

manned bombers. The capability and variety of the US Triad of offensive forces complicate Soviet first strike planning and give the United States the resiliency and flexibility for a measured response to any type of attack. Past US strategic force modernization efforts have not kept pace with the improvements in Soviet forces (Figure IV-2). The strategic modernization program is designed to rectify this situation and requires sustained commitment.

Strategic Forces*

Strategic Nuclear Delivery Vehicles (SNDV's)



As of 30 September 1986

FIGURE IV-2

Strategic Offensive Forces

Strategic Offensive Force Potential

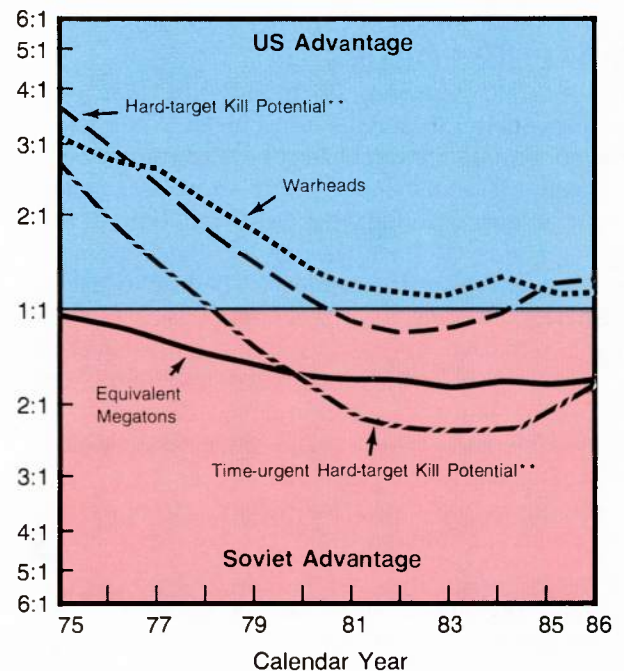
The assessment of the military balance is a complex process involving quantitative analyses as well as

judgments concerning such intangible and unquantifiable factors as leadership, training, and morale. Static force measurements can provide useful comparisons of capabilities but do not adequately reflect the interaction of forces in war. This is especially true in light of ongoing Soviet efforts to offset US strategic improvements by increasing the hardness, defense, and mobility of their forces. Whenever possible, static force comparisons should be complemented by dynamic analyses that attempt to incorporate operational factors and provide a better picture of the military balance.

US and Soviet strategic force potential can be compared by an examination of such static measures as equivalent megatons and numbers of systems. The trends in strategic nuclear force capabilities displayed in Figure IV-3 begin to show a reversal as a result of the strategic modernization program. The relative

Strategic Forces*

Preattack Static Ratio Comparison



* Total active inventory (includes FB-111 and BACKFIRE)

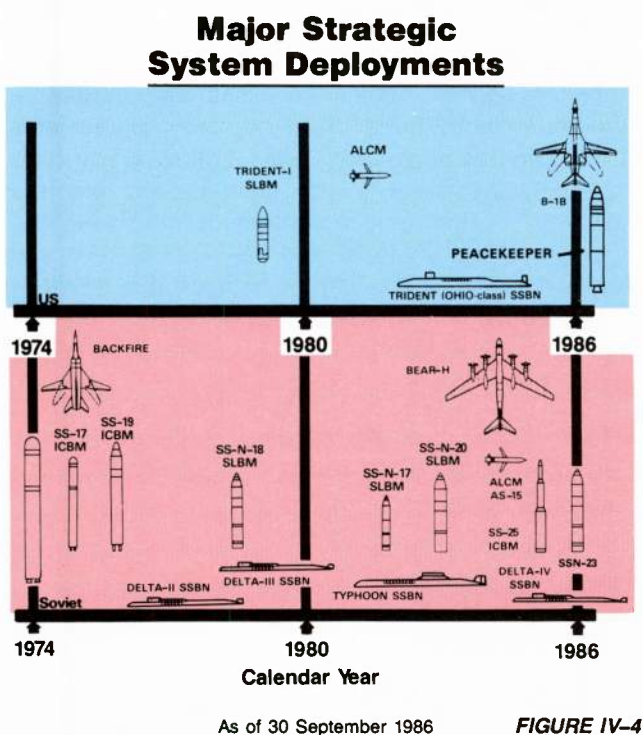
** Hard-target kill potential represents ability to destroy targets reinforced to withstand some effects of a nuclear blast. Calculations are based on potential against identically hardened targets.

As of 30 September 1986

FIGURE IV-3

strategic force capabilities depicted represent a general summation of force attributes. Such measures do not reflect the adequacy of a military force for a specific mission; however, they are useful in describing relative trends.

The principal factors contributing to the favorable Soviet trend are the deployment of fourth- and fifth-generation ICBMs and modernization of their submarine force. This has increased their inventory of high-quality strategic warheads. The Soviet deployments are shown in Figure IV-4. The Soviets have increased ICBM strategic warheads more than threefold over the past decade. During the same period, the number of US strategic warheads increased by a much smaller percentage, with the increase attributable to SLBMs and air-launched cruise missiles (ALCMs) rather than ICBMs.



The predominant system of the Soviet nuclear force is the land-based ICBM. The Soviets have achieved a significant increase in the capability of this force through the deployment of large numbers of high quality reentry vehicles (RVs). Today, the most accurate versions of the SS-18 missiles alone are capable of holding at risk most time-urgent and hardened targets in the United States. Additionally,

the Soviets are mounting a considerable effort to increase strategic force survivability and endurance through mobility. The SS-25 mobile ICBM is only one example of these strategic relocatable targets (SRTs). These SRTs could form the backbone of a significant reserve force capable of eluding US retaliation, thus requiring improved detection capability and Command, Control, Communication, and Intelligence (C³I).

The Soviets are also modernizing their SLBM force. Since 1974, they have deployed four new classes of nuclear-powered ballistic missile submarines (SSBN). The DELTA-II, -III, and -IV classes reflect improvements in submarine and missile system capabilities. The earlier DELTA-I and the DELTA-II carry the SS-N-8 single RV missile; the DELTA-III carries SS-N-18 multiple, independently targetable reentry vehicle (MIRVed) missiles. To date, the Soviets have launched four TYPHOON-class SSBNs, all of which are operational. TYPHOON-class submarines carry 20 SS-N-20 missiles. These missiles are armed with six to nine warheads and have a range of approximately 4,500 nautical miles (nm). All of these newer systems are capable of striking targets throughout most of the United States from Soviet home waters. The DELTA-IV carries 16 MIRVed SS-N-23 missiles. The SS-N-23 may be retrofitted into some DELTA-III. During the past 3 years, the Soviets have intermittently operated DELTA-class SSBNs off both US coasts. The SS-NX-21 long-range cruise missile deployment is probably imminent. These missiles will likely be deployed on submarines for use against US targets as well as against theater targets.



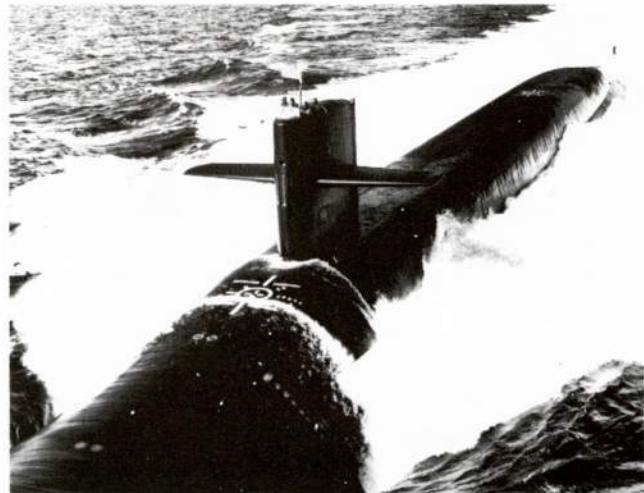
TYPHOON BALLISTIC MISSILE SUBMARINE

The Soviets continue to improve their strategic bomber force. New production BEAR AS-15/ALCM carriers continue to enter the force. Moreover, these ALCM carriers now conduct routine intercontinental training to various points off the North American coast. BACKFIRE bombers are estimated to have the technical capabilities to reach some or all of CONUS depending on various assumed operational factors.



SOVIET BEAR-H

Since the early 1970s, US strategic force improvements have focused primarily on modifications to existing systems. Major improvements to the US ICBM force since the upgrading of the MINUTEMAN silos in 1973 have been the fielding of higher yield warheads for a portion of the MINUTEMAN III force and a forcewide MINUTEMAN III guidance upgrade program, now approximately 85 percent complete. US SLBM capabilities were improved by equipping the entire force with MIRVed missiles. In addition, between 1979 and 1983, 12 POSEIDON submarines were retrofitted with the more accurate, higher yield TRIDENT I (C-4) missile. This longer range SLBM allows expanded patrol areas with shorter travel distance to patrol stations. The C-4 missile provides the United States a limited capability to launch against Soviet targets from US waters. The OHIO-class SSBN, introduced in 1982, is also fitted with C-4 missiles. The majority of the B-52 fleet is now outfitted with 1,584 ALCMs, and aircraft avionics modifications are improving the penetration capability of the B-52 against increasingly dense and sophisticated Soviet air defenses. As strategic modernization progresses, the B-52Hs, in addition to the already modified B-52G will also become cruise missile carriers.



USS ALABAMA (SSBN-731)

Strategic Offensive Force Modernization

The Soviets have more than 30 new strategic offensive systems in various stages of development. Projections for the next decade include new solid-propellant ICBMs, both silo-based and mobile; a liquid propellant SS-18 follow-on; and improvements to the currently deployed ICBMs. Follow-on systems are expected to have greater accuracy and targeting flexibility. SLBM projections include continued deployment of the SS-N-20 and SS-N-23 SLBMs and their follow-ons. The deployment of the BEAR-H and eventually the BLACKJACK-A intercontinental bombers will significantly increase the airbreathing threat; both bombers will carry AS-15 long-range cruise missiles and improved variants or follow-ons to the AS-15, which are expected by the 1990s. The air-breathing threat will also soon include sea-launched cruise missiles.



SOVIET BLACKJACK

The US strategic force modernization program is intended to redress adverse strategic force trends. Continued emphasis is being placed on increasing our capability to attack relocatable targets given the deployment of the SS-25 mobile ICBM, the impending deployment of the SS-X-24, and the projected development and deployment of an expanding array of strategic mobile threats. The deployment of modernized systems will demonstrate US resolve to establish a more stable nuclear balance.

The full deployment of 100 PEACEKEEPER missiles will provide 1,000 highly accurate, time-urgent weapons and a partial answer to our shortfall in prompt, hard-target kill capability. As part of the modernization effort, engineering development has started on a small ICBM. This new missile with its prompt, hard-target kill capability and its low target-value to the Soviets, will complement the PEACEKEEPER. Early basing considerations have focused on mobility as a primary means of enhancing system survivability. Concurrently, the MINUTEMAN force is being modernized to ensure its continued reliability, responsiveness, and supportability.

The TRIDENT SSBN will support the D-5 missile now under development. The D-5 missile will deliver a larger payload with improved accuracy at a range of 4,000nm. The accuracy-payload combination will give the SLBM force a hard-target kill capability at ranges that maintain submarine survivability.

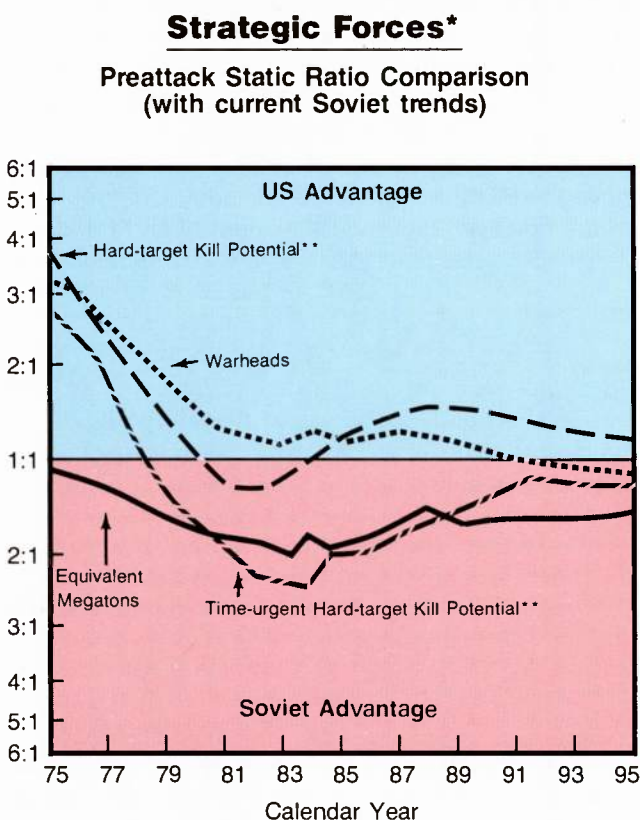
The B-1B is an important Triad modernization program. With its high speed, low-altitude capability, its reduced radar cross-section, and improved electronic countermeasures (ECM) equipment, the



B-1B

B-1B complicates detection and interception by Soviet defenses. The B-1B is designed to penetrate Soviet defenses well into the 1990s. The strategic modernization program also calls for the development of an Advanced Technology Bomber (ATB) with low-observable characteristics. Designing low-observable technologies into both the ATB and the advanced cruise missile will do much to negate or minimize the effects of present and projected Soviet Air Defenses. Plans call for the ATB to deploy in the 1990s to ensure a continued US capability to penetrate Soviet airspace and attack the full range of fixed and relocatable targets.

Figure IV-5 compares static measures of the United States and Soviet strategic offensive force capability for the period 1975-1995 and includes current ac-



* Total active inventory (includes FB-111 and BACKFIRE and deployment of 100 PEACEKEEPERS)

** Hard-target kill potential represents ability to destroy targets reinforced to withstand some effects of a nuclear blast.

Calculations are based on potential against identically hardened targets.

As of 30 September 1986

FIGURE IV-5

curacy estimates for the PEACEKEEPER and SS-18 ICBMs. The Soviet force projections represent a moderate force that is a continuation of current trends not considering any arms control agreements. The US force consists of weapon systems programmed through 1990 plus those systems in the strategic modernization program to be deployed after 1990.

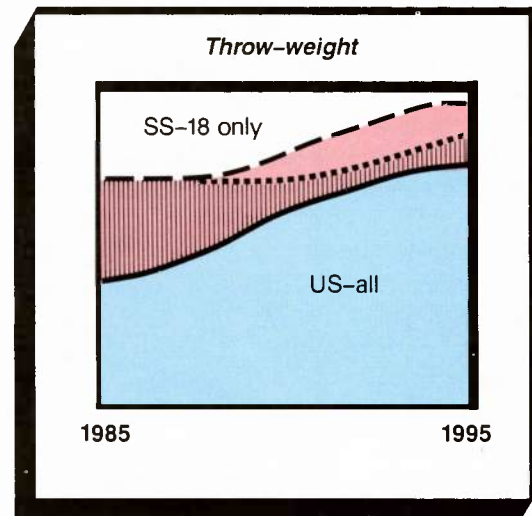
Figure IV-5 shows trends favoring the Soviet Union until the 1980s, at which time the benefits of US modernization programs begin to offset some Soviet advantages. The US advantage in total warheads will continue to decline until the Soviets begin to achieve an advantage in the early 1990s, assuming no arms control agreements. The projected quantitative and qualitative growth in Soviet offensive weapons should continue to be offset by planned and programmed US modernization efforts. The increased effectiveness of the PEACEKEEPER ICBM, TRIDENT D-5, and the small ICBM will act as a counterbalance to the Soviet time-urgent hard-target kill potential (HTKP) represented by the SS-18 force. Even though the United States lost its HTKP advantage in 1981, improvements in US ballistic missiles and bombers and continued deployments of ALCMs will begin to move the HTKP toward a US advantage. It should be noted, however, that the calculation of HTKP did not consider the status of forces at the time of execution or that Soviet ICBM silos are hardened to a greater degree than those of the United States or that Soviet air defenses are far more extensive. In the late 1980s, US deployments of modernized systems should also reverse the trend in equivalent megatons; however, the Soviets will retain an equivalent megatonnage advantage.

The validity of the projections in Figure IV-5 depends upon continued progress in the US strategic force modernization effort and assumes that the Soviets will not deploy forces in excess of current projections. The static measures in Figure IV-5 display the total strategic capabilities of both countries, a comparison that includes many older and less capable systems. Yet, as shown in Figure IV-6, the current Soviet force of 308 SS-18s has more throw-weight potential than the combined force of all current US ICBMs and SLBMs.

Strategic Offensive Force Effectiveness

The Soviets have sought to limit damage to their warfighting capability by hardening ICBM silos to levels well above those of the hardest US silos and deploying new generation missiles designed for

SS-18 Throw-Weight vs Entire US Missile Force (ICBM & SLBM)



— — — SS-18 Forecasted Force
 SS-18 Expanded Force
 ——— US-ALL

As of 30 September 1986

FIGURE IV-6

mobile operation. The Soviets have begun upgrading the Anti-ballistic Missiles (ABM) system deployed around Moscow, prepared a vast network of hardened underground facilities for their key leadership and civilian work force, and planned for dispersal of conventional forces and urban populations. Static measures reflect none of these factors, but they are captured in dynamic comparisons that also examine Soviet improvements in defensive forces, counterforce capabilities, reload and refire capabilities, and wide deployment of strategic offensive systems and multiple basing modes and force vulnerabilities in various scenarios.

Improvements to US forces resulting from the strategic modernization program will help lessen this disparity and contribute to stability.

Command and Control

Soviet Command and Control

The Soviets have deployed extensive and modern command, control, and communications systems to

provide centralized control over their military commands. The Soviets expect to be able to communicate with their forces during a strategic nuclear exchange and to direct all operations. Toward this end, the Soviets have constructed hardened, deep-underground facilities for the primary military authorities. These facilities are equipped with multiple means of communication. Soviet systems emphasize survivability, redundancy, and flexibility and provide extensive internetting of communications from the Soviet high command to lower echelons.

US Command and Control

The credibility of the US strategic deterrent depends on command and control systems that provide positive control for the effective employment of the Triad. US command and control systems require security, speed, flexibility, reliability, survivability, and endurability to assure connectivity before, during, and after a nuclear attack.

Before and during the early stages of an attack, command and control systems must be able to provide timely warning to the NCA and strategic forces that an attack has been initiated. These systems must not only define the nature of the attack to allow appropriate defensive and damage-limiting actions, but must also permit the NCA to direct the appropriate response. Tactical warning and attack assessment (TW/AA) sensors and communications are used to detect and forward hostile attack information to the Nation's primary command centers and the NCA. Highly reliable surveillance systems must provide timely, unambiguous warning of attacking missiles, bombers, and spacecraft.

Effective warning requires the sensing of an attack by at least two different methods in order to increase warning confidence. US ground- and space-based systems are designed to provide the necessary warning and confirm the launch of attacking missiles. The capabilities of many TW/AA systems are constantly improving.

Many systems are vulnerable to high-altitude nuclear effects. Numerous improvements are being introduced in new systems that will reduce communications uncertainties during attack and provide the NCA more effective warning and assessment for force management. Improvements such as jam-resistant secure communications equipment, laser communications data links for satellite systems, secure voice conferencing, low-frequency (LF) to ex-

tremely low-frequency (ELF) communications, and extremely high-frequency (EHF) communications satellites will be fielded.

The Worldwide Military Command and Control System (WWMCCS) provides the means for the NCA, JCS, and commanders of the unified and specified commands (CINCs) to direct and control the operations of US military forces in crises and during conventional or nuclear war. The most survivable element of the WWMCCS is a series of worldwide airborne command posts and communications relay aircraft referred to as the WABNRES (WWMCCS Airborne Resources) system. A replacement World Wide Airborne Command Post (WWABNCP) aircraft and Command, Control, and Communications (C³) suite has been funded to provide improved command, control, and communications during a prolonged nuclear attack. In the event ground systems are damaged or destroyed, the WABNRES provides communications through which strategic nuclear forces can be directed.

The National Emergency Airborne Command Post (NEACP) is the central manager for the WABNRES system. NEACP is based inland to ensure that it can be launched and survive a surprise attack. The addition of automatic data processing, and the expanded use of satellite communications, secure-voice capabilities, and conversion of the NEACP fleet to the E-4B aircraft have increased the ability of this system to support the NCA.



E-4B

To ensure that NCA decisions can reach the force during the critical early stages of an attack, the United States is deploying the Groundwave Emergency Network and the Defense Satellite Communication Systems (DSCS III) and developing MIL-STAR, a new communications satellite. The command and control systems on airborne command posts

are being upgraded to improve performance and to protect against high-altitude nuclear detonation effects. Additionally, an ELF communications system is being developed to improve strategic connectivity to SSBNs.

The Nuclear Planning and Execution System will enhance data processing capabilities for the National Military Command System (NMCS) and CINCs. Deployment of the Nuclear Detonation Detection System on Global Positioning System (GPS) satellites will significantly improve assessment capabilities; however, the launch schedule for GPS satellites has been affected by the Challenger accident.

Strategic Defense

Strategic Defense Forces

The Soviet Union has pursued a full range of strategic defensive programs to protect leaders, preserve vital functions of government, and limit damage from retaliation. The US strategic defensive programs have been less comprehensive and have focused primarily on surveillance, warning, aircraft modernization, and limited air defense. Deployment of effective US strategic defensive systems would enhance deterrence by increasing the Soviets uncertainty about the possible outcomes of nuclear conflict and undermining their confidence in success.

The United States is reexamining the potential contributions of strategic defense toward a more stable deterrent. In the past, US strategic deterrence relied largely upon an assured retaliation capability. Both the Soviet and US strategic forces were relatively secure from a disarming attack. The continued Soviet strategic modernization and buildup threatens this stable environment. Effective US defenses can increase the uncertainty of the outcome of a Soviet preemptive attack and help strengthen deterrence. New technologies must be evaluated for US strategic defense.

Missile Defense

The Soviets continue to modernize their ABM system around Moscow and have a strong development program that could permit relatively rapid deployment of a widespread ABM network supported by a network of radars like the one at Krasnoyarsk. In fact, the recent addition of 3 ABM radars appears to complete the guidance and tracking requirements of such a system. In addition, vigorous Soviet directed-energy research and development efforts could lead

to a ground-based ballistic missile defense (BMD) capability in the 1990s. To complement their BMD efforts, the Soviets have developed an extensive TW/AA capability based on launch detection satellites and over-the-horizon and phased-array radars.

Advances in defensive technology based on research supported by all administrations over the past two decades justify the current research efforts of the Strategic Defense Initiative (SDI). In the 1960s, there were no credible concepts for boost-phase intercept. Today, there are multiple approaches based on both directed-energy concepts and kinetic energy kill mechanisms. Midcourse intercept was hampered in the 1960s by a lack of credible approaches for decoy discrimination, unmanageable signal and data processing loads, the cost per intercept, and the undesirable collateral effects of nuclear weapons used for the interceptor warheads. Multispectral sensing of discriminants, birth-to-death tracking in midcourse, and small hit-to-kill vehicles that promise inexpensive interceptors are among the concepts that appear to offer capabilities that overcome the earlier limitations in midcourse.

In the 1960s, an inability to discriminate against penetration aids (penaids) at high altitudes and limited interceptor performance resulted in very small defended areas for each terminal defense site and gave the offense unacceptable leverage over the number of interceptors needed. Today, technology provides the potential to discriminate at high altitudes, and improved interceptor technologies should allow intercepts at these higher altitudes. When these improvements are coupled with the potential for boost-phase and midcourse intercepts to disrupt pattern attacks, robust terminal defenses seem attainable.

Finally, 1960s' technology in computer hardware and software and signal processing was incapable of supporting battle management of multitiered defense. Today, the rapid advancement of these technologies is believed to permit realization of the complex command and control systems needed.

Although the ABM Treaty allows limited defense of one site, the United States abandoned this approach in the 1970s (Figure IV-7). If reinstituted, an active US defense will require a survivable TW/AA system that provides, in addition to detection and warning, the capability to discriminate weapons from non-threats and the capability to perform battle-management functions.

Defense Against Ballistic Missiles

US

ABM DEFENSE

- None since SAFEGUARD phased out in 1976
- Option for early deployment of terminal defense—hedge against USSR breakout
- Strategic Defense Initiative (1983)—research to determine technical feasibility of multilayered BMD

DIRECTED ENERGY WEAPONS

- Research on Candidate technology under Strategic Defense Initiative

TACTICAL WARNING AND ATTACK ASSESSMENT

- 3 long-range detection and tracking radars (BMEWS)
- Phased-array warning system (PAVE PAWS)
- Perimeter acquisition radar attack characterization system
- Satellites
- COBRA DANE

Soviet

ABM DEFENSE

- Operational system at Moscow since 1968
- Upgrade to the Moscow system operational by 1988
 - New multifunction phased array radar
 - Endo- and exo-atmospheric interceptors
- New early warning, acquisition and tracking radar network under construction
- Systems available for rapid, widespread deployments beyond ABM Treaty

DIRECTED ENERGY WEAPONS

- Vigorous R&D with possible BMD applications in late 1990s
- Program identified for laser BMD
- Charged Particle Beam

TACTICAL WARNING AND ATTACK ASSESSMENT

- Over-the-horizon radars
- Phased-array radars
- Launch detection satellites

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FIGURE IV-7

The current space-based surveillance system relies on sensors aboard satellites. These satellites cover most Soviet SLBM and all ICBM launch areas. Survivability is being improved by various programs.

The current ground-based radars, for example, PAVE PAWS, Perimeter Acquisition Radar Attack Characterization System (PARCS), Ballistic Missile Early Warning System (BMEWS), and COBRA DANE, confirm satellite warning of ICBM attacks from the north and SLBM attacks from normal Soviet submarine operating areas. The activation of two southern PAVE PAWS sites in FY 1987 will complete the radar coverage of likely SLBM approach routes.

BMEWS currently employs equipment based on obsolescent technology that is increasingly difficult to maintain and support. The BMEWS radar at Thule, Greenland, has been upgraded with a two-faced phased-array system and the radar at Fylingdales, United Kingdom, is being upgraded with a three-faced phased-array system. These upgrades will improve range resolution, provide a greater ability to count incoming vehicles, and ensure more accurate impact prediction.



PAVE PAWS RADAR

These improvements will provide a warning capability against the projected Soviet threat. In response to the increasingly time-stressed nature of the aerospace threat, the United States must be capable of evaluating integrated information from strategic intelligence sources and from ballistic missile, atmospheric, and space warning sensors to provide a single assessment and notification of imminent or actual attack on the United States.

Other systems contribute unique capabilities to monitor Soviet nuclear forces. Strategic airborne reconnaissance aircraft carry a variety of sensors to detect ground and air activities. For ocean surveillance, the coordinated efforts of P-3s, submarines, and surface ships with towed arrays, are key to tracking ballistic missile submarines.

Under the SDI, the United States is conducting an intensive research effort focused on advanced defensive technologies capable of defending against ballistic missiles. A number of concepts, involving a wide range of technologies, are being examined. The effort is a research program and does not represent a departure from the fundamental US support for deterrence.

No single concept or technology for the SDI has been identified as most appropriate. Initial research indicates the possible feasibility of increasing stability through employment of a multilayered defense capable of engaging enemy missiles and RVs in all stages of flight (see Figure IV-8). The SDI effort is also examining technologies with potential against shorter range ballistic missiles which could extend protection against nuclear, chemical, biological, and conventional attacks against our allies and deployed US forces.

The SDI is addressing the protection of both civilian and military assets. The research seeks to exploit inevitable technological evolution and is a necessary and prudent response to active Soviet research and development activities in ballistic missile defense.

The Soviet Union has deployed a nuclear armed ABM system around Moscow as permitted under the 1972 ABM Treaty. In addition to this permitted system, the Soviets have tested and deployed critical long leadtime elements, such as the large phased-array radar at Krasnoyarsk, that violate the ABM Treaty and are crucial elements to have in place in order to deploy a territorial ABM system rapidly. The United States, on the other hand, has no deployed ABM system.

In contrast with Soviet actions, the US SDI is a research program being conducted in accordance with the terms of the ABM Treaty and is intended to provide the United States with enough information to determine whether to proceed with the development and deployment of an ABM system. This program provides a prudent technological hedge against a possible Soviet breakout from the ABM Treaty, holds the promise of a better way to deter aggression, to strengthen stability, and to increase US and allied security. The US Space Command assumed the responsibility for BMD planning and requirement development in September 1985.

Phases of a Typical Ballistic Missile

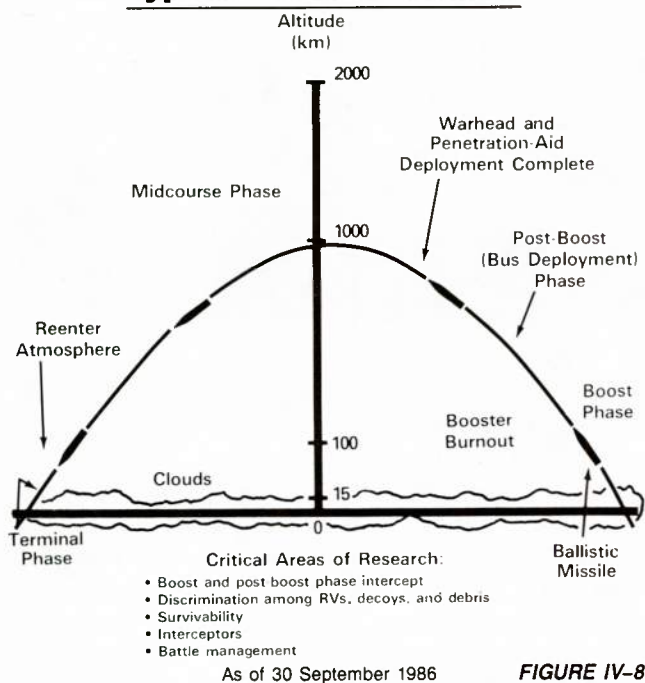


FIGURE IV-8

Air Defense

The Soviets emphasize air defense and continue to upgrade their capabilities. The Soviets have over 4,000 fighter/fighter-interceptors capable of air-to-air combat in defense of the Soviet Union of which approximately 1,200 are dedicated to a strategic defense mission. Deployment of the FOXHOUND, the first Soviet fighter-interceptor to have full lookdown-shootdown and multiple-target engagement capabilities continues. Operational deployment of the FLANKER, the Soviets newest lookdown-shootdown-capable fighter-interceptor occurred in 1986 while deployment of the new FULCRUM continued to gain momentum.

The Soviets have deployed over 9,000 strategic surface-to-air (SAM) missile launchers. Equally important, they continue to develop and deploy improved SAM systems. The SA-10 is estimated to be effective against small, low-altitude targets.



SOVIET FULCRUM

For surveillance of their airspace, the Soviets have deployed early-warning aircraft and over 10,000 search and track radars at over 1,200 sites. The Soviets are also producing and testing the MAINSTAY airborne warning and control aircraft. Forward air defense capabilities will be significantly improved with deployment of MAINSTAY, especially when it operates with lookdown-shootdown-capable aircraft such as the FOXHOUND, FULCRUM, and FLANKER. Soviet air defenses will continue to pose a major challenge for the US bomber force.

The United States and Canada share continental air defense responsibilities under the provisions of the North American Air Defense Agreement. Both nations assign forces to the North American Aerospace Defense Command (NORAD).

Current US air defenses are composed of surveillance radars, Airborne Warning and Control System (AWACS) aircraft, interceptor aircraft, and an integrated command and control system. Deployment of North Warning System (NWS) and over-the-horizon backscatter (OTH-B) radars will improve the detection capability against airbreathing threats. The effectiveness of OTH-B in detecting cruise missiles is promising. OTH-B radars can provide surveillance of potential attack routes from 500 to 1,800 miles. AWACS patrols can provide added coverage until the present Distant Early Warning (DEW) Line radars are replaced by the NWS. The NWS searching north and OTH-B radars searching east, west, and south will provide a capability for tactical warning at ranges that allow increased response time against aircraft and cruise missiles.

Peacetime surveillance of continental airspace has been strengthened by the integration of selected civilian and military radar sites into the Regional

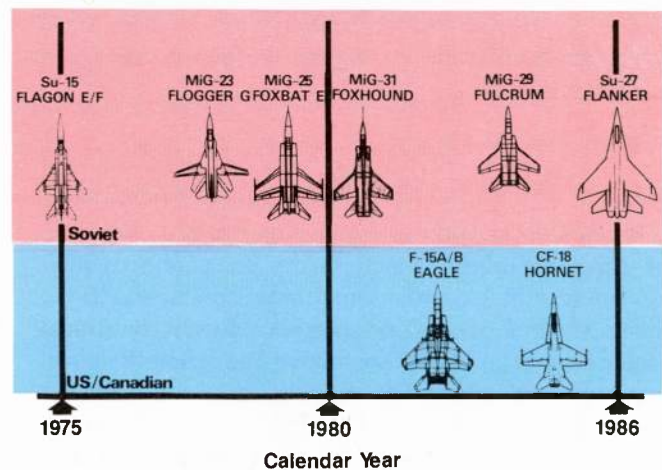
Operations Control Centers that compose the Joint Surveillance System. The system would provide regional air defense command and control during the initial stages of an attack.

Improvements in surveillance capability have been accompanied by upgrading interceptor aircraft. USAF active strategic air defense forces have been upgraded with the F-15 aircraft. US F-106 and eventually F-4 aircraft are being replaced by more capable modified F-16 air defense aircraft. Additionally, Canada's CF-101 interceptors have been replaced with CF-18 aircraft. The addition of the advanced medium-range air-to-air missile (AMRAAM) will improve the ability of air defense aircraft to engage low-altitude aircraft in a lookdown-shootdown ECM environment. Further, the AMRAAM will give the F-15s the added capability to engage multiple targets simultaneously. This capability will become increasingly important as the Soviets expand their cruise missile inventory. Figure IV-9 illustrates the modernization of the US and USSR interceptor aircraft.



F-15

Air Defense Interceptor Aircraft Deployments



As of 30 September 1986

FIGURE IV-9

Space Defense

The Soviet Union has the world's only operational antisatellite (ASAT) system. The Soviets' ASAT is a weapon capable of attacking satellites in near-earth orbits. Additionally, GALOSH antiballistic missile interceptors have an inherent ASAT capability when used in a direct ascent mode. Vigorous Soviet research and development efforts in ground-based high-energy lasers at Sary Shagan and space-based directed-energy technology have potential ASAT applications.

The United States is continuing to develop ASAT weapon systems to deter Soviet ASAT attacks of US satellites and Soviet deployment of low-earth orbiting space weapons. Should deterrence fail, US ASAT systems must be able to hold at risk corresponding Soviet space assets. The initial US capability has been demonstrated and is expected to be provided by the Miniature Air-Launched System, a small missile launched from F-15 aircraft. This program is currently constrained by a Congressionally imposed test moratorium against an object in space.

Other Defense Measures

Both the United States and the Soviet Union have given missile silos and essential command and control systems their first priority in programs to harden strategic systems against overpressure from a nuclear detonation. The results of hardening are evident in the characteristics of strategic targets. The Soviet Union has significantly improved its strategic capability by dispersing critical facilities, hardening structures, and developing mobile systems. For the most part, the United States has not extended hardening to economic or government facilities beyond those actually involved in strategic intelligence and command and control operations.

The Soviet Union places far more emphasis on civil defense than does the United States. The Soviets view civil defense as an integral part of their strategic posture and invest heavily in the protection of their key leadership, essential work force, critical economic facilities, and general population. Soviet programs include construction of protective relocation facilities, organizational planning, training, and the commitment of manpower to the civil defense structure. US efforts do not provide for adequate support of a dispersed population or protection of war-supporting industry and its labor force.

Strategic Defense Summary Assessment

Figure IV-10 illustrates the key features of the US and Soviet strategic defense force postures.

NONSTRATEGIC NUCLEAR FORCES

The United States must possess a broad spectrum of nuclear force options to deter aggression and defend its interests should deterrence fail. Non-strategic nuclear forces (NSNF) provide an escalatory or retaliatory response below the level of strategic nuclear forces. NSNF consist of land-based systems for battlefield support and intermediate-range strikes and sea-based systems for land strike and antiship, antisubmarine, and antiair warfare.

NSNF support conventional forces by providing a major deterrent to conventional, theater nuclear, and chemical attack and are essential to a strategy of flexible response. NSNF provide a range of employment options that create uncertainty for potential aggressors concerning US and allied response. Such forces could deny the enemy sanctuary to mass forces behind the immediate battle zone and break up the momentum of an offensive.

Although US NSNF are available for deployment worldwide, the majority of these forces are located in Europe. The primary NSNF threat to US and allied forces is also located in Europe, although SS-20 missiles based in eastern and central USSR and Soviet sea-based nuclear forces pose a growing threat to Asia. The NSNF are structured differently for their missions in Europe and Asia. NATO NSNF are deployed in a relatively confined geographic area and are primarily land-based. US NSNF in the Pacific are geographically dispersed and more dependent on sea-based capabilities. The following assessments of NSNF are provided in a NATO-Warsaw Pact context.

Intermediate-Range Nuclear Forces

Intermediate-range nuclear forces (INF) include land-based missiles and aircraft capable of striking targets beyond the general area of the battlefield, but not capable of intercontinental range.

Longer Range Intermediate-Range Nuclear Forces

Longer range intermediate-range nuclear force (LRINF) missiles have ranges between 1,800 and 5,500 km. In late 1983, NATO began implementing its 1979 decision to modernize LRINF with initial deployments of PERSHING II and ground-launched

Strategic Defense Summary

US

BALLISTIC MISSILE DEFENSE

- Dismantled
- 1983 Strategic Defense Initiative (Research)

AIR DEFENSE

- SAMs phased out in 1975
- 300 Interceptors
- 100 Radars

SPACE DEFENSE

- Early interceptor dismantled
- F-15 launched ASAT in development

CIVIL DEFENSE

- Limited program

RELIANCE ON RETALIATORY CAPABILITY

- Effective tactical warning and attack assessment
- Survivable TRIAD

Soviet

BALLISTIC MISSILE DEFENSE

- Deployed around Moscow—within ABM Treaty
- Systems available for potential breakout

AIR DEFENSE

- 9,000 + SAM launchers
- 1,200 Interceptors
- 10,000 Radars

SPACE DEFENSE

- Orbital ASAT operational
- Potential use of ABM as ASAT
- Potential ground-based lasers
- Potential electronic warfare threat

CIVIL DEFENSE

- Strong program

RELIANCE ON DAMAGE LIMITATION AND OFFENSIVE CAPABILITY

- Effective tactical warning and attack assessment
- Active defenses
- Passive defenses
- Survivable offensive capability

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FIGURE IV-10

Longer Range INF Missiles

	Soviet		US	
				
	SS-4	SS-20	PERSHING II	GLCM
Warheads	1	3 MIRV	1	1
Range (km)	2,000	5,000	1,800	2,500
Operational flight time	Minutes	Minutes	Minutes	Hours
Operational mode	Fixed	Mobile	Mobile	Mobile
Global numbers deployed	112	441	108	192
Year operational	1958	1977	1983	1983

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FIGURE IV-11

cruise missiles (GLCMs). These actions were undertaken because of Soviet deployments of SS-20 missiles and the unwillingness of the Soviets to agree to INF reductions after 2 years of negotiation. GLCMs are now deployed in the United Kingdom, Italy, Federal Republic of Germany, and Belgium. Construction is ongoing in the Netherlands with scheduled deployment in 1988. NATO deployments are scheduled to continue through 1988 at which time 108 PERSHING IIs and 464 GLCMs will be in Europe unless an arms control agreement reduces LRINF missiles to lower levels.

Full deployment of LRINF missiles will increase NATO's nuclear deterrent capability significantly and partially offset SS-20 deployments. Both the PERSHING II and GLCM systems have ranges exceeding those of other NATO land-based missile systems deployed in Europe and incorporate technologies that make them effective against critical targets. The PERSHING II missile provides an additional capability because it can strike time-urgent targets.

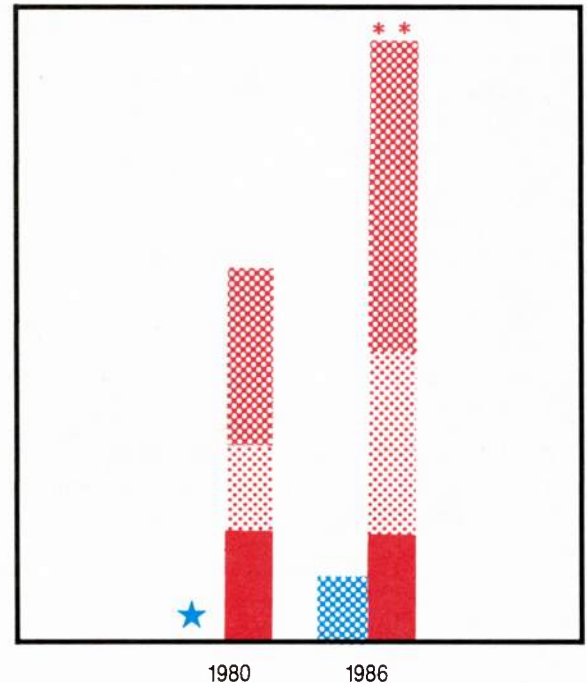
As shown in Figure IV-11, the PERSHING II and GLCM do not compensate fully for deployed Soviet LRINF capabilities. Soviet SS-20 systems, with 3 independently targeted warheads per missile, already greatly outnumber the 572 single warhead missiles that will be made available by NATO LRINF deployments (Figure IV-12). The availability of SS-20 refires and older SS-4s further contribute to the imbalance. In addition, the SS-20 has a much greater range than any NATO LRINF system. As shown on Figure IV-13, the SS-20 can cover the entire European theater, all of East Asia, and other vital areas. The SS-20 can reach most significant targets in Western Europe, even when deployed beyond the NATO LRINF range. In addition, we expect the Soviets to deploy the SSC-X-4 ground-launched cruise missile over the next several years and they are testing a follow-on to the SS-20. Figure IV-14 compares NATO and Warsaw Pact LRINF capabilities.

Shorter Range Intermediate-Range Nuclear Forces

Shorter range intermediate-range nuclear forces (SRINF) have ranges from beyond the immediate battlefield to 1,800 km. Withdrawal of US PERSHING 1a missiles from Europe was completed in 1985 in conjunction with the deployment of the PERSHING II systems. With this withdrawal, the German PERSHING 1a missiles are the only SRINF missiles remaining in the NATO inventory. This change is reflected in Figure IV-15.

NATO-Warsaw Pact Longer Range INF Missiles*

Worldwide



NATO*

★ No NATO deployed systems
Warheads deployed (1 warhead per missile)

Warsaw Pact

Warheads deployed (includes refires)
Warheads on launchers
Missiles on launchers

*Includes: US PERSHING II, GLCM and Soviet SS-4, SS-5, SS-20.

**SS-5 no longer active

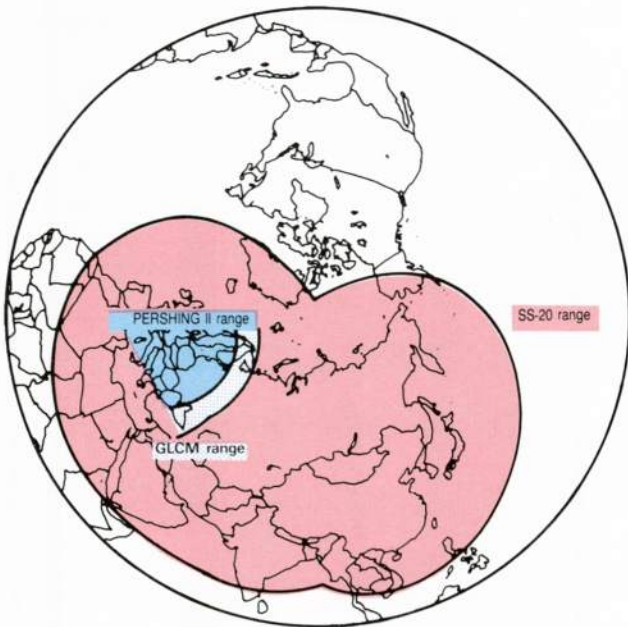
As of 30 September 1986

FIGURE IV-12

The Soviet modernization of SRINF systems continues. Deployment of the SS-23 missile, with its improved accuracy, will significantly increase the capability of SRINF systems facing NATO. The number of SRINF missiles available to the Warsaw Pact is expected to grow considerably during the rest of the decade.

SRINF missiles provide the Soviet Union with a significant capability. The forward deployment of SRINF systems will reduce the number of Soviet LRINF systems required to accomplish targeting objectives.

PERSHING II and GLCM Coverage & SS-20 Coverage from Soviet Bases



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FIGURE IV-13

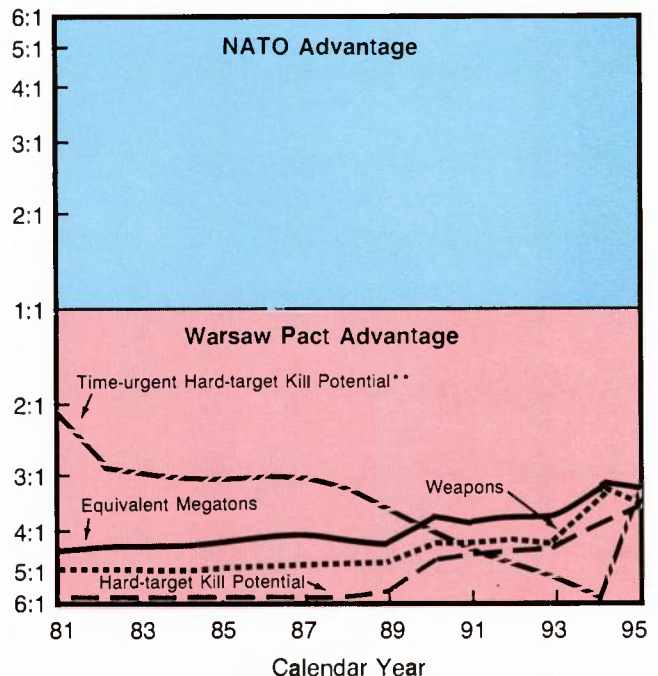
Intermediate-Range Nuclear Forces Aircraft

INF aircraft are those land-based, nuclear-capable aircraft with less than intercontinental range. Dual-capable aircraft (DCA) make up the preponderance of the INF systems capable of delivering nuclear weapons beyond the immediate battlefield. Figure IV-16 shows that both the Warsaw Pact and NATO rely heavily on these systems and that the Warsaw Pact holds a significant numerical advantage. The F-111 and TORNADO are currently the only INF aircraft available to NATO with the ability to penetrate enemy defenses at low altitude, day or night, in any weather. NATO will continue to make qualitative and quantitative improvements in its INF aircraft, such as the F-16 and TORNADO. The addition of the F-15E dual-role fighter to the inventory in the early 1990s will significantly improve NATO's all-weather capability. The United States is modernizing the tactical bomb stockpile with enhanced safety and security features to increase effectiveness.

As with NATO systems, most Warsaw Pact INF aircraft are limited to SRINF-equivalent ranges. Only the BACKFIRE, BLINDER, and BADGER bombers are capable of longer ranges.

Intermediate-Range Nuclear Forces* —Europe—

(Land-based Missiles and Dual-capable Aircraft)
Preattack Static Ratio Comparison
(Missiles on Launcher Only)



* Includes only those weapon systems with ranges greater than 300km and no refire missiles

** Includes all ballistic missiles, force generated including UK TRIDENTS deployed in the 90s

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FIGURE IV-14

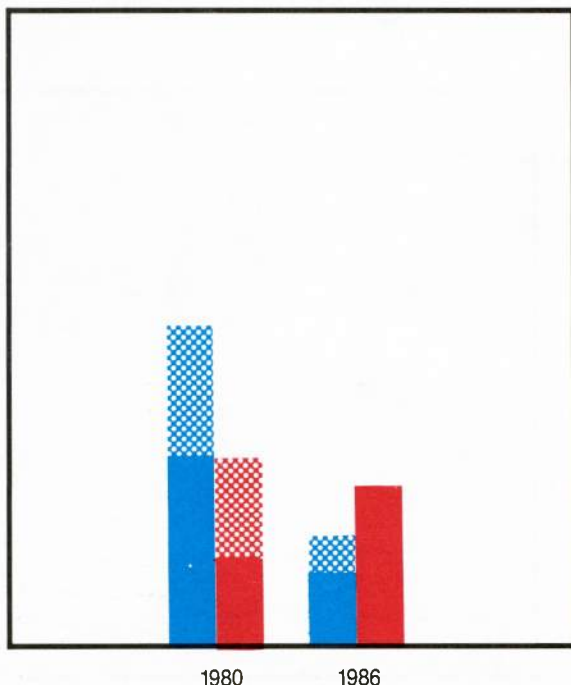
NATO INF aircraft have both a nuclear and conventional role. Because of possible attrition during conventional operations and the fact that not all INF aircraft are committed to the nuclear role, the actual number of DCA available would depend on the nature and sequence of the aggressor's attack.

Short-Range Nuclear Forces

In the past, NATO had a clear advantage over the Warsaw Pact in the number of deployed short-range nuclear force (SNF) missiles, rockets, and artillery capable of striking targets only in the immediate battlefield area (Figure IV-17). This advantage was due primarily to the large NATO inventory of dual-capable 155 millimeter (mm) howitzers. The Soviets now hold the advantage. The Soviets have fielded nuclear-capable 152mm guns, 203mm guns,

NATO-Warsaw Pact Shorter Range INF Missiles

Europe



NATO*

Total warheads on missiles

Missiles on launchers
(1 warhead per missile)

*US PERSHING 1a
(withdrawal complete in 1985)

FRG PERSHING 1a

Warsaw Pact**

Total warheads on missiles

Missiles on launchers
(1 warhead per missile)

**Soviet SCALEBOARD, SS-23

As of 30 September 1986

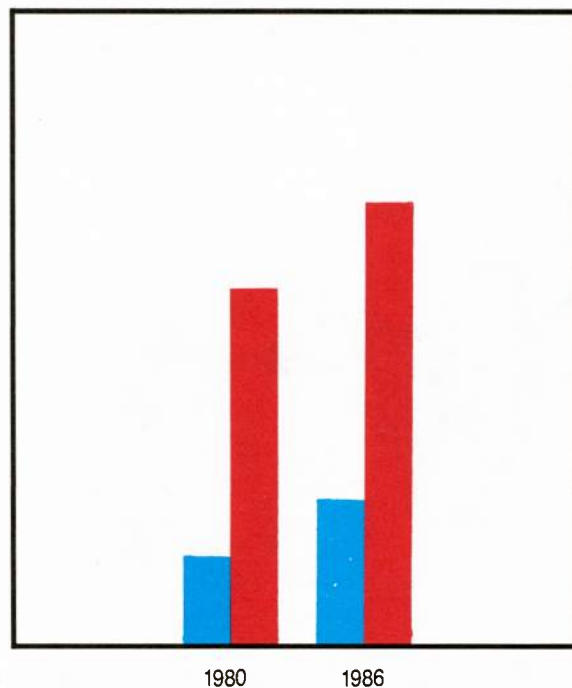
FIGURE IV-15



M109 SELF PROPELLED 155MM HOWITZER

NATO-Warsaw Pact INF Aircraft

Europe



Aircraft
(nuclear-capable)

Aircraft
(nuclear-capable)

As of 30 September 1986

FIGURE IV-16

and 240mm self-propelled mortars; also, the older 152mm howitzer is considered to be nuclear-capable. These systems are complemented by a new nuclear capable ballistic missile, the SS-21, which is replacing the FROG-7. Soviet deployments of these SNF weapons significantly increase their battlefield nuclear capability.

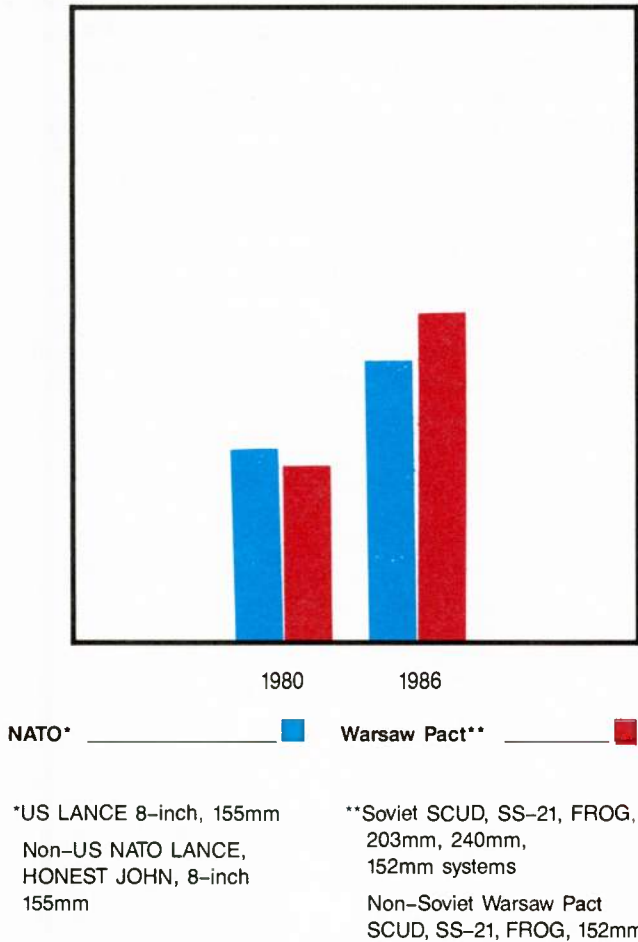
The United States is also engaged in programs to upgrade its SNF systems. This modernization effort is required to replace aging, less reliable warheads and provide weapons that can more effectively counter the Warsaw Pact threat.

Modernized artillery-fired atomic projectiles (AFAP) use improved technology, resulting in significantly increased range, greater accuracy, higher reliability, improved responsiveness, and enhanced safety and command and control.

NATO-Warsaw Pact Short-Range Nuclear Forces

Europe

Launchers/Artillery Tubes Only



As of 30 September 1986

FIGURE IV-17

Compared to other SNF systems, the large number of 155mm howitzers in Europe increases by a factor of five the number of potential SNF delivery systems with which Soviet planners must contend. The W82 modernized 155mm AFAP is in development. This weapon is designed to replace the W48, which is nearing the end of its useful life. The W82 offers a higher yield, increased range, and significantly improved military effectiveness. Until sufficient W82 are fielded, a significant number of the less capable, first generation 155mm AFAPs will be required.

The LANCE, with its 115 kilometer (km) range, remains our longest range SNF system. The LANCE provides the ground commander an important capability to threaten the massed armored formations favored in Soviet doctrine.

Sea-Based Nuclear Forces

Sea-based nuclear forces consist of strike, anti-ship, air defense, and antisubmarine warfare systems. Carrier-based aircraft (A-6, A-7, F/A-18) with nuclear bombs continue to provide the United States with a flexible nuclear land-attack and antiship capability. The TOMAHAWK Land-Attack Cruise Missiles (nuclear) (TLAM/N) significantly enhances the ability to strike land targets by providing increased range over carrier aircraft and allowing dispersal of nuclear strike assets over a large number of naval platforms.



USS NEW JERSEY (BB-62) LAUNCHING
A TOMAHAWK

In addition to TLAM/N, various naval forces are equipped with TERRIER nuclear anti-air warfare (AAW) missiles, submarine rocket (SUBROC), anti-submarine rocket (ASROC), and B-57 nuclear depth bombs and B-57, B-43, and B-61 nuclear strike bombs.

The Soviet Navy maintains an extensive sea-based non-strategic nuclear force comprising both anti-surface warfare (ASUW) and anti-submarine warfare (ASW) systems. The Soviets maintain an inventory of nuclear armed torpedoes as well as ASW depth bombs. Almost all major surface combatants (about 290), all submarines (about 340) as well as a few of the other combatant ships (some 31) carry at least one if not a mix of systems.

Other Nuclear Forces

The United Kingdom maintains an SLBM force consisting of 4 SSBNs, each of which carries 16 POLARIS A-3 missiles. The United Kingdom plans to purchase the US TRIDENT system to replace its POLARIS systems in the 1990s. France is not part of the integrated NATO military structure but maintains an independent nuclear capability.

Command and Control

Soviet Command and Control

For a conflict involving both conventional and nonstrategic nuclear forces, the Soviets have a command and control system that provides centralized control. Theater force communications networks are integral to the national command communications systems. Soviet command and control capabilities are highly survivable, redundant, and flexible. In addition,

the Soviets are maintaining vigorous research and development programs to upgrade such systems.

US Command and Control

US NSNF command and control systems must provide for the positive control and custody of nuclear weapons and the assured command and control of our theater nuclear forces through the full conflict spectrum. Our NSNF command and control systems have been improved in the areas of communications reliability and security. Several communications upgrades are under way to enhance their endurability and availability between now and the mid-1990s. These programs are designed to provide for continuity of operations and command and required communications connectivity after nuclear exchanges. In addition, new programs are being developed to provide for the flexible, accurate, and timely management, allocation, and execution of the force and its mission up to, during, and through the postattack period.

CHAPTER V. CONVENTIONAL FORCES

INTRODUCTION

This chapter describes US general purpose forces and highlights essential conventional force programs and improvements. It discusses considerations for employing and supporting the forces and reviews improvements in Service interoperability, planning and programming, forces development, doctrine, and joint warfighting concepts.

Role of the JCS

The joint system, independent of the Services, has evolved since 1947 to command worldwide US military forces. The amendment to Title 10, US Code, enacted recently will focus increased attention by the Chairman and the Joint Chiefs of Staff (JCS) to the formulation of strategy and to contingency planning. That legislation was also intended to improve the military advice provided to the President, the National Security Council, and the Secretary of Defense. The role of the Chairman, Joint Chiefs of Staff, has been modified and includes basic functions previously assigned to the JCS. These functions can be summarized as follows: (1) serve as the principal military advisor to the President, the Secretary of Defense and the National Security Council; (2) assist the President and the Secretary of Defense in providing for the strategic direction of the Armed Forces; (3) prepare strategic plans; (4) advise the Secretary of Defense on the priorities of the requirements identified by the commanders of the unified and specified commands; and (5) develop doctrine for the joint employment of the Armed Forces. The operational chain of command continues to pass from the President to the Secretary of Defense to the commanders in chief of unified and specific commands (CINCs). The JCS have no command authority, but in effect provide a channel of communication between the NCA and the CINCs.

COMPONENT FORCES

Land Forces

Appreciation of the role of land power linked with sea power is critical to understanding the whole of US national military strategy. Military strategy objectives remain centered on deterrence and, should deterrence fail, cessation of hostilities on terms favorable to the United States and its allies and friends. Achievement of these objectives relies upon a comprehension of the threat and the strengths derived from coalition warfare and forward defense.



SOLDIERS IN THE FIELD

Soviet and Warsaw Pact forces continue an unprecedented modernization of their massive standing armies — expanding capabilities in every function of ground combat with new tanks, infantry fighting vehicles, artillery, helicopters, command and control systems, and support and service support systems. Providing cohesion and direction to this modernization is the Soviet Theater Strategic Operation Doctrine that seeks rapid defeat of North Atlantic Treaty Organization (NATO) forces with high speed offensive operations. Soviet doctrine would deny the initiative to NATO, attempting to overcome “flexible response” with a paralyzing strike to the strategic depth of the NATO defenses.



ARMOR IN ACTION

Countering this Soviet threat to NATO is a joint and combined capability centering on land power resident in the ground forces of the NATO Allies. US land forces are supported by the combined air

power of all the Services and the air arms of our allies. The amphibious power projection doctrine of the Marines and the Army's Air-Land Battle Doctrine define capabilities and concepts to thwart the initial Warsaw Pact attack, while simultaneously disrupting and attriting follow-on forces. US land forces require the capability to execute a vigorous forward defense of critical theaters without immediate pressure to employ nuclear weapons, especially in the case of Warsaw Pact attack of NATO.



AH-64 APACHE ATTACK HELICOPTER

While NATO preparedness occupies a great deal of attention, US military strategy recognizes the global threat posed by the Soviet Union and its surrogates or other nations whose aims are contrary to the interests of the United States. Although superior mobility and operational readiness have provided the US military a viable capability for force projection into threatened areas around the globe, the Soviet Union has increased its power projection capabilities sharply over the last 10 years. The United States cannot be complacent; rather, US capabilities must remain significantly greater than those of the Soviet Union to project its land forces around the world. This has led the Army to the creation of five new rapidly deployable infantry divisions as well as the expansion of our tactical and strategic lift capability. In short, we continue to expand our conventional force capabilities to respond to the global threats that face us.

Success on the battlefield is not simply a function of the aggregated potential of weapons. Modernization alone cannot redress the imbalance between the land forces of the Soviet Union and those of the United States. But war winning is a function of both good doctrine and well trained soldiers,

which we have, and qualitatively superior systems and technologies with which to balance the enormous quantitative advantage now enjoyed by the Soviet Union. US capabilities are not competitive yet and will not be unless and until we regain the qualitative advantage across the breadth of our general purpose forces (see Figure V-1).

All other things being equal, the land force dimension of US strategy relies to an important degree on our ability to regain the qualitative edge. Programs are under way; the ABRAMS tank and BRADLEY fighting vehicles, Multiple Launch Rocket System (MLRS), enhanced command, control, communications, and intelligence (C³I), Joint Surveillance and Target Attack Radar System (JSTARS), and Army Tactical Missile System (ATACMS) are there. They are not being fielded in sufficient numbers or in timely fashion.



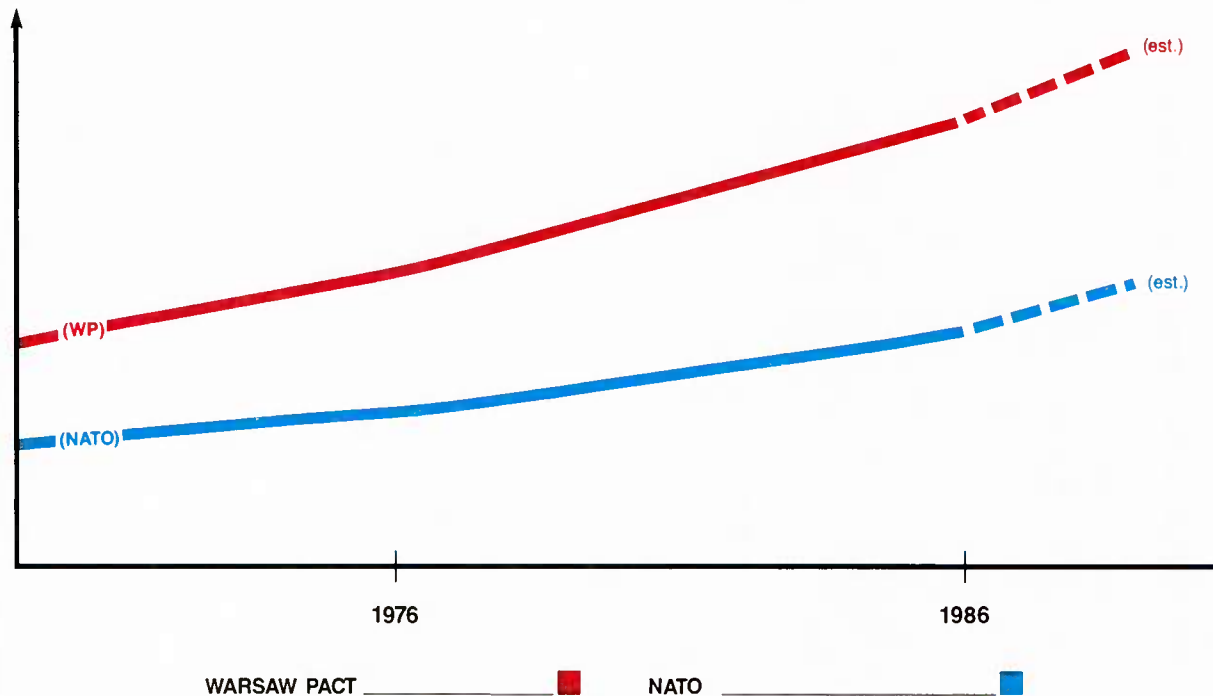
HMMWV WITH TOW



MULTIPLE LAUNCH ROCKET SYSTEM

Rate of Modernization NATO / WP Ground Warfare Systems

Designated
Force
Potential



- WP modernizing in-place forces faster than NATO
- WP dominance is increasing

As of 30 September 1986

FIGURE V-1

Combine the capabilities implicit to our war-fighting doctrines with the technological and production capabilities of US industry, and our conventional capabilities will assure the deterrent credibility and fighting capacity of our general purpose forces.

To meet the global challenges presented by Soviet and other potential adversaries, the Army has sought to make optimum use of constrained manpower and fiscal resources. Major elements of the Army modernization program are outlined in Figure V-2. With the 1987 procurements, the Army has completed funding of over one-third to one-half the modernization of major combat systems initiated in the 1970s. Significant milestones in 1987 include:

- Fielding five AH-64 APACHE battalions;
- Continuing to equip US Army forces in Europe

with the M1A1 ABRAMS tank with the 120 millimeter (mm) gun and an overpressure NBC protective system;

- Continuing the modernization of the Reserve Components (RC) by fielding M60A3 or ABRAMS tank; and
- Continuing the activation of the 6th Infantry Division (Light) and the 10th Mountain Division (Light) in the Active Component (AC) along with the 29th Infantry Division (Light) in the Army National Guard.

The Army must now complete its modernization program and begin the equally important task of exploiting advanced sensor, data fusion and distribution, and smart munition technologies necessary to extend the battle beyond the engaged forces. This

Ground Force Systems Modernization

<u>System</u>	<u>Description</u>
ABRAMS Tank	Main battle tank
M60A3 Tank	Main battle tank product improvement program
BRADLEY Fighting Vehicles	Infantry and cavalry fighting vehicles
UH-60 BLACKHAWK	Utility helicopter
AH-64 APACHE	Advanced attack helicopter
PATRIOT	High and medium altitude surface-to-air missile
Multiple-Launch Rocket System	Self-propelled, tracked multiple-rocket launcher/loader
Army-TACMS	Conventional ballistic missile
Precision Guided Artillery Munitions and Submunitions	Family of PGM's
JSTARS	Airborne radar battlefield management and target location system
RPV	Unattended air vehicle sensor platform
Guard Rail/Common Sensor	Signals intelligence collection
ACCS	C ³ I modernization programs
PJM	
MSE	Battlefield area communications
SCOTT	Survivable tactical satellite C ² (ground forces MILSTAR terminal)

As of 30 September 1986

FIGURE V-2

capability to conduct operations in depth is essential to success in combat against a sophisticated and numerically superior foe who has the advantage of choosing the time, place, and manner of attack.

Air Forces

The basic objective of our air forces is to gain and maintain control of the air environment and to take decisive actions immediately and directly against an enemy's warfighting capacity. Air power must be able to deny control of the air to enemy air forces and to provide land and naval forces the assistance necessary for them to control their environments.

The United States is continuing to improve its combat air forces through a balance among procuring new systems, modifying existing capabilities, and enhancing sustainability. The advantage currently held by the United States is narrowing as the Soviets deliver new aircraft, the FLANKER (Su-27) and FULCRUM (MiG-29), to operational units in significant numbers. These aircraft feature improvements in

maneuverability, fire control, airframe construction, electronics, armament, and range-payload capability. The deployment of the Soviet MIDAS tanker aircraft for theater support further increases the effectiveness of Soviet combat aircraft.

Figure V-3 displays US and Soviet combat aircraft by category, and Figure V-4 compares tactical aircraft production rates. These production figures include both dual-role and single-role Soviet and US aircraft.

Because of a budgetary restriction, the US Air Force will stabilize at a 37.1 tactical fighter wing (TFW) equivalent force structure during this Five-Year Defense Plan (FYDP). However, significant modernization will occur. For example, the fighter squadron deployed in Iceland has modernized from F-4Es to F-15Cs with a corresponding 50 percent increase in aircraft; the first squadron of F-16s has been established at Misawa Air base, Japan, with a second squadron to follow in Fiscal Year (FY)

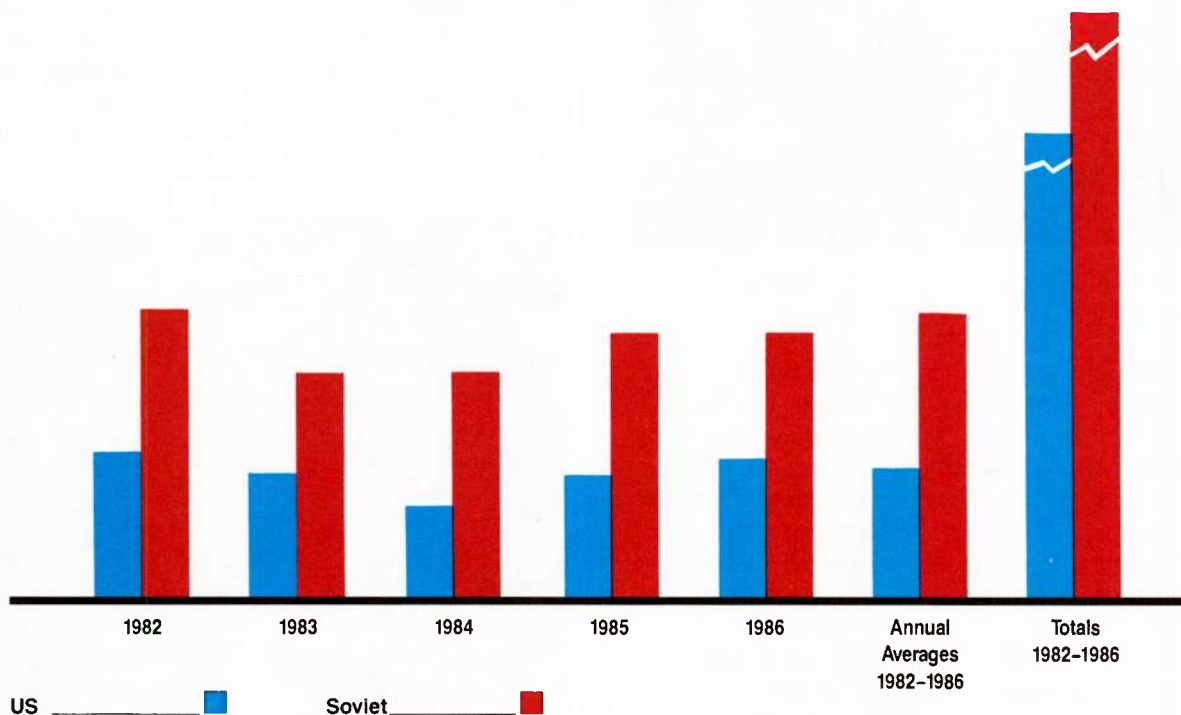
Current US-Soviet Combat Aircraft

<u>Category</u>	<u>US Aircraft</u>	<u>USSR Aircraft</u>
Air-to-Surface	B-1B, B-52, FB-111 F-111, A-6 F-4, A-7, A-4, F / A-18, F-16 AV-8 A-10	BACKFIRE, BEAR, BISON, BADGER, BLINDER FENCER FLOGGER, FISHBED, FITTER, FOXBAT FORGER FROGFOOT
Air-to-Air	F-15, F-14, F-4 F-16, F / A-18	FLOGGER, FOXBAT, FOXHOUND, FIDDLER, FLANKER FULCRUM, FISHBED, FLAGON
RECCE / EW / - AWACS	RF-4, SR-71, F-14 TARPS U-2, TR-1 RC-135 EF-111, EA-6, EA-3 E-3A, E-2, EC-130	FITTER, FOXBAT, FISHBED BEAR, BLINDER FENCER, BREWER, BADGER MAINSTAY, MOSS, CUB

As of 30 September 1986

FIGURE V-3

US-Soviet Annual Production of Tactical Combat Aircraft*



* Includes all fighters, fighter-bombers, combat capable trainers, and ASW

As of 30 September 1986

FIGURE V-4

1987; F-16s are replacing F-4Es at Spangdahlem and Ramstein Germany, in FY 1987-1989; the Air National Guard and the Air Force Reserve modernization includes additional F-15, F-16, and F-4E conversions as well as the modification of three A-7 squadrons with forward-looking infrared pods, new head-up displays, new computers, and radar refinements, all providing a much needed low-altitude night attack capability. In addition, the current force will be improved substantially through engine modification programs, increased air-to-air missile self-protection capabilities, and upgraded defensive systems for most tactical aircraft. Additional procurement of AIM-7M radar missiles and AIM-9M heat-seeking missiles will add significantly to the US capability for air-to-air combat. Additionally, the availability of LANTIRN pods will enhance the ability of tactical air forces to deliver ordnance on target during night and adverse-weather operations.



USAF F-15 AND F-16

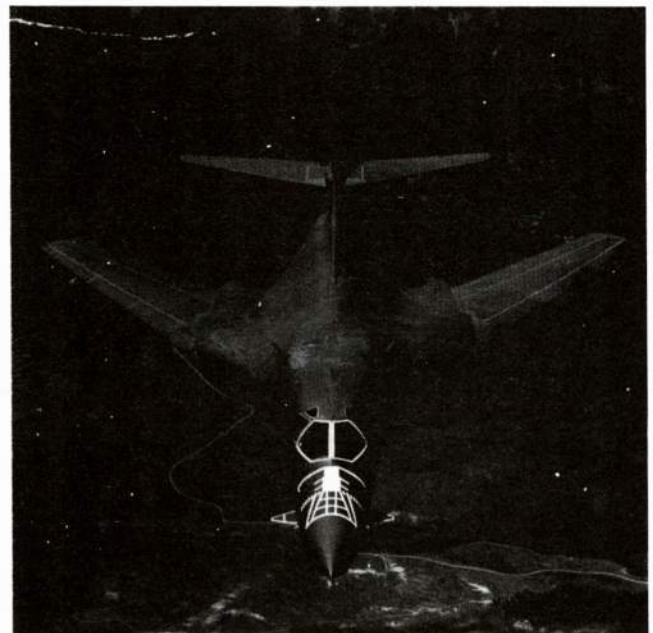
Although conventional capabilities have continued to grow, the supporting capability to employ them has not kept pace. Funding constraints will prevent fighter and electronic combat forces from engaging the projected threat effectively because of limitations in force size, fire-control radar, electronic warfare suites, armament, combat rescue, and air-refueling.

Strategic air forces continue to play a role in conventional operations. Strategic Air Command (SAC) B-52s have the capability to provide conventional support from continental United States (CONUS) or forward bases. These modified aircraft can carry a full range of gravity bombs, naval mines, and HARPOON antiship missiles. Currently, all non-air-launched cruise missile (ALCM)-configured



B-52 WITH 12 HARPOON ANTISHIP MISSILES

B-52Gs will relinquish their primary Single Integrated Operational Plan (SIOP) commitment, in the late 1980's. Plans call for dedicating these assets to a conventional support role. When combined with modern standoff munitions and cooperative sensors, this force will provide a cost-effective, cross-Service, cross-mission, long-range, quick strike conventional capability that must be fully exploited. Eventually, B-1Bs will also be capable of supporting conventional missions. The B-1B utilizes terrain-following radar for an improved all-weather, day-night capability and also provides new employment options to deliver conventional weapons.



B-1B

In-flight refueling by the KC-10 and KC-135 enhances the effectiveness and flexibility of US and allied aircraft. This capability allows tactical combat aircraft to carry maximum payloads and to employ optimal tactics. The closure time of reinforcing forces is also reduced by permitting nonstop transit to forward operating locations. In addition, timely aerial refueling extends the loiter time of surveillance and reconnaissance aircraft allowing more efficient use of these assets. New initiatives have been taken to increase the interoperability of Air Force tankers supporting US carrier-based airpower.

The primary mission of the KC-135 fleet remains support of the SIOP; however, these assets must also provide support to theater forces and conventional deployment and employment operations. To modernize and increase capability, Active, Reserve, and National Guard KC-135s are being fitted with newer, more efficient engines. Acquisition of the KC-10 also aids in alleviating the refueling/mobility shortfall. However, the requirement to provide refueling for conventional mobility and combat forces continues to expand.

The US Marine Corps continues to modernize its tactical air, air defense, and command and control systems especially as exemplified by continuing transition to the AV-8B. By FY 1987, this modernization will include the transition of the first six F-4



KC-10 TANKER/CARGO AIRCRAFT

squadrons to F/A-18s, the first A-4M squadron to AV-8Bs, and two AV-8A/C squadrons to AV-8Bs. Marine Corps air defense is being improved by adding HAWK AND STINGER missile units. The LASER MAVERICK, SIDEARM, STINGER POST, HELLFIRE missiles, and GATOR mines will also improve Marine aviation and air defense capabilities.

The Navy's tactical aviation force is expanding to support a goal of 15 aircraft carrier groups. The 14th active carrier air wing is expected to be activated in FY 1988. The dual-mission F/A-18 has been introduced to the fleet, and 5 of 26 programmed



USMC F/A-18



USN F/A-18



USMC HARRIER II



USN F-14A

Navy squadrons have been established. By 1987, the Navy will have 10 Active F/A-18 squadrons. A modernization program is under way to upgrade the F-14A, its PHOENIX missile system, and the A-6E to counter the threat of the 1990s. In FY 1987, the Naval Air Reserve will continue its modernization program: F-14A deliveries will commence to the last two fighter squadrons; attack squadrons will have completed transitioning to A-7Es; and integration of the F/A-18 will continue with a second attack squadron transitioning by the end of the fiscal year.

Naval Forces

As referenced earlier in the discussion of the maritime balance, the United States is inescapably a maritime nation. Our inevitable dependence on Free-World trade in peacetime and the ability to employ land and air forces overseas in war, links us to the necessity for access to and control of the high seas.

The classic missions of seapower have been sea control, power projection, and sealift. These translate into the tasks of antisubmarine warfare, antisurface



CV-66 USS AMERICA

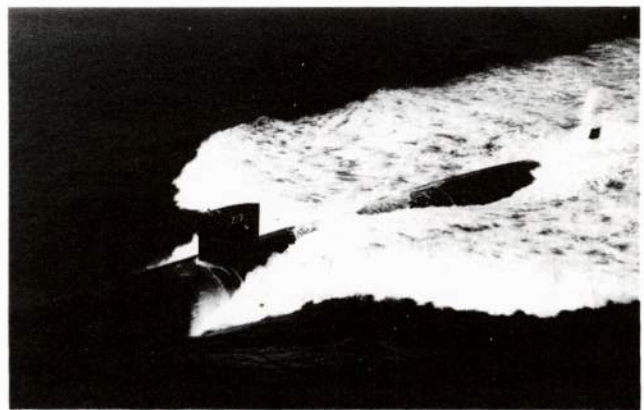
warfare, counter command and control, strike operations, antiair operations, mine warfare, special operations, amphibious operations, and sealift. The objectives of sea power as applied through these tasks are to destroy the Soviet Navy, influence the land battle by ensuring reinforcement and resupply, and by directly applying carrier air and amphibious power, deny the Soviets the ability to apply a single front strategy by exerting global pressure on Soviet forces, and aid in terminating the conflict on terms acceptable to the United States and its allies. Faced with the continuing expansion of Soviet seapower from a "brown water" to a truly capable global "blue



BB-61 USS IOWA

water" Navy, the United States has recognized the importance of maintaining a capable maritime force in-being that is ready to respond across the spectrum of conflict.

The force level objectives for the 600-ship Navy are 20 to 40 strategic nuclear-powered ballistic missile submarines (SSBNs), 15 carrier battle groups, four battleship battle groups, 100 nuclear-powered attack submarines (SSNs), 10 underway replenishment groups, 14 mine countermeasures ships, and sufficient amphibious ships to lift the assault echelons of a Marine amphibious force (MAF) and a Marine amphibious brigade (MAB).



SSN-713 USS HOUSTON

The deployable battle forces of the US Navy have grown from 491 ships in 1981 to 555 at the beginning of FY 1987. Prior year Navy shipbuilding programs have provided the funding required to achieve 600 ships by the end of the decade. Building an average of 20 ships each year will sustain and modernize a 600-ship fleet indefinitely with minimal growth in force structure spending.

This year's shipbuilding budget includes funding for the construction of 13 new ships and the conversion of four others. The 5-year shipbuilding plan projects a total of 99 new construction ships and 10 conversions over the period from 1988 through 1992 (Figure V-5). The plan is to maintain a building rate of one TRIDENT submarine per year throughout the FYDP.

The primary mission of the US nuclear attack submarines is to counter the formidable Soviet submarine force. As of the end of FY 1986, a total of 97 nuclear attack submarines are in the force. Of these, 36 are LOS ANGELES-class (SSN-688)

US Naval Shipbuilding Program

<u>Category/Class</u>	<u>FY-88</u>	<u>FY-89</u>	<u>FY-90</u>	<u>FY-91</u>	<u>FY-92</u>	<u>TOTAL</u>
Ballistic Missile Submarines _____	1	1	1	1	1	5
Nuclear-powered Attack Submarines _____	3	3	2	4	3	15
Aircraft Carriers _____	—	—	—	—	—	—
Cruisers _____	2	2	1	—	—	5
Destroyers _____	3	3	4	5	5	20
Amphibious Ships _____	2	1	2	1	2	8
Mine Warfare Ships _____	0	5	3	3	2	13
Support Ships _____	2	7	9	10	5	33
Landing Craft (Air Cushion) _____	13	22	22	24	18	99
<i>Conversions/Reactivations</i>						
Battleship _____	—	—	—	—	—	—
Aircraft Carrier SLEP* _____	1	—	—	1	—	2
Oiler (Jumbo) _____	1	2	1	—	—	4
Auxiliary Crane Ship (Conventional) _____	2	2	—	—	—	4

* Service Life Extension Program

As of 30 September 1986

FIGURE V-5

submarines. Twenty-two additional ships of this class have been appropriated through FY 1987.

The SEAWOLF-class (SSN-21) submarine will be funded next year in order to maintain our qualitative lead over the Soviet submarine threat. The SEAWOLF will be quieter, faster, and more heavily armed than earlier classes.

The USS THEODORE ROOSEVELT (CVN-71) was delivered last year, bringing to 14 the number of deployable carriers in the Fleet. Two additional NIMITZ-class CVNs are under construction. In addition, one conventional carrier, USS KITTY HAWK (CV-63), will commence the Service Life Extension Program (SLEP) in FY 1988. The SLEP will extend the service life of the older carriers by 15 years.

Last year, Congress appropriated the funds for two more CG-47 TICONDEROGA-class cruisers, bringing to 22 the total number of these highly capable AEGIS ships that have been approved to date. The last five ships of the class will be procured over the next 3 years. The last CG-47 baseline will incorporate all the proven capabilities of the AEGIS combat system using the more capable computers and displays.

The ARLEIGH BURKE-class guided-missile destroyers (DDGs) are intended to replace the aging DDG-2 and DDG-37-class guided missile destroyers, which are reaching the end of their service lives. It will carry the AEGIS combat system, the Vertical Launch System (VLS), TOMAHAWK, HARPOON, and STANDARD (SM-2) missiles as well as a 5-inch, 54-caliber lightweight gun, the Close-in Weapon System (CIWS), and antisubmarine torpedoes. This ship will also incorporate enhanced survivability and damage control features. Congress funded the lead ship in the class in FY 1985. In FY 1987, two follow-on ships were approved. Twenty additional ships of this class are planned over the next 5 years.

The Soviets have over 300,000 naval mines and the capability to plant them near sea lines of communication (SLOCs) and chokepoints and in key ocean and harbor areas. To counter this threat, more effective US mine warfare platforms, such as the AVENGER-class mine countermeasures ship (MCM)-1, will be needed.

Amphibious warfare ships are uniquely designed to support assault from the sea against defended positions ashore. They must be able to sail in harm's way and provide a rapid buildup of combat power



CG-47 USS TICONDEROGA

ashore in the face of opposition. The United States maintains the largest and most capable amphibious force in the world, and the current building program will further enhance that capability as newer units join the Fleet. Congress has appropriated two WASP LHD-1-class amphibious assault ships to date. The budget includes funds for the construction of LHD-3 and long-lead material for LHD-4. Funds are also included in the budget for the first dock landing ship (LSD)-41 Cargo Variant (CV). This ship will have the mission of transporting and launching amphibious craft, cargo, and vehicles and of providing docking and repair services for conventional landing craft and two landing craft, air-cushion (LCAC). The FY 1988 shipbuilding budget also includes funds for three MCM-1 mine countermeasures ships, two TAO-187 fleet oilers, and three TAGOS ocean surveillance ships.

Amphibious Forces

The Navy-Marine Corps amphibious team is an effective combat force for deterrence and power

projection. The mobility of the amphibious task force permits it to concentrate combat power when and where needed to accomplish the assigned mission, and then move on to other tasks. The Marine air-ground task force (MAGTF) consists of headquarters, ground combat, aviation combat, and combat service support elements capable of forcible entry ashore to seize and control strategic chokepoints and lodgments essential to theater campaign plans. MAGTFs are organized and equipped primarily for amphibious operations but are also capable of responding to a variety of contingencies not requiring amphibious operations.

The MAF is the largest MAGTF. It is normally formed from one division, an aircraft wing, and a force service support group. During FY 1988, the Marine Corps will maintain three MAFs within its active structure, one in the Western Pacific and one on each coast of the United States. Upon mobilization, the Selected Marine Corps Reserve can augment or reinforce the three active MAFs or provide



USMC AMPHIBIOUS TRACTOR VEHICLES

a fully capable Marine Division, a Marine aircraft wing with reduced capability, and a Force Service Support Group with limited capabilities.

The firepower of the MAF has been improved by the increased effectiveness and range of the M198, 155mm towed howitzer. Further, each MAF's counterfire capability will be improved by the activation of the last of three target acquisition batteries by FY 1988. Each MAF's antiarmor capability has been significantly increased with the addition of a TOW platoon to each infantry regiment. Other antiarmor improvements include procurement of an improved light antitank weapon and improvements in the capability of the DRAGON antitank weapons in each infantry battalion.

Tactical mobility for ship-to-shore operations is being improved by the replacement of older amphibious ships with the highly capable LHD-1, LSD-41 and LSD-41 CV ships. Amphibious assault capability is also being improved by the introduction of LCAC and assault amphibian vehicle service life extension program (AAV SLEP). The LCAC can carry a 60-ton payload from an over-the-horizon launch to the beach at speeds in excess of 40 knots. Initial delivery of LCACs began in FY 1985 with initial operational capability (IOC) in FY 1986. In addition, the SLEP has extended the life of existing amphibians into the 1990s. Armored mobility and firepower on the ground have been improved with the further fielding of the light armored vehicle (LAV). Three Active Component LAV battalions have been activated. A Reserve Component LAV battalion is being activated in 1987/1988.

The modernization of Marine aviation continues with the acquisition of CH-53E heavy lift and AH-1W attack helicopters. CH-53E lift capability permits airlift of over 93 percent of a division's combat essential equipment. The AH-1N provides an attack helicopter capable of operations in high-altitude/hot weather conditions and employment of the HELLFIRE, SIDEWINDER, and TOW weapon systems. Figure V-6 depicts major Marine Corps modernization programs. In the future, the flexibility of the MV-22 OSPREY will complement ground tactical mobility. The tilt rotor MV-22 will be self-deployable with a speed in excess of 250 knots. It will be a potent lift vehicle capable of transporting 24 combat-loaded Marines from a variety of basing options and environments.



USMC CH-53E

Marine Corps Modernization

<u>System</u>	<u>Description</u>	<u>Status</u>
CH-53E _____	Heavy lift helicopter	Three squadrons operational
AV-8B _____	VSTOL attack aircraft	In production, two squadrons operational
F/A-18 _____	Fighter/attack aircraft	In production, 6 of 12 squadrons converted from F-4
AAV _____	Assault amphibious vehicle	Undergoing major upgrades and service life extension
LAV _____	Light armored vehicle	In production, operational
LCAC _____	Air-cushion landing craft	In production, operational FY 1986
MV-22 _____	Vertical lift aircraft	In development
AH-1W _____	Attack helicopter	In production, IOC Oct 1986

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FIGURE V-6

Special Operations Forces

Revitalization of our Special Operations Forces (SOF) continues to be one of our highest priorities. Although direct confrontation with the Soviets remains the most dangerous threat to US interests, the most likely conflict will be of a low-intensity nature based on Soviet, Eastern Bloc, and surrogate exploitation of regional conflicts and instabilities. Terrorism, whether state-sponsored or conducted by independent groups, remains a real and constant threat to American citizens and property throughout the world. Trained, organized, and equipped to conduct operations ranging from counterterrorism to unconventional warfare to direct action, SOF are ideally suited to respond quickly to threats to national military, political, economic, or psychological objectives.



SPECIAL OPERATIONS FORCES IN TRAINING

SOF revitalization is primarily directed toward correcting deficiencies in the areas of force structure, equipment modernization, and unit readiness. The Services continue to make steady progress toward correcting recognized deficiencies. The introduction of the CV-22 OSPREY as a primary part of SOF revitalization will provide the needed capability for

modernized vertical airlift. Figure V-7 lists the Service SOF and outlines major SOF initiatives under way.

Of special interest is the issue of joint SOF command and control. Recently, the Congress and the Joint Chiefs of Staff independently examined this issue and each determined that the establishment of a separate command was the most effective means of improving our capability to conduct joint special operations and resolve identified special operations deficiencies. The Congress passed legislation, signed by the President on 18 October 1986, creating a four-star SOF Unified Combatant Command. The legislation requires implementation within 180 days of enactment into law. The SOF Unified Combatant Command will centralize the management and oversight of SOF resources, training, readiness, doctrine, interoperability, and equipment requirement validation while preserving the regional CINCs' capability to employ SOF in-theater through their own respective Special Operations Commands.

EMPLOYING AND SUPPORTING THE FORCES

Force Capabilities

The United States continues to maintain a qualitative advantage in both trained personnel and fielded systems. However, the advantage afforded by superior quality continues to erode as the Soviets field modernized systems in significant quantities.



M-1 ABRAMS MAIN BATTLE TANK (MODIFIED)

US Special Operations Forces

<i>Service</i>	<i>Current Forces</i>	<i>Initiatives</i>
ARMY	Active	• 1 Special Operations Command 4 Special Forces Groups 12 Special Forces Battalions 1 Ranger Regiment 3 Ranger Battalions 1 PSYOP Group 1 Civil Affairs Battalion 1 Aviation Battalion
	Reserve	• Additional Special Forces group • Increases in Special Forces and PSYOP personnel, helicopters, and staff support • Equipment improvements • Additional special operations aviation battalion and brigade headquarters • Modify MH-47E and MH-60X • Increased language capability/area orientation • Equipment modernization • Additional assault helicopter company
NAVY	Active	• 4 Special Forces Groups 12 Special Forces Battalions 3 Civil Affairs Commands 5 Civil Affairs Brigades 4 Civil Affairs Groups 24 Civil Affairs Brigades 1 Aviation Battalion
	Reserve	• 2 NAVSPECWAR Groups 3 NAVSPECWAR Units 6 SEAL Teams 2 SEAL Delivery Vehicle Teams 2 Special Boat Squadrons 2 Special Boat Units 3 Dry-Deck shelter-capable submarines • Additional SEAL team • Procurement of specialized equipment • Construction of special facilities and support craft • 3 Dry-Deck shelter-capable submarines per fleet
AIR FORCE	Active	• 6 NAVSPECWAR Group Detachments 2 NAVSPECWAR Task Groups 1 SEAL Detachment 2 Special Boat Squadrons 4 Special Boat Units 1 Engineer Support Unit 2 Light Attack Helicopter Squadrons
	Reserve	• 1 Numbered Air Force 1 Special Operations Wing 5 Special Operations Squadrons 1 Combat Control Squadron • Procure MC-130 COMBAT TALON II aircraft • Modify MH-53 PAVE LOW III - enhanced helicopters • Procure AC-130U SPECTRE gunships • Procure CV-22 Tilt Rotor (VTOL) aircraft • Upgrade AC-130H and MC-130E navigation and avionics • Upgrade EC-130 VOLANT SOLO aircraft

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FIGURE V-7

The Soviets are also improving the capability of air-to-air and air-to-ground aircraft. As mentioned earlier, the SU-27 FLANKER and MiG-29 FULCRUM have become operational with a look-down/shoot-down capability and new medium beyond-visual-range air-to-air missiles. Although not fully matching the avionics capabilities or combat performance of the

corresponding F-15 and F-16 fighters, they pose a significant wartime air-superiority threat.

At sea, Soviet submarines are greater in number, while US submarines are quieter.

However, quality and quantity alone do not mea-

sure combat capability. The readiness of forces to perform their missions depends on the personnel, facilities, and material resources provided as well as how those resources are trained and maintained. The capabilities of US forces continue to improve because of successful recruiting and retention efforts, improved training, increased emphasis on the equipment modernization programs, and enhanced facilities and logistic support programs. Sustained funding is required to maintain the current momentum.

Munitions Availability and Utilization

A high rate of employment of modern munitions, along with lesser quantities of standard munitions during the early days of a conflict, is critical for rapid attrition of the numerically superior enemy forces. This mix will gradually shift to larger quantities of standard and lesser quantities of modern munitions as our forces become more survivable and enemy capabilities are reduced. To this end, munitions development must continue to provide solutions for upgrading present systems as well as developing smart munitions that incorporate advanced technology components such as sensors, signal processors, and real-time data processing.

From an effectiveness standpoint, replacing the existing stockpile of conventional munitions with new modern munitions is desirable. However, it is not prudent since our current investment in the stockpile is in excess of \$30B. The prudent solution is to utilize our modern munitions in such a way as to allow an early transition to the standard stockpile.

Chemical Capabilities

The adequacy of the US chemical warfare (CW) posture remains a matter of grave concern. The USSR continues to maintain the world's most significant capability to employ chemical weapons, despite the fact that it is a signatory to the 1925 Geneva Protocol. The United States, which is also a signatory, has a policy of no first use of chemical weapons. However, the United States reserved the right to retaliate should it or its allies be attacked with these weapons.

The United States has refrained from producing chemical weapons since 1969 in the hope that the Soviets would exercise similar restraint. The Soviet Union, meanwhile, has continued to develop its CW capabilities by a vigorous research and development effort, stockpiling large quantities of chemical agents, maintaining an extensive agent production capability, deploying chemical weapons with modern delivery



CHEMICAL WARFARE DEFENSIVE TRAINING

capabilities, and training extensively in CW. Since the mid-1970s, the United States has tried unsuccessfully to negotiate an effective, verifiable chemical weapons arms control agreement with the Soviet Union, while focusing its CW efforts on defensive capabilities and the maintenance of a limited retaliatory capability.

The United States has made some progress in its chemical defense program. Individual protective equipment is available to all Services; improved detection equipment has been fielded; and fixed and portable collective protection systems are being procured. Research and development is under way to provide better equipment, including medical pretreatments and antidotes. Figure V-8 outlines the current US chemical defense posture. Chemical defense programs require continued strong support.

Despite improvements in defensive chemical programs, a defensive chemical posture is not enough.

US Chemical Warfare Protection Capabilities

<i>Category</i>	<i>Currently Used</i>	<i>Planned Improvements</i>
• Individual protection	• Protective mask • Protective overgarment	• Improved mask • Less restrictive overgarments
• Collective protection	• Limited shelters	• Transportable shelters • Fixed site shelters • Shipboard upgrades • Portable modular systems
• Detection and warning	• Detection paper • Chemical agent alarm • Chemical agent detector kit	• Hand-held monitor • Unattended remote sensor • Point scanner • NBC recon vehicle
• Decontamination	• Individual decontamination • Decontamination apparatus • Chemical agent-resistant coatings • Lightweight decontamination system	• Non-water-based decontamination

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FIGURE V-8

The aging US stockpile of present-day weapons is rapidly losing its deterrent value. The United States must have a credible CW retaliatory capability to deter Soviet use of chemical weapons. The majority of US chemical munitions can no longer be used effectively in combat. The most critical deficiency is the lack of a persistent chemical agent filled munition that can be delivered against targets beyond artillery range. The Soviets can attack and degrade not only close-in targets but also airfields, logistic nodes, command and control facilities, and other functions. US and allied forces have a very limited capability to retaliate and impose similar degradations on the Warsaw Pact.

To provide a credible CW deterrent, the United States needs to acquire modern chemical munitions and improve delivery means. Only by establishing a credible CW retaliatory capability can the United States hope to enhance deterrence and persuade the Soviets to seriously negotiate a chemical weapons ban. Figure V-9 summarizes US retaliatory capabilities and modernization programs.

Reserve Force Contributions

Reserve forces, which constitute approximately 45 percent of the total force structure, play a key role in the implementation of US military strategy. Over one-third of the Army's combat divisions are in the Army National Guard; two-thirds of the combat

service support force structure are in the RC. The US Air Force Reserve provides 50 percent of the crews for the Military Airlift Command (MAC) Active/Associate Reserve C-5 and C-141 strategic airlift squadrons and the SAC KC-10 tanker-cargo squadrons in the Reserve Associate Program. In addition, 11 percent of the C-5 aircraft and 2 percent of the C-141 aircraft are in the RC unit-equipped role; 93 percent of the Air Force aeromedical evacuation aircrews, 52 percent of the tactical airlift aircraft, 51 percent of the reconnaissance aircraft, 79 percent of the CONUS strategic interceptor forces, and 34 percent of the tactical fighter forces belong to the Air National Guard and Air Force Reserve.

The Naval Reserve operates over 86 percent of the ocean minesweepers and contributes one-third of the total Navy medical support personnel. The Coast Guard provides 90 percent of port security forces for deployment ports. The Marine Corps Reserve provides 25 percent of the Marine Corps structure. This force consists of a division, aircraft wing, and force service support group.

Reserve forces play an important role in day-to-day operations. Within the last year, over 30,000 Army and 6,000 Air National Guard and Reserve members participated in major international exercises. Of particular note was Exercise BLAZING TRAILS, in

US Chemical Retaliatory Capabilities

Inventory	CURRENT			PLANNED IMPROVEMENTS
	Amount of Total Inventory	Condition	Deficiencies	
• Persistent and Nonpersistent Nerve Agent Artillery	↑ 10%	• Useful	• Limited to artillery range • Wrong agent to weapon mix • Aging stockpile	Binary Systems • Against enemy frontline troops • 155mm artillery projectile with non-persistent agent • Against enemy follow-on troops and complexes • MLRS chemical warhead with semi-persistent agent • Against large enemy troop concentrations, airfields, and logistic complexes • BIGEYE bomb with persistent agent
• Nonpersistent Nerve Agent Bomb	↓	• Limited Use	• Wrong agent to weapon mix • Aging stockpile	
• Persistent and Nonpersistent Agent Small Artillery and Mortars	↑ 18%	• Limited Use	• Short range • High risk to friendly forces • Does not support modern tactics	
• Airborne Spray Tanks	↓	• Limited Use	• High risk delivery method • Does not support modern tactics	
• Bulk Nerve Containers • Bulk Mustard Containers	↑ 72%	• Of No Use	• No fill facilities • No useful munitions to fill	
• Other Configurations	↓	• Obsolete	• No delivery system	

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FIGURE V-9

which 10,000 members of Army Reserve and Army National Guard units serving their annual training constructed bridges and built and repaired 15 km of road in the rain forests of Panama and Honduras over a 4-month period. This exercise provided a real-world mission and outstanding training and demonstrated the US commitment to the welfare of our neighbors in Central America. Naval Reserve maritime patrol aircraft (P-3s) routinely perform land-based ASW patrols from bases in the Atlantic and Pacific. In addition to their primary mission of refueling SAC alert forces, Air Reserve force tankers support forces in Europe, the Pacific, and Alaska. Air Reserve aerial port teams regularly provide augmentation at major air terminals in CONUS and overseas. Tactical airlift forces provide over 12,000 hours per year of joint airborne/air transportability training missions. Air Reserve Force C-5 and C-141 aircrews routinely fly approximately 30 percent of MAC's missions worldwide. The increasing number of Naval Reserve Force frigates maintain wartime readiness while operating and exercising with active force ships. The Coast Guard reserve provides waterborne security for all space shuttle launches at Cape Canaveral, escort of TRIDENT submarines, and other events when

necessary to establish port security zones. During FY 1986, Marine Corps Reserves participated in 18 major exercises conducted in CONUS, Hawaii, Korea, Norway, Denmark, Panama, Canada, Philippines, Okinawa, and the Mediterranean area.

Recent trends have placed increased reliance upon RC forces to perform many missions that would be required in the initial stages of a crisis. However, these forces are not fully responsive because of legal constraints and lower combat readiness. Before placing further reliance on Reserve forces, the economic and strategic advantages of the current mix should be measured against the impact of national objectives, military strategy, and capabilities to perform warfighting missions in a timely manner.

Existing legislation can provide only limited early access to RC capabilities. In addition, a recent JCS analysis concluded that the 100,000 Selected Reserve ceiling available to the President under his callup authority should be raised to 200,000. This increase is essential to meet the needs of the unified and specified commands and to prepare the CONUS mobilization base for further expansion and has been approved by the President.

Training and Exercises

Realistic and challenging training is essential to the development and maintenance of US capabilities. Facilities such as the Army's National Training Center, the Marine Corps' Air-Ground Combat Center, the Air Force's Tactical Fighter Weapons Center, and the Strategic Training Route complex provide environments in which units can experience wartime conditions against realistic adversaries. In the joint arena, automated warfare simulations will be used by the Joint Warfare Center to enhance the training of commanders and staffs and to develop joint warfighting concepts and procedures. Data gathered at these and similar facilities allow the Services to improve doctrine, tactics, training methods, and unit operating procedures. Range modernization, acquisition of training simulators and devices, and the increased use of technology are helping to provide more effective, realistic training. Cooperative training projects with our NATO Allies provide economies of scale and enhance standardization of tactics and procedures.



BRIDGE-BUILDING DURING EXERCISE REFORGER

As an important extension of Service training, the exercise program directed and coordinated by the JCS provides opportunities to evaluate joint doctrine; tactics, techniques, and procedures; and command and control capabilities — knowledge essential to ensure the readiness of US forces to support the unified and specified commands. This program, which includes approximately 88 exercises per year, takes place throughout the world. The JCS Worldwide Command Post exercise program provides the staffs of the unified and specified commands the opportunity to deal with the difficult problems associated with mobilization, deployment, and employment of US combat forces. Additionally, combined exercises with allies provide the necessary interaction to test and evaluate combined systems, effectiveness of lines

of communication (LOCs), and adequacy of mutual support agreements.

In addition to supporting general training objectives, joint exercises demonstrate US resolve and the capability to project a military presence in support of national interests and commitments. The BRIGHT STAR series of exercises conducted in Southwest Asia demonstrates the US capability to project military forces into that region should the need arise. In Latin America, the annual AHUAS TARA and CABANAS exercises demonstrate US commitment to Honduran and Central American stability. Similarly, each year, seven South American countries participate in the combined Exercise FUERZAS UNIDAS. Panamanian defense forces also participate with US forces in the Canal defense exercise, KINDLE LIBERTY. In



AIRBORNE ASSAULT DURING TEAM SPIRIT

Europe, we practice the reinforcement of NATO with annual REFORGER/CRESTED CAP exercises. The Pacific region annually hosts the largest Free World combined training exercise — TEAM SPIRIT. Japan participates in exercises with US forces under the aegis of COPE NORTH while COPE THUNDER, which takes place in the Philippines, provides US and allied aircrews with training that greatly enhances combat survivability. The magnitude and scope of joint exercises continue to demonstrate resolve and support for US allies in all regions.

These various full-spectrum training and exercise programs are essential to maintaining the readiness of

theater-assigned/augmentation forces. The programs serve as an excellent means of testing all aspects of US reinforcement plans and the interoperability of host-nation general defense plans, systems, and procedures. The programs also demonstrate the capability to deploy substantial military power while providing a means for evaluating fighting concepts and procedures, interoperability, and force sustainment.

Service regional training initiatives are also essential to prepare RC personnel for their wartime mission. With emphasis on weekend training, the Navy has programmed 54 regional training sites. The Army has programmed both regional medical and maintenance training facilities. The latter will provide maintenance training with the battlefield mix of current and modern equipment using state-of-the-art test measurement and diagnostic equipment along with special tools and test equipment and training devices.

Mobility

US military strategy requires the capability to deploy forces rapidly and then sustain them. Air, sea, and land mobility forces must be able to deliver forces where they are needed in time to make a difference. The light infantry divisions and other management initiatives have done much to enhance this capability. Intertheater and intratheater airlift will generally transport deploying forces during the early days of a crisis until surge sealift arrives with the bulk of the deploying unit's equipment. These movements will include personnel and equipment supported by pre-positioned stocks. Sealift delivers follow-on forces and provides the sustaining power for deployed forces. Land mobility forces provide needed offload capabilities and, together with intratheater airlift and sealift, support onward movement requirements.

Airlift

Airlift is essential to protect US interests across the spectrum of conflict. During peacetime, airlift consists of a global air transportation network that supports normal lift requirements, exercises, humanitarian missions, and aeromedical evacuation. During wartime, airlift is crucial to the rapid worldwide deployment of US forces. Programmed increases in intertheater aircraft, continued acquisition of aircraft spares, extensions to service lives of existing aircraft, and the enhancement of Civil Reserve Air Fleet (CRAF) capabilities are contributing to maintaining

improvements in aircraft readiness and sustainability. A summary of airlift forces is shown in Figure V-10.

The FY 1988 funded airlift force will provide approximately 45.7 million ton-miles per day (MTM/D) of intertheater cargo airlift capability. However, this is still well below the current Department of Defense (DOD) goal of 66 MTM/D. This goal will be revalidated or revised as part of the Revised Intertheater Mobility Study (RIMS) now ongoing within the DOD. The acquisition of C-5Bs and additional KC-10s will continue the upward trend in intertheater



C-5B

US Airlift Forces

<i>Military Aircraft</i>	
Type	Number** (Active/Reserve)
C-5	67*/8
C-141	230*/4
C-130	202/304
KC-10	48*/0

<i>Civil Reserve Air Fleet</i>	
Type	Number**
Domestic _____	36
Alaskan _____	11
Short-range International (passengers) _____	13
Long-range International (cargo) _____	74
Long-range International (passengers) _____	247

* C-5, C-141, and KC-10s are jointly operated by Active and Reserve Associate Units

** Full Activation

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FIGURE V-10

airlift support. Wing repairs and modifications will extend the service life of the C-130B/E aircraft well past the year 2000.

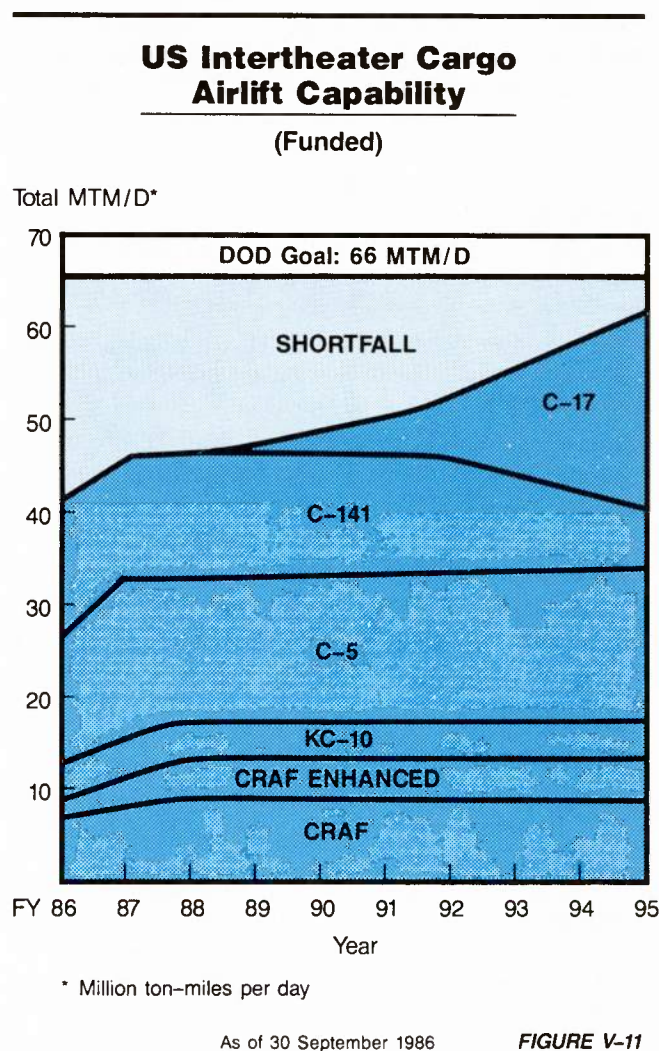
The CRAF consists of commercial aircraft voluntarily committed by US civil air carriers to serve during national emergencies. The CRAF Enhancement Program is designed to modify passenger aircraft into convertible freighters suitable for bulk and oversize cargo. The airlines received one DC-10 and six more B-747s through FY 1986. A total of 19 B-747s and 2 DC-10s are funded for modification. These modified aircraft will provide an additional 3.0 MTM/D of cargo capability. FY 1988 funding will allow beginning acquisition of equipment needed to convert 85 civilian B-767 and 30 MD-80 aircraft to perform aeromedical evacuation. Additional aeromedical evacuation capability will be provided by the C-17 operating in the direct delivery mode.

The C-17 is programmed to reduce further the airlift shortfall with the initial operational capability scheduled for FY 1992. This aircraft will provide increased intertheater and intratheater capabilities to deliver troops and all categories of cargo, including outsize, to field commanders using normal and combat offload techniques, outsize airdrop, or low-altitude parachute extraction. The in-flight-refuelable C-17 has outstanding ground maneuverability and takeoff and landing profiles designed to allow routine operations at small, austere airfields. These features will provide considerable operational flexibility. The C-17 will replace part of the C-141B fleet as that aircraft approaches the end of its useful service life. The C-17 also offers the additional bonus of offsetting capabilities lost when the older C-130s retire. A summary of programmed intertheater cargo airlift capability is shown in Figure V-11.

Sealift

In any major overseas deployment, sealift will deliver about 95 percent of all dry cargo and 99 percent of all petroleum products. However, the number of militarily useful US-flag dry cargo ships available to support deployments continues to decline with little hope of resurgence in the near term. Reductions are also occurring in the US clear product tanker fleet. However, these reductions are being offset by the incorporation of newer, larger tankers into the strategic sealift fleet.

The US-flag merchant marine's decline necessitates a large pool of government-owned shipping,



such as the Ready Reserve Force (RRF), to furnish readily available lift capacity that is needed in time of mobilization. The RRF provides the surge shipping needed early for a deployment. In 1985, the Navy began to locate some of the RRF ships at activation ports to improve their response time upon mobilization. Ships in the National Defense Reserve Fleet (NDRF), a second set of government-owned shipping, are a valuable but aging asset, currently capable of providing approximately 125 ships for sustainment requirements/attrition replacements. A crucial factor in the employment of the NDRF will be the availability of trained crews to adequately man these vessels.

The sealift support from our allies has become increasingly important. This support is necessary to offset the continued decline in US commercial sealift assets. NATO has promised up to 400 ships

for the rapid reinforcement of NATO, and Korea has promised 32 ships for its support. However, the NATO shipping pool is also declining. This fact may in the future cause NATO to institute some type of government controlled shipping pool similar to the US RRF. Strategic sealift resources are shown in Figure V-12.

Strategic Sealift Resources		
(Funded)		
<u>Non-Gov't Controlled Ships</u>	<u>Dry Cargo</u>	<u>Tankers</u>
US Flag Merchant Ships _____	170	127
Effective US Controlled (EUSC) _____	23	96
<u>Government Controlled Ships</u>		
<u>Military Sealift Command</u>		
• Common User Ocean Transportation _____	10	20
• Afloat Prepositioning Force (APF)		
Maritime Prepositioning Ships (MPS) _____	13	
Prepositioning Ships (PREPO Ships) _____	8	4
• Reduced Operating Status (ROS)		
Fast Sealift Ships (FSS) _____	8	
Aviation Logistic Support Ship (TAVB) _____	1	
• Ready Reserve Force (RRF) _____	69	8
<u>Maritime Administration (MARAD)</u>		
• National Defense Reserve Fleet (NDRF)		
NDRF Useful _____	29	16
NDRF Victory Ships _____	96	
US Total	427	271
<u>Allied</u>	<u>Cargo</u>	<u>Tankers</u>
NATO Pool _____	400	61
Korean Flag Ship (KFS) Pool* _____	32	4
Allied Total	432	65

* Not intertheater assets

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FIGURE V-12

Other strategic sealift programs are also under way. Eight SL-7 class containerships have been purchased and converted to Fast Sealift Ships, an enhanced partial roll-on/roll-off (RO/RO) configuration. One of two aviation logistics support ships (TAVB) completed conversion in FY 1986 and has been placed into an RRF-like status. The second TAVB will be delivered in 1987. These ships will provide the lift for intermediate-level maintenance facilities to

support Marine Corps aircraft. Two tankers are being converted into hospital ships (TAH) with delivery in FY 1987. In addition, the auxiliary craneships (TACS) program has been converting containerships to craneships in order to create the capability to offload non-self-sustaining shipping either pierside or in-stream.

Logistics Over the Shore (LOTS)

The ability to rapidly load, offload, and transfer unit equipment, bulk liquids, ammunition, and supplies is required to keep pace with airlift and sealift deliveries. Mobility analyses, such as the DOD Sealift Study, have identified the requirement to project a large, balanced force into a bare environment like those found in the Western Pacific, Southwest Asia, or Central and South America. A major program is now under way to modernize and upgrade the Army's watercraft fleet to meet LOTS requirements. In the near term, LOTS capability will be improved through the addition of another company of LCAC-30 air-cushion vehicles, the purchase of discharge systems such as modular causeways and RO/RO discharge facilities, and the procurement of logistics support vessels (LSVs) and Landing Craft, Utility (LCU), and large tugboats. The Army LOTS program totals \$770M through FY 1992 for research, development, and acquisition of new watercraft to provide the capability to meet a minimum LOTS requirement of 21,000 short tons daily. Under the Logistics Civil Augmentation Program (LOGCAP), the Army is establishing contingency contracts for commercial tugboats to supplement Army organic capability during mobilization. The Army and Navy are coordinating closely under the umbrella of a joint memorandum of agreement to procure, whenever possible, common and interoperable offload and discharge systems to ensure system compatibility, minimum overall cost to the Department of Defense and maximum program support during the budget process.

Pre-Positioning

To overcome limitations of airlift and sealift, US programs for pre-positioning petroleum, water, supplies, equipment, and ammunition are in progress in various regions of the world. Such pre-positioning reduces rapid-deployment cargo requirements by locating essential materials where US forces would most likely be needed. Under the pre-positioning of materiel configured to unit sets (POMCUS) program (pre-positioned materiel configured to unit sets), equipment is being pre-positioned in Europe for Army divisions and numerous nondivisional support units.

The POMCUS program for Europe, the Marine Corps land pre-positioning in Norway, the war reserve stock for allies (WRSA) program for Korea, and important initiatives for Southwest Asia provide essential strategically located material.

Afloat pre-positioning allows the rapid movement of equipment and supplies from one region to another as priorities or circumstances dictate. The Afloat Pre-positioning Force consists of two elements: the maritime pre-positioning ships (MPS) program and the pre-positioning (PREPO) ships program (formerly near-term pre-positioning force (NTPF)).

The MPS program combines the responsiveness of airlifted Marines with sealift delivery of pre-positioned equipment. The 13 ships involved in the program are organized into 3 MPS squadrons. The ships will carry equipment and 30 days of supplies for three MABs. The first squadron is deployed to US Atlantic Command's (USLANTCOM) area; the second is at Diego Garcia; the third deployed to US Pacific Command (USPACOM) last year. The PREPO ships are in the Mediterranean Sea, Pacific Ocean, and Indian Ocean carrying equipment and supplies for the Army, Navy, and Air Force.

Sustainability

Sustainability is the staying power of military forces once they are deployed. The most significant component of this is materiel sustainability. Materiel sustainability is composed of several interdependent elements, including theater pre-positioned stocks, CONUS depot stocks, host-nation support, and the industrial production base. Over the past several years, Service program efforts have improved US sustainability worldwide; however, the pre-positioning objectives represent only the minimum quantities required to sustain combat forces until the SLOCs can be securely established.

Ammunition

Although ammunition stockpiles have improved, commanders continue to identify inadequate ammunition stockpiles as a significant constraint on their combat capabilities. These shortages are particularly acute for the more modern munitions that provide increased firepower while reducing delivery system vulnerability. The Services have continued to fund increases in war reserve ammunition stockage. Additionally, the United States has been encouraging allies to improve their own ammunition sustainability and to produce munitions compatible with US pre-positioned stocks within their countries.

Petroleum, Oils, and Lubricants

Efforts continue to increase petroleum war reserves. Competing priorities for funds within NATO have delayed major improvements to the Central European Pipeline System to increase both hardened storage capacity and throughput capability. It is becoming increasingly more important to rebuild DOD land and ocean distribution assets so available stocks can be rapidly repositioned where and when needed. The Army and Navy are progressing with the development of the Offshore POL Discharge System (OPDS) which will allow bulk fuel discharge from large tankers across an unimproved beach or damaged port. OPDS supports the fuel requirements of Army, Air Force, and Marine Corps units operating ashore.

Major Items and Repair Parts

As with other classes of supply, there have been improvements in the war reserve posture of major items as well as spares and repair parts in recent years. Nevertheless, available stocks continue to be far below worldwide requirements and are an item of concern for commanders. In part, this is the result of long leadtimes for acquisition. Additionally, these items are generally high cost and receive a relatively low priority when competing for funding at a time when there continue to be shortages in peacetime operating assets and unit authorizations.

Military Construction

The NATO Alliance agreed in 1984 to support significant increases in infrastructure funding for 1985 through 1990. This level of funding represents more than a 50-percent real increase over annual funding for 1980 through 1986. This funding will lead to completion of minimum essential facilities for reception of US tactical aircraft at all collocated operating bases. It will also permit NATO to improve airbase survivability by construction of hardened aircraft shelters and support facilities and to continue planning for improved command and control capabilities.

In Southwest Asia, the objective of military construction programs is to provide a network of facilities to support pre-positioning of materiel and pre-deployment, staging, and employment of USCENTCOM forces. To date, airfield improvements and construction of logistic support facilities have greatly enhanced the US ability to deploy and sustain US forces in the region. In addition, leased warehouses will facilitate the pre-positioning of materiel, and port dredging will enhance fleet support. Negotiations for

basing privileges, access, and pre-positioning agreements are continuing and are a necessary preliminary for expanding current facilities in Southwest Asia.

Throughout the Pacific, host nation and US military construction are continuing to improve POL, munitions, medical storage capabilities, and the working and living conditions for US military personnel. Since its inception in 1979, Japan has funded about \$1.4B under the facilities improvement program, and budgeted an additional \$322M for Calendar Year (CY) 1986. Such funding is supporting, in part, the stationing of two F-16 squadrons in Japan, the first of which became operational in January. Republic of Korea (ROK)-funded construction projects will enhance the combat support and survival of US forces deployed to Korea. However, additional military construction (MILCON) is needed in Korea, Japan, Guam, and the Philippines to maintain readiness in the region.

In Central America, recently completed MILCON has provided a limited capability at two Honduran air bases. Additional air bases in Honduras must be upgraded to improve joint and combined exercise capability. In Panama, MILCON is critical to provide adequate aircraft parking and facilities at Howard Air Force Base/Fort Kobbe to alleviate dangerously crowding normal peacetime operations.

Wartime Host-Nation Support

Wartime host-nation support (WHNS) provides essential support to the LOCs, including reception, onward movement staging, and resupply to US forces deployed to foreign countries during times of tension or war. This support is made available to US forces through a process of negotiated bilateral agreements and development of detailed joint logistic plans. Assurance of this support through international agreements enhances sustainability of combat forces and lends credibility to the concept of a viable conventional defense posture. Supreme Allied Command Europe's (SACEUR's) Rapid Reinforcement Plan depends on WHNS in order to avoid costly duplication of both personnel and equipment to provide the requisite combat support/combat service support. Progress continues as the detailed arrangements contained in the joint support plans are further refined with NATO Allies. In the Pacific arena, Korea provides valuable wartime support by enhancing the flow of essential logistics through the use of its airline, shipping, and traffic management assets; and Japan provides important peacetime facilities and assistance

which improve the capabilities of US forces in Japan to respond to contingency situations.

Medical Support

Shortfalls continue to exist in US medical support capabilities; however, significant progress has been made to narrow the gap between capabilities and requirements. If US forces were simultaneously engaged in Western Europe, Southeast Asia, and Northeast Asia, the Services could currently provide 34.1 percent of the estimated 110,300 hospital beds required for a minimum 15-day theater evacuation policy. Current programs fund 15,900 new beds in FY 1987 and 8,300 beds in FY 1988. These beds, plus those prior-year procurements, will increase the total medical support capability to 93.9 percent of the programmed requirement. These medical assets are expected to be available for deployment by FY 1990. Deployable medical systems must be funded at the programmed level to ensure acceptable medical care for theater combat forces. Active solicitation of WHNS will be continued to support wartime bed capabilities.

Environmental Support

Force commanders require accurate and timely environmental information in order to fully exploit military force capabilities. Congress must continue to fund military weather and space support programs that maintain the readiness of this combat force multiplier.

Intelligence

Access to accurate, timely intelligence is essential for the NCA, JCS, and military commanders to effect timely political and military decisions. Intelligence provides decisionmakers with assessments of enemy forces, capabilities, and probable courses of action. Expansion of collection capabilities, in particular human-source intelligence (HUMINT) to augment the capabilities of reconnaissance systems, is essential for enhanced coverage.

Reconnaissance Systems

The US reconnaissance program provides capabilities to meet many peacetime and wartime information collection requirements. Reconnaissance resources consist of strategic and tactical standoff and penetration systems. These systems provide intelligence data that might otherwise be denied to operating forces during crises and wartime.

Strategic airborne systems include U-2R, SR-71, RC-135, and EP-3E aircraft that carry a variety of sen-

sors. Tactical aircraft standoff systems include the Air Force TR-1, EC-130, and RC-135; the Army RC-12, RU-10, RU-21, EH-1, EH-60, and OV-1D; the Navy EP-3E, EA-3B, and EA-6B; and Marine Corps EA-6B. The only Air Force tactical reconnaissance aircraft used in a penetrating role is the RF-4C with photo, infrared, side-looking airborne radar, and tactical electronic reconnaissance capabilities. The Navy uses the F-14 Tactical Air Reconnaissance Pod (TARP) System, and the Marines employ the RF-4B in a similar role. Planned improvements to strategic and tactical systems provide for additional TR-1 and U-2R aircraft and installation of the Advanced Synthetic Aperture Radar System (ASARS) on TR-1 aircraft. Considerable improvements have been made in U-2R, SR-71, and RC-135 wartime survival response posture. Further improvements are being developed. RF-4 enhancements include an upgrade with electro-optical sensors and a ground terminal program for dissemination of information. Also included are the Navy's conversion of the EP-3E and the Carrier Battle Group Passive Horizon Extension System.



SR-71

The P-3 aircraft provides primary ocean surveillance for both surface and subsurface targets. Acoustic ocean surveillance of submarine activity is provided by the tactical and surveillance towed array sonar system.



U-2R

Collection, Processing, and Intelligence Dissemination Systems

The collection, processing, and dissemination of tactical intelligence will benefit from developments in high-capacity data links, tactical intelligence fusion systems, improved sensors, and related processors; e.g., the USCINCEUR Tactical Reconnaissance System, Army-Air Force Joint Tactical Fusion Program, Army-Air Force Joint Surveillance and Target Attack Radar System/Ground Station Module (JS-TARS/GSM), Army GUARDRAIL/Common Sensor Systems, and Navy Ocean Surveillance Information System Baseline Upgrade. The Advanced Deployable Digital Imagery Support System (ADDISS) and Improved GUARDRAIL, for example, will eventually provide tactical commanders the means to collect and assimilate information quickly from national and tactical sensor systems. The Commanders' Tactical Terminal, now under development, will facilitate dissemination of signals intelligence data.

Command, Control, and Communications (C³)

Effective C³ is essential to the successful employment of military forces. Command and control systems are made up of people, facilities, equipment, procedures, and communications systems designed to assist in planning, directing, and controlling military forces. Improvements in secure, interoperable, and survivable C³ systems for tactical forces have traditionally lagged behind those provided strategic forces.

C³ interoperability is the key to successful conduct of joint and allied operations. Coordination of combined operations cannot be achieved without it. Combined C³ interoperability provides the leverage for forces of the United States and other countries to be an effective counterweight to larger forces of the Soviet Union. Technological and doctrinal changes, particularly in the cryptographic area, require persistent attention to maintaining interoperability and improving it in the future.

The E-3 Airborne Warning and Control System is undergoing extensive modification and enhancement to ensure survivable command and control (C²) to meet the evolving thrust.

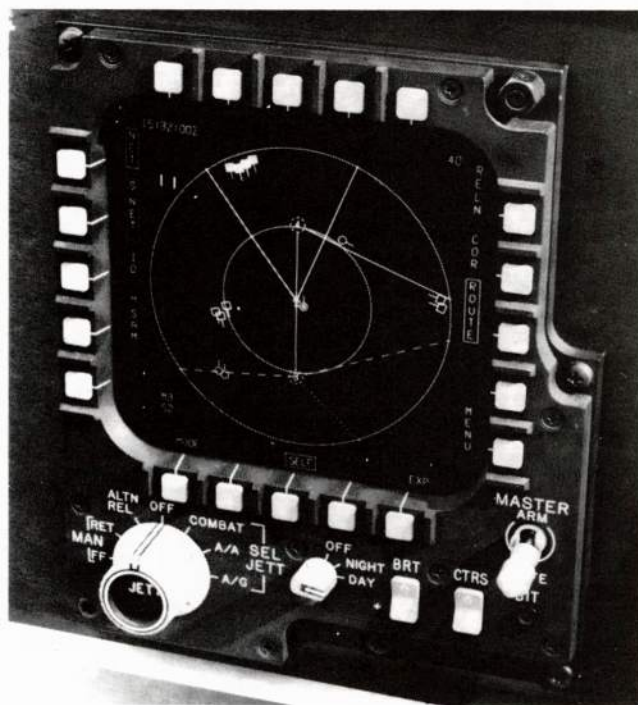
Modular control equipment will enhance tactical C² flexibility and survivability and will interoperate with joint and allied services. It will integrate tactical surveillance sensor inputs for improved air defense and offensive force execution.

The Joint Tactical Information Distribution System (JTIDS) will significantly improve the CINCs' ability to exchange tactical information using digital communications among tactical units. Tactical ultra high frequency (UHF) air communications are also being upgraded with antijam systems, such as HAVE QUICK. Communications for tactical commanders will be improved by such programs as the Ground Mobile Forces Satellite Communications Program; the fielding of Joint Tactical Communications Programs, Mobile Subscriber Equipment (MSE), and the Single Channel Ground-Airborne Radio System (SINCARS); and the implementation of message standards for Joint Interoperability of Tactical Command and Control Systems (JINTACCS). The Worldwide Military Command and Control System (WWMCCS) Information System (WIS) will replace existing WWMCCS standard automatic data processing (ADP) capabilities for worldwide C². WIS will both modernize WWMCCS standard ADP and provide new capabilities that are now possible because of major advances in ADP and communications systems. WIS is the first ADP C² system being managed under the acquisition guidance contained in DOD Directive 5000.1 and being developed and implemented using Ada, the DOD standard high-order language.

The Position Location Reporting System (PLRS), a joint Army-Marine Corps command and control program, will improve the ability of tactical commanders to locate and identify deployed friendly forces. The

Army will enhance the capabilities of PLRS by adding a data distribution feature. The enhanced PLRS and the JTIDS make up the components of the Army Data Distribution System (ADDS). JSTARS, which is being developed to improve target acquisition and weapons placement and battle management, will complement PLRS.

Effective Defense-wide communications systems are essential for the command and control of strategic and tactical forces, as well as their logistic, intelligence, navigation, and meteorological support. The Defense Communications System (DCS) provides US military forces with worldwide voice, data, and teletype services through networks of government and commercial facilities. An ongoing USCENCOM communications requirement is to extend DCS service into the Southwest Asia (SWA) regions. In response to increased requirements, DCS subsystems are undergoing changes that enhance survivability, expand transmission security, improve interoperability, and increase flexibility in response to increasing requirements and the necessity of replacing aging, nonsupportable equipment. Improvements include an increase in the number of switching systems and transmission paths, addition of physical and transmission security features, and development of countermeasures to protect network control facilities against computer manipulation.



USAF JTIDS

To expand secure voice and replace Automatic Secure Voice Communications (AUTOSEVOCOM), a Secure Voice Improvement Program (SVIP) is being implemented for widespread DOD and civil government use. SVIP will employ encryption techniques and technology derived from a secure telephone unit developed by the National Security Agency. Interoperability between the DCS and other military secure networks will be accomplished by facilities being developed under the SVIP, the Red Switch Project (RSP), and the Secure Conferencing Project (SCP).

The RSP will provide a command and control secure voice switching capability to support existing and future requirements of the National Military Command Center (NMCC), and Alternate National Military Command Center (ANMCC), and primary command centers of the unified and specified commands. These switches will significantly improve command and control communications through rapid interoperability with other DCS and tactical secure voice systems supporting the NMCS worldwide.

The SCP will provide improved, survivable communications in conjunction with the Jam-Resistant Secure Communications (JRSC) Program. Together, the SCP, SVIP, and RSP will replace the current secure conferencing capability in the 1990s.

Guidelines for increasing the survivability and interoperability of DOD telecommunications systems are being developed. However, modernization of the DCS, needed now, will take at least 10 years because of current and projected funding levels and technical problems, particularly multilevel security devices.

Increased dependence on UHF and super high frequency (SHF) satellite transmission paths to meet data flow requirements demands increased capacity, jam-resistant technology, and alternative media such as modern high frequency (HF) systems. HF radio is considered a primary mode for sustaining essential communications capability during wartime. Equipment must be designed to withstand the rigors of modern battle, including the effects of electromagnetic pulse (EMP), jamming, nuclear effects, and nuclear, biological, and chemical (NBC) warfare.

Electronic Combat (EC) and Command, Control, and Communications Countermeasures (C³CM)

EC systems are an integral part of the total capability of US forces to fight and survive on a modern

battlefield. EC systems maximize the effectiveness of friendly forces while reducing enemy capability to use the electromagnetic spectrum. The worldwide threat to US forces is extremely diverse, encompassing the entire range of frequencies from extremely low frequency communication to directed energy weapon developments. The rapid introduction of new hostile weapon systems and incorporation of advanced technologies significantly stress the EC capability of existing US forces. Our EC capabilities must keep pace with this threat by introducing new state-of-the-art systems and improving existing systems as practical. A comprehensive DOD Electronic Combat Plan was prepared under the direction of the Office of the Assistant Secretary of Defense-Command, Control, Communications and Intelligence (C³I) and approved by the Secretary of Defense in June 1986. This plan describes the collective efforts of the Services to prepare and program for US EC missions and provides a roadmap to increase the use of joint and common programs. The plan focuses on the programmatic and technological aspects of EC from three mutually supportive perspectives: mission, technology, and resources.



EF-111

C³CM remains an essential element of modern combat capability. It is a capability through which US forces destroy, disrupt, or otherwise degrade the enemy's ability to control its forces effectively while protecting friendly C³ systems. On the modern battlefield, headquarters staff, field, and tactical commanders must emphasize C³CM strategy and training to translate existing battlefield resources (men, munitions, and weapon systems) effectively into usable combat power.

Joint Perspective

Role of the Commanders of the Unified and Specified Commands

The CINCs command the forces assigned to them in both peace and war and have regionally or functionally oriented responsibilities. The major commands are designated as either unified or specified. Unified commands are composed of major forces from two or more Services and have a broad continuing mission to plan and, if necessary, to execute military operations in support of US national security objectives. A specified command is one with a broad continuing functional mission and is usually composed of forces from one Service. Figure V-13 identifies the unified and specified commands and their areas of responsibility.

The Services are charged with providing forces to the CINCs and supporting those forces. Although the CINCs are not directly responsible for training and equipping forces, they are playing an expanding role by influencing these factors through active participation in the DOD resource process. The same amendment to Title 10 mentioned earlier has clarified the responsibilities of the commanders

of the unified and specified commands and ensured that their authority is fully commensurate with the responsibility for the accomplishment of their assigned missions. (See the expanded discussion of military organization and command in Chapter VI.) The Joint Chiefs of Staff, together with the Services and CINCs, continue to implement several joint programs with the goal of increased Service interoperability, improved joint warfighting capability, and more efficient management of limited resources.

Unified Transportation Command

Numerous proposals have been made in the past to integrate airlift, sealift, and traffic management provided by the Air Force, Navy, and Army transportation commands to assure responsive and efficient deployment of combat forces in wartime and contingencies. The Joint Deployment Agency was created to coordinate and manage force deployment planning and execution, but a lack of authority has inhibited its effectiveness. The Joint Deployment System (JDS) is designed to assist in effective deployment planning and provide active management during force deployment execution. The JDS provides timely change capability and visibility of force movement to all deployment participants linking the NCA, trans-

Commanders' Area of Responsibility*



As of 30 September 1986

FIGURE V-13

portation operating agencies, force providers, and force users. The JCS have responded to identified deficiencies in the planning and management of the deploying forces and have proposed significant modifications to transportation planning in order to correct longstanding gaps in planning and coordination.

The Chairman, JCS has recommended for SECDEF approval a unified transportation command (UTC) comprised of appropriate elements of the three Service transportation commands and the Joint Deployment Agency.

Unified Special Operations Forces Command

As previously discussed, Congress recently passed legislation creating a four-star SOF Unified Combatant Command. At present the JCS are in the process of determining the optimum structure, location, and other critical aspects of establishing the command to ensure that the legislative deadline is met without sacrificing operational efficiency.

Joint Doctrine

Military doctrine provides the fundamental principles by which forces are employed. Joint doctrine provides the foundation by which multi-Service forces are employed in support of national objectives. This perspective provides a framework for the development of solutions to facilitate superior joint warfighting capabilities. The joint communities can achieve many low-cost operational improvements by emphasizing interoperability.

The Chairman and the Joint Chiefs of Staff have continued to guide the process of joint doctrine development and Service interoperability. Although not every future military operation will be a joint venture, the Services have unique roles to play in combat and must be prepared to operate in coordination with other Services when the situation warrants. The Commander in Chief, US Atlantic Command (USCINCLANT) continues to lead the development of doctrine for strategic and tactical air support of maritime operations. The Commander in Chief, US Europe (USCINCEUR) is leading the development of doctrine for follow-on forces attack and has completed joint doctrine for theater counterair. The Psychological Operations Division of J-3 is developing joint planning doctrine for psychological operations. The common thread of these initiatives has been the recognition that the interoperability of warfighting forces is essential to conducting successful joint operations. By focusing on the areas

of interoperability, the Joint Chiefs of Staff and the Services will ensure payoffs to the CINCs through more efficient force utilization and increased combat capability.

Combined Doctrine

Since the United States is a member of many military alliances, all Services must be prepared to integrate their forces with those of our allies during times of conflict. Combined doctrine has been developed through allied agencies to improve rationalization, standardization, and interoperability (RSI). Although this area has improved over the last several years, much remains to be done. The European theater remains the focus of this activity, with NATO agencies working to meet the challenge of standardization among its member nations. In the Pacific theater, bilateral relationships form the basis for integrating US and allied capabilities. Continuing efforts are producing significant results as our Pacific allies enhance their military capabilities.

Joint Initiatives

There are currently over 300 ongoing initiatives being worked to improve joint interoperability. The Joint Force Development Process (JFDP), established in 1984, is one example of ongoing efforts to improve joint warfighting capabilities. JFDP is designed to field the most effective, affordable forces in support of air-land combat operations. Of the original 31 initiatives, 12 are closed, 16 have been implemented, and 6 new initiatives addressed for a total of 37. Additionally, the Navy and Marine Corps have joined the cooperative effort with full participation in four initiatives and informal involvement in seven others. USCINCRD has been tasked with developing joint tactics, techniques, and procedures (JTTP) and with validating the Army/Air Force JFDP initiatives.

The Air Force and Navy have also undertaken a number of joint initiatives outside the JFDP in order to enhance combined effectiveness in maritime operations and operations ashore. Air Force and Navy efforts continue to be directed toward increased joint exercise and training, billet exchanges, and research and development.

Joint Staff Functions

As a result of congressional legislation, the joint staff will undergo a reorganization to better function in areas of increasing responsibility. A new directorate will be formed to provide a focal point

for interoperability. This directorate will include the functions of joint doctrine; joint tactics, techniques, and procedures; joint exercised, and consolidated operational planning. A second new directorate will be formed as a focal point for resource and force analysis. This directorate will combine the Strategic Plans and Resource Analysis Agency (SPRAA) with the Joint Analysis Directorate, and the force development functions of J-5.

Joint Program Management

In June, initial steps were taken to comply with some recommendations made by the President's Blue Ribbon Commission on Defense Management. A restructured Joint Requirements and Management Board (JRMB) was established. The new JRMB took over the responsibilities of the Defense Systems Acquisitions Review Council (DSARC), also, it will aid in defining and validating new systems requirements; examine tradeoffs between cost and performance; explore alternatives to new R&D starts (such as

off-the-shelf procurement and product improvement programs); and recommend full-scale development and high rate production in joint and major Service programs. The Vice Chairman, Joint Chiefs of Staff, was designated to serve as the Vice Chairman of the new JRMB. The functions and responsibilities of the old JRMB have been assigned to a newly designated Joint Requirements Oversight Council (JROC). The combination of the new JRMB and JROC will ensure that: (1) joint requirements are identified and acted upon; and (2) scarce DOD resources are used in the most economical manner.

In summary, the Chairman of the Joint Chiefs of Staff, Chiefs of the Services, and the CINCs continue to focus on the global nature of US national security objectives; the relationship of both nuclear and conventional forces to the strategy of deterrence; and the necessity to plan, size, equip, and train forces as they would be used in war.

CHAPTER VI. TOPICS OF SPECIAL INTEREST

INTRODUCTION

The preceding chapters addressed US security requirements and major military forces. This chapter outlines the status of arms reduction talks and discusses military space activities, Department of Defense (DOD) warfighting organization, defense manpower, international terrorism, European troop strength, and DOD support to drug interdiction.

ARMS NEGOTIATIONS

The United States participates in bilateral and multilateral negotiations on arms control to protect US and allied security interests, build global stability, and promote favorable international relationships. These negotiations are an integral part of the US national security strategy. Equitable and verifiable arms reduction agreements can contribute to security at reduced force levels. However, arms control cannot substitute for necessary force modernization; both efforts are mutually reinforcing elements of our national security and contribute significantly to the enhancement of stability and deterrence.

Any agreement is only as good as the willingness of the signatories to comply with the obligations assumed. A double standard of compliance cannot be allowed to develop. Soviet non-compliance with the major arms control agreements to which both sides have committed themselves is a continuing matter of serious concern and must be taken into account in the development of US defense programs and approaches to arms control. The Soviet violations place stumbling blocks in the way of new arms control agreements.

Nuclear and Space Talks

The United States and Soviet Union were involved in strategic nuclear, intermediate-range nuclear, and antisatellite negotiations prior to 1985, but the last of these negotiations ended when Round V of the Strategic Arms Reduction Talks (START) adjourned in December 1983 without Soviet agreement on a resumption date.

In January 1985, both countries jointly announced agreement to begin new negotiations on a complex series of questions concerning strategic and intermediate-range space and nuclear arms. The purpose of the Nuclear and Space Talks (NST), which commenced in Geneva in March 1985, is to reach agreements aimed at reducing nuclear arms and strengthening strategic stability.

At the 11-12 October 1986 meeting of President Reagan and General Secretary Gorbachev in Reykjavik, both leaders introduced significant new proposals aimed at deep reductions of the two sides' nuclear weapons. The sides agreed in principle to reduce by 50% their strategic offensive nuclear arms by 1991. The US also proposed a ten year commitment of non-withdrawal from the Antiballistic Missile (ABM) Treaty if the Soviets would agree to the elimination of all offensive ballistic missiles by 1996. The Soviets countered with a proposal to eliminate all strategic offensive arms by 1996. The sides also agreed to reduce their longer range intermediate-range nuclear missiles (LRINF) to an equal global limit of 100 warheads on these missiles. Soviet systems would be deployed in Soviet Asia; US systems would be deployed in the United States. LRINF in Europe would be reduced to zero. Because of the Soviet insistence on adding new restrictions to the ABM Treaty, final closure on the agreement was not possible.

The Soviet proposals contain several unacceptable provisions. For example, restricting Strategic Defense Initiatives (SDI) testing to the laboratory is a more restrictive provision than is contained in the ABM Treaty and would preclude determining the feasibility of SDI systems. They would not permit transition to defense if advanced space-based strategic defenses prove feasible and would eliminate all strategic offensive arms rather than offensive ballistic missiles. They would not permit the United States to match Soviet shorter-range intermediate-range nuclear forces (SRINF) missile forces in Europe and would not constrain Soviet SRINF missile forces outside Europe. They link the three negotiations on strategic offensive systems, intermediate-range nuclear forces, and defense and space systems in such a way that not one agreement can be signed until agreements are reached in all.

Following the Reykjavik meeting, the United States (in October) and the Soviets (in November) formally tabled at the Geneva negotiations, positions embodying their Reykjavik proposals, and the proposals were discussed in Vienna by the foreign ministers of the two sides. Within the limits permitted by confidentiality of negotiations, the proposals made by the two sides are outlined in the following paragraphs.

Strategic Arms

The primary objective of the United States in the

negotiating group on strategic arms is to achieve a stable and verifiable balance at significantly reduced levels of nuclear forces (Figure VI-1). The US approach to strategic arms reductions recognizes the particularly destabilizing nature of Soviet offensive ballistic missile systems, especially large multiple independently targetable reentry vehicle (MIRV) land-based intercontinental ballistic missiles (ICBMs), and the need to redress the current strategic imbalance through force modernization and deep, equitable, verifiable arms reductions.

The new US (22 October 1986) and Soviet (7 November 1986) Geneva proposals contain similar provisions for initial limits within the 50% reduction plan. Both proposals call for a reduction in Strategic Nuclear Delivery Vehicles (SNDVs) to 1,600 and a total weapons limit on those SNDVs of 6,000 for each side. For the first time, the Soviets proposed re-

ducing significantly the numbers of their heavy ICBMs. In addition, an important compromise was reached on how to count the weapons on bombers.

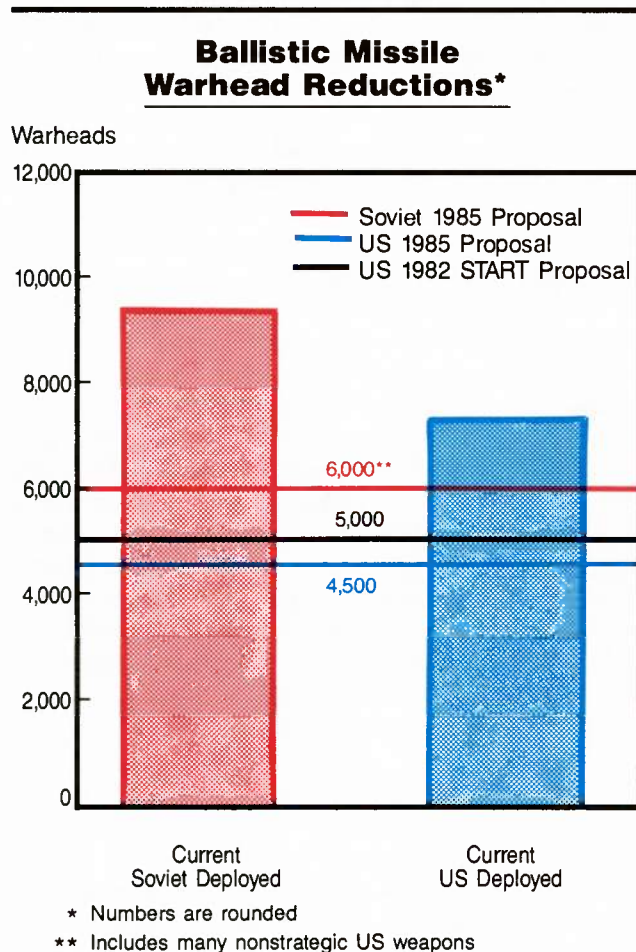
Unfortunately, because of the Soviet package deal approach to arms control, the new Soviet proposals still appear to attempt to hold START hostage to US concessions on intermediate-range weapons and Soviet insistence on increasing the testing and research limitations of the ABM Treaty.

To provide the Soviet Union the opportunity to join the United States in establishing an interim framework of truly mutual restraint, the President declared in June 1985 that the United States would continue to refrain from undercutting existing strategic arms agreements as long as the Soviet Union exercised comparable restraint, corrected its noncompliance, ceased its inordinate military build up, and actively pursued arms reductions agreements in the Nuclear and Space Talks in Geneva. On 27 May 1986, the President announced that the United States must base decisions on future strategic forces on the nature and magnitude of the threat posed by Soviet strategic forces and not on standards contained in the Strategic Arms Limitation Treaty (SALT) structure which had been undermined by Soviet noncompliance, and especially in a flawed SALT II Treaty which was never ratified, would have expired if it had been ratified, and has been violated by the Soviet Union. The President further stated that, assuming no significant change in the threat faced, as the strategic modernization program is implemented the United States will not deploy more strategic nuclear delivery vehicles or strategic ballistic missile warheads than does the Soviet Union. The United States remained in technical observance of the terms of SALT II until the 131st heavy bomber was equipped for cruise missile carriage on November 28, 1986.

Intermediate-Range Nuclear Forces (INF)

In 1981, the United States initiated, and now continues, intermediate-range nuclear force (INF) negotiations in fulfillment of NATO's 1979 decision to pursue a dual-track policy of force modernization and negotiated arms control. Toward this end and in close consultation with its allies, the United States has offered various proposals to achieve its stated objective of the complete worldwide elimination of the entire class of US and Soviet LRINF missiles.

In an effort to build upon the positive accomplishments of the 11-12 October 1986 Reykjavik meeting



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FIGURE VI-1

between President Reagan and General Secretary Gorbachev, the United States INF Delegation tabled in Geneva the US proposal from Reykjavik:

- An LRINF missile warhead ceiling of 100 warheads for each side, made up of zero warheads in Europe, 100 Soviet warheads deployed outside of Europe in Soviet Asia, and 100 US warheads deployed in the United States.
- Specific verification measures, including: (1) a comprehensive and accurate exchange of data; (2) on-site inspection of elimination of excess systems covered by the agreement; and (3) effective monitoring of remaining inventories, including on-site inspection.

Also, the United States proposed the following provisions needed to form the basis for a complete INF agreement:

- An equal global ceiling on US and Soviet warheads on SRINF missiles at the current Soviet level with negotiations on reductions of SRINF missiles to begin within 6 months after an initial INF agreement is reached.
- An interim INF agreement of unlimited duration and providing for negotiations on further reductions.

In Geneva, the Soviet side eventually tabled its version of the Reykjavik agreements. The offer represented a step backwards. Not only was progress in INF once again being held hostage to resolution of Defense and Space and START issues, but unacceptable elements of previous Soviet positions reemerged. For example, SRINF missiles would be frozen only in Europe at current levels — meaning no constraints on Soviet SRINF missiles outside Europe and no US right to equality.

In spite of apparent Soviet reluctance to build on the progress made in Reykjavik, the United States continues to seek an acceptable outcome in the negotiations at Geneva that would provide equal, verifiable, and reduced global limits of LRINF and SRINF missile warheads and to consult actively with its allies in this effort.

Defense and Space

Although the United States and Soviet Union held three rounds of antisatellite negotiations during the 1978-1979 period, the current Defense and

Space talks, which began in March 1985, have a much broader scope. In the six rounds of the current Geneva negotiations since March 1985, the US approach focused on the need to address the instability that exists in the current strategic situation and the desire to explore a joint transition to a greater reliance on effective defenses for strategic deterrence. Stressing the importance of reversing the erosion of the ABM Treaty and correcting Soviet actions that violate existing arms control agreements, the United States explained its view of the relationship between offensive and defensive forces, the potential contribution of defensive forces to its mutual security, and — if new defensive technologies prove feasible — the need to manage jointly a stable transition over time toward increased reliance on defenses and elimination of ballistic missiles.

At the beginning of Round III of the NST which began in mid-September 1985, the Soviets, in connection with their first nuclear arms reduction proposal of the current talks, reiterated their proposal for a ban on development (including scientific research), testing, and deployment of "space-strike arms." Failing to gain US acceptance of their basic proposal to ban "space-strike arms" during round four, the Soviets proposed in May and June 1986 a series of "partial measures" that included strengthening the ABM Treaty via a 15- to 20-year nonwithdrawal agreement, banning antisatellite (ASAT) systems of all basing modes, and banning the deployment of space-based systems to attack terrestrial targets. The President responded in a July 1986 letter to the Soviet General Secretary with a proposal that was subsequently tabled in Geneva in October 1986. The US proposal was that both sides confine themselves for 5 years (through 1991) to a program of research, development and testing, which is permitted by the ABM Treaty, to determine whether, in principle, advanced reliable systems of strategic defenses are technically feasible. After 1991, if either side desires to proceed to deployment of an advanced strategic defense system, that side must first offer a plan to share the benefits of such a system with the other providing there is mutual agreement to eliminate the offensive ballistic missiles of both sides. If after 2 years of negotiations the plan is not agreed on by both sides, either side will be free to deploy its system unilaterally after 6 months notice is given to the other side.

Following the Reykjavik discussions, the United States tabled a new proposal calling for a US-Soviet

commitment, in the context of an agreement to eliminate all offensive ballistic missiles by 1996, not to withdraw from the ABM Treaty for a 10-year period through 1996, except for reasons of supreme national interest, or to respond to a material breach, or other circumstances recognized under international law. During the first 5 years, through 1991, the US and the USSR would reduce their strategic offensive forces by 50 percent to an equal level of 1600 SNDVs and 6000 weapons. During the next 5 years, through 1996, both sides would eliminate their offensive ballistic missiles of all ranges. During the 10-year period, both sides would adhere to the provisions of the ABM Treaty continuing the research, development, and testing permitted by the ABM Treaty. At the end of the 10-year period, either side could deploy advanced strategic defenses if it so chose unless the parties agreed otherwise.

The Soviets continued to insist, in their post-Reykjavik proposal at Geneva, that the US must agree to restrictions on SDI that would virtually halt the US program.

Other Nuclear Arms Control Actions

In 1986, in other bilateral nuclear arms control actions with the Soviet Union, the United States participated in two separate sets of expert level meetings, one on Nuclear Risk Reduction Centers and another on nuclear testing.

Mutual and Balanced Force Reductions

The longstanding negotiations on Mutual and Balanced Force Reductions (MBFR) between North Atlantic Treaty Organization (NATO) and the Warsaw Pact have the objective of achieving a more stable balance of forces at lower levels between East and West and the strengthening of peace and security in Europe through mutual reductions of forces and armaments with undiminished security for both alliances. Both sides have submitted draft treaties, but they remain far apart on the fundamental issue of verification. In December 1985, the United States and its allies proposed a modification to the 1982 Western draft treaty to break the impasse on initial force levels. This proposal would require exchange of information on forces remaining after reduction in a first-phase, time-limited agreement. The West, which dropped its longstanding requirement for data agreement on Eastern Forces, continues to press for a strengthened verification package.

The East's counterproposal, presented in Feb-

ruary 1986, was essentially a repackaging of previous Warsaw Pact proposals and was considered totally inadequate by NATO. The most significant problem with the latest Eastern proposal is the absence of substantive provisions to satisfy Western concerns about verification of residual forces, particularly in light of the Western concession to defer agreement on data prior to reductions.

Conference on Disarmament in Europe

The Conference on Confidence and Security-Building Measures and Disarmament in Europe, commonly known as the Conference on Disarmament in Europe (CDE), began in January 1984 and terminated in September 1986. The conference was mandated by the 35 participating states of the Conference on Security and Cooperation in Europe (CSCE) to develop a set of confidence and security-building measures (CSBMs) in Europe. These measures were to be designed to clarify intentions, to reduce the chance of miscalculation during crisis and to reduce the risk of surprise attack. The concluding document preserved the basic principles and objectives promulgated by the West and will form the foundation upon which further steps in the process of openness can be based. Of particular note, the Warsaw Pact has, for the first time in negotiations focused on the standing forces in Europe, accepted the concept of on-site inspection, both ground and aerial, with no right of refusal. At the CSCE review conference, which began in November 1986, progress in the CDE agreement will be reviewed as a part of the assessment of the overall CSCE process. After this review and if consensus is reached, a new mandate may be structured to guide participating states in a subsequent phase of CDE.

Halifax Statement on Conventional Arms Control

Taking account of Soviet General Secretary Gorbachev's expressed readiness to pursue conventional force reduction from the Atlantic to the Urals, NATO has commissioned a high-level task force (HLTF) to pursue bold new steps in conventional arms control. The HLTF presented a final report to the NATO Ministers at their meeting in December 1986. At this meeting the Ministers issued a declaration which reasserted NATO's objective as originally stated in the Halifax Communique of 30 May 1986, of strengthening stability in the whole of Europe through increased openness and the establishment of a verifiable, comprehensive, and stable balance of conventional forces at lower levels. To this end, the Ministers expressed a readiness to open East/West discussions

with a view to the establishment of a new mandate for negotiating on conventional arms controls covering the whole of Europe from the Atlantic to the Urals. In mid-December 1986, the HLTF initiated preliminary work in preparation for mandate discussions on an alliance-to-alliance basis with the Warsaw Treaty Organization.

Other Multilateral Negotiations

Representatives of the Joint Chiefs of Staff participate in other multilateral forums, including the 40-nation Conference on Disarmament (CD). Among the CD agenda items are the achievement of a comprehensive nuclear test ban (CTB) and a comprehensive chemical weapons ban. Concerning a CTB and as a result of the suspension of negotiations among the United States, United Kingdom, and Soviet Union on such a treaty, some members favor negotiating a comprehensive nuclear test ban within the CD. However, the US position is that such testing remains essential to the maintenance of a credible nuclear deterrent. Therefore, the long-term goal of a CTB must continue to be viewed in the context of broad, deep, and verifiable arms reductions; improved verification capabilities; expanded confidence-building measures; and maintenance of a modern, effective deterrent force.

In 1984, the United States tabled a draft treaty on a total chemical weapons ban in the Conference on Disarmament. Soviet and surrogate violations of the Geneva Protocol of 1925 and the Biological and Toxin Weapons Convention of 1972 justify continued US insistence on effective verification of a total ban of chemical weapons. The Soviets and many other nations, including some Western allies, consider verification and compliance provisions of the US draft treaty as too intrusive and therefore unacceptable. The Soviets have stated that a challenged state must have some right to refuse an on-site challenge inspection of a suspected violation if that state believes its security interests would be jeopardized from such an inspection. The Soviets hold that verification should be accomplished through national technical means and self-inspection. The United States requires on-site inspection without right of refusal. An unverifiable chemical weapons ban would seriously endanger US and allied security. Therefore, the United States must establish and maintain an effective chemical retaliatory capability until a verifiable ban can be concluded. In 1975, the United States ratified the Biological Weapons Convention (BWC) in which 98 countries agreed to prohibit development, production, and stockpiling of bacteriological (biological) and

toxin weapons and to destroy any agents on hand. However, because biological weapons in 1975 were not seen as a threat, the BWC contained no clear standard for consultation and cooperation among parties to resolve compliance problems, or verify compliance. In 1982, the United States accused the Soviets of BWC and Geneva Protocol violations in Southeast Asia and Afghanistan (use of "Yellow Rain") and in Russia (a 1979 Sverdlovsk anthrax outbreak caused by a suspected biological warfare munitions facility accident). The USSR denied the US accusations, and attempts to confirm biological agent use were hampered. A review conference of the BWC was held in September 1986 to review the operation and effectiveness of the Treaty. The BWC called a special meeting of experts to examine ways to implement strengthening and supporting measures agreed at the conference.

MILITARY SPACE ACTIVITIES

Recognizing the increasing role of space in supporting national interests, the United States has developed a comprehensive space policy for both civil and military uses. A complete review of this policy is under way encompassing necessary revisions due to the CHALLENGER accident, SDI research progress, and Soviet advances in space. Additionally, the revision will include policy statements regarding the US space station and the commercialization of expendable launch vehicles. Space-based systems have clearly demonstrated their value in support of the planning and execution of US military operations, thereby contributing to deterrent and defense capabilities. Figure VI-2 depicts some of the current military uses of space. The National Command Authorities (NCA) and US military forces depend heavily upon space systems in peacetime, crisis, and conflict.

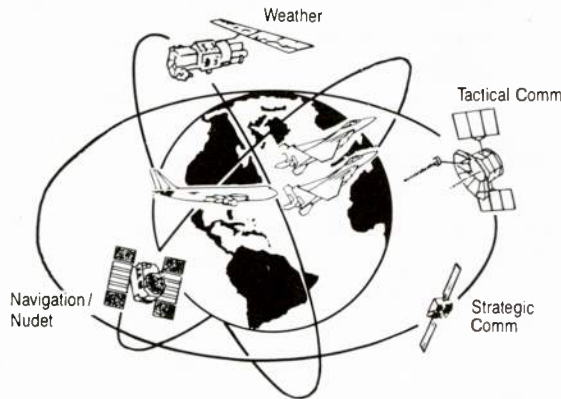
Space Control

Space control activities ensure freedom of action in space for friendly forces while, when directed, denying it to the enemy. The Department of Defense will develop and deploy a comprehensive space control capability with initial operations at the earliest possible date. Both the United States and the Soviet Union depend on space systems for military operational support. The United States must be able to counter or nullify the effectiveness of enemy space systems and ensure that US space assets can function in a hostile environment.

Force Application

Force application is the potential to apply force from space to defend the United States and its allies.

Military Employment of Space Assets



As of 30 September 1986

FIGURE VI-2

Force Enhancement

Force enhancement activities include communications, terrestrial surveillance, navigation and positioning, meteorology, oceanography, mapping, and search and rescue. Systems now operational or under development to perform these activities include MILSTAR, Fleet Satellite Communications System (FLTSATCOM), Air Force Satellite Communications System (AFSATCOM), Leased Satellite Communications System (LEASAT), Defense Satellite Communications System, Defense Meteorological Satellite Program, Navy Remote Ocean Sensing System, Global Positioning System, Nuclear Detonation Detection System, and other systems.

Space Support

Space support activities involve operations associated with launching and deploying space vehicles, maintaining and sustaining space vehicles while in orbit, and recovering space vehicles, if required. Centers being developed and improved to support such missions include a Consolidated Space Operations Center and ground facilities for the Satellite Control Facility and its associated ground stations. To overcome dependence on foreign-based ground stations, the United States is developing the capability to process information onboard spacecraft and then perform the necessary data relay. Systems being developed to deploy satellites include new upper stages and expendable launch vehicles. Systems used

or under development to transfer satellites from a low orbit to high orbit include the Inertial Upper Stage, the Payload Assist Module, and the CENTAUR Upper Stage.

The United States is actively pursuing an assured launch capability despite past failures of a TITAN 34D and the shuttle, which have greatly reduced our access to space. This capability calls for development of complementary expendable-launch vehicles for shuttle-class payloads and a new medium lift booster and refurbishment of older TITAN IIs for smaller payloads. These expendable launch boosters, along with the Space Transportation System, will provide a balanced mix of launch vehicles ensuring access to space to support the mission needs of national security. At Vandenberg Air Force Base, the Shuttle Launch Complex was officially dedicated in October 1985. Because of the CHALLENGER loss, Vandenberg shuttle facilities have been placed in an operational caretaker status. Upon production of the fourth orbiter, Vandenberg will be returned to full operational status, probably in 1992.

Soviet Space Efforts

The Soviets continue their vigorous space efforts. Although they still lag behind the United States in some areas of space technology, the Soviets lead in directed energy weapon technology, space medicine, effects of weightlessness, and other human endurance areas. The Soviet's annual space budget growth rate has exceeded their overall military budget growth rate in recent years. Growth in the Soviet space budget is expected to continue for at least the next 5 years. Most of their space effort is purely military, and much of the remainder involves joint civil-military programs. The Soviet logistic base is the largest in the world.

The Soviets have sustained an average annual launch rate of approximately 100 space launch vehicles during the past few years, indicating a significant logistic production capability. Launch rate differences between the United States and the Soviet Union can be explained partially by the Soviet need to replace satellites more frequently because of the shorter average lifetime of their satellites. However, the Soviet launch rate also provides a very robust launch and replacement capability in crisis and conflict situations. The Soviets continue to make important technical advances in their satellite programs.

The Soviet Union presently maintains nearly a three-to-one margin over the United States in man-days in space. The new MIR space station will be manned for extended periods. Research and development, reconnaissance, testing and operation of weapons and sensors and other military missions could be performed from such stations. The introduction of the Soviet reusable manned orbital shuttle is expected by the late 1980s. The Soviet orbiter is nearly identical to the US Space Transportation System orbiter which was first launched in 1981.

The Soviets are currently developing two new launch systems. The heavy lift vehicle will support the manned orbital shuttle and other heavy payloads, and the medium lift vehicle may support a manned space plane, as well as serve as the strap-on booster for the heavy lift vehicle. The Soviets are also continuing to improve their space-based reconnaissance systems.

Some existing Soviet space assets pose a threat to US satellites and ground forces. The Soviet operational co-orbital ASAT interceptor system is designed to engage low-altitude satellites. Additionally, Soviet ABM and ICBM systems have inherent ASAT capabilities and could augment the co-orbital system. Some US satellites may also be vulnerable to interference from jammers or damage from ground-based lasers.

Soviet space systems have potential application during crises and situations short of general nuclear war because they provide command authorities with order of battle, warning, target location, and battle damage assessment information. Soviet radar intelligence ocean reconnaissance satellites (RORSAT) are capable of transmitting real-time targeting data on large naval vessels to selected deployed forces.

US Command Arrangements For Space

The Soviet emphasis on space as a warfighting medium and the increasing US reliance on space systems caused the United States to reevaluate its military command structure supporting space operations and resulted in the formation of a new unified command.

Establishment of the US Space Command (USSPACECOM) in September 1985 placed DOD space forces into a single, joint military organization. USSPACECOM enhances the deterrent posture of the United States by providing timely support to the NCA and forces assigned to the commanders in chief of the unified and specified commands (CINCs) through

greater control over space systems in peace, crisis, and war. A direct tie to the NCA through Commander in Chief, US Space Command (USCINCSpace) ensures that space forces are singly led and prepared to fight as one. The command is charged with operating and protecting space systems and, when directed, denying adversaries the use of their space systems during war; providing integrated tactical warning and attack assessment of space, missile, and air attack on CONUS; and operational planning for defense against ballistic missiles.

MILITARY ORGANIZATION AND COMMAND

In June 1986, the Joint Chiefs of Staff completed their review of JCS Pub 2, "Unified Action Armed Forces." This review of the military command and control system has resulted in a completely revised document. It reflects a positive step toward more effective direction and operational integration of the armed forces. This comprehensive revision, the first major revision since 1959, incorporates significant changes that provide authority and flexibility to the combatant commanders (CINCs). JCS Pub 2 sets forth a system for providing military advice that is responsive to the needs of the National Command Authorities. These policy revisions will significantly enhance joint warfighting effectiveness and fully support the stated goals of the President and the Secretary of Defense in directing the implementation of the recommendations of the President's Blue Ribbon Commission on Defense Management (the Packard Commission).

The changes made by the Joint Chiefs of Staff have taken full account of the work of the Packard Commission, Congress, and this Administration in charting the future course of the Department of Defense. These changes also benefited from the advice and comment of the CINCs. Drawing upon all these sources, the Joint Chiefs of Staff addressed a broad range of issues head-on and produced a sound blueprint for the US military command structure.

Under broad policy direction from Washington, the CINCs will have greater latitude and full authority to organize assigned forces as they deem necessary to accomplish their missions. They will also have full authority to delegate operational control and aspects of their operational command authority to subordinates. Service components will be required to communicate through the CINC on matters over which he exercises operational command and to

inform him on other matters as he may direct; furthermore, CINCs will exercise approval authority over assignments of individuals in key staff positions and of immediate subordinate commanders. The CINCs will influence proposed Service logistic programs in their areas of responsibility that significantly affect CINC operational capabilities or sustainability. Also, the CINCs' directive authority in joint training was expanded and clarified. The changes also provide options for shortening the chain of command during contingencies short of war and providing the flexibility to deal with situations that overlap established boundaries between commands.

Over the past few years, CINCs have played an increasingly important role in the programming phase of the Planning, Programming, and Budgeting System (PPBS). This evolving role has successfully moved CINC warfighting requirements to the forefront of our resource allocation deliberations. This role is among the areas periodically addressed to ensure the continuing responsiveness of the combatant commands to meet national security requirements. Departmental directives now provide the greater authority and participation needed by CINCs without diverting their focus from the primary tasks of deterrence and warfighting.

As directed by the President and the Secretary of Defense, these revised policies and procedures clarify authority and responsibility, improve responsiveness, and enhance control and flexibility for the CINCs and the National Command Authorities. The changes codify, strengthen, and broaden existing practices within the Department of Defense.

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 made numerous modifications to the statutes that govern the Department of Defense. The Department has taken action to implement provisions of the new law. Many changes have already been implemented. However, some others will take months and in some cases several years to implement fully. The new law gives the Chairman, Joint Chiefs of Staff, significant new responsibilities.

One of the major provisions of the act focuses on joint officer personnel policy. The legislation creates a joint duty specialty for officers that will require major changes in the way officers are selected, educated, promoted, and assigned to joint duty positions. It also establishes joint duty as a prerequisite for higher rank, strengthens the focus of all professional military

education on joint matters, and specifies promotion objectives for joint officers and review of selection board results by the Chairman, Joint Chiefs of Staff to ensure board results are consistent with guidelines developed by the Secretary of Defense.

DEFENSE MANPOWER

Overview

In recent years, the advancements in technology and the resulting modern high technology weapon systems have increased demands on the US military to recruit and retain top quality young men and women. If the Military Services are going to maintain the level of readiness necessary for the future, they must preserve and improve on the gains already made in personnel readiness. Meeting the personnel goals provides the foundation for the US military readiness posture. The challenge will be to do this in the face of severe budget constraints and diminishing resources.

Recruitment

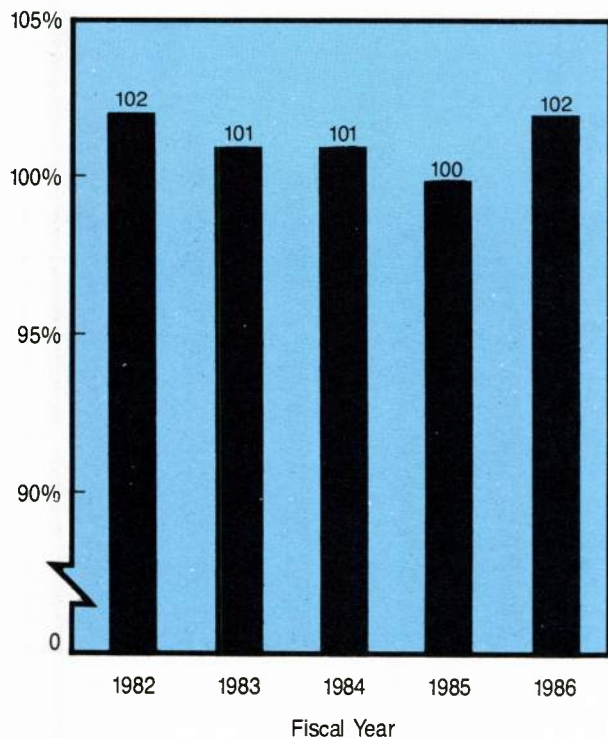
The Department of Defense continues to be successful in achieving its accession goals (Figure VI-3) despite the continuing decline in the eligible youth population, an improved economy, and reduced youth unemployment. This success is due to the emphasis the Services have placed on recruiting to attract the number and quality of people they need and to the incentives, including cash enlistment bonuses and educational benefits Congress has provided. Although a few high-technology skills remain difficult to fill, the overall quality of recruits is high (Figure VI-4).

Retention

Retention of quality people continues to be good. Even though the Services have pursued policies of reenlistment screening and selective retention, the retention rates have remained high since 1982 (Figure VI-5). The successes in retention are directly related to benefits and quality of life programs that are given the highest priority by each of the Services. If the level of readiness required is to be maintained, efforts to restore pay comparability and sustain the package of institutional incentives commensurate with the unique demands associated with military life must be continued. The impact of recent changes to the military retirement system remains to be seen; every effort will be made to ensure that further erosion of this important compensation element does not occur.

DOD Recruiting*

(% of Objective Achieved)



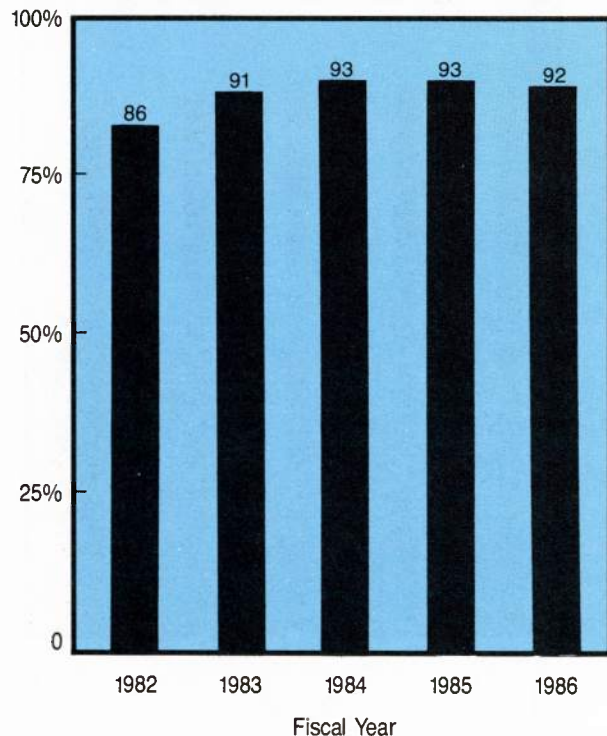
* All Services (prior and non-prior service)

As of 30 September 1986

FIGURE VI-3

High School Diploma Graduates*

(All Services)



* Non-prior service

As of 30 September 1986

FIGURE VI-4

Reserve Manpower

The Total Force has become increasingly dependent upon Reserve elements. Properly trained and equipped unit and individual reservists are required to augment active forces rapidly in times of war or national emergency. Follow-on requirements will be met by the standby and pretrained individual manpower (PIM) resources.

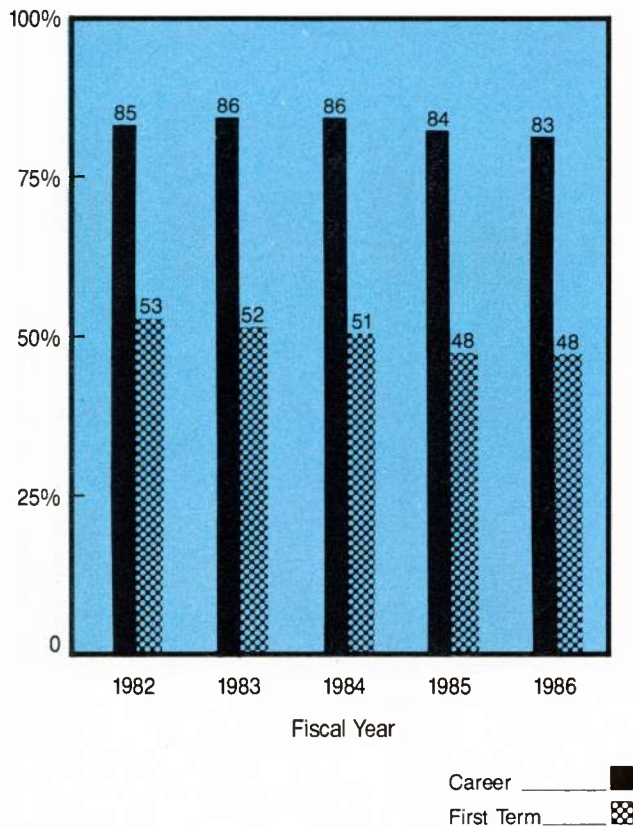
The principal mobilization mission of the Ready Reserve falls to the Selected Reserve (SELRES). The SELRES consists of all of the National Guard forces, all reservists who are organized in Reserve units, and individuals preassigned to augment active units upon mobilization. Like the active forces, the SELRES has enjoyed significant manning improvements. SELRES strength declined from Fiscal Year (FY) 1973 through FY 1978; however, the decline has reversed (Figure VI-6). During FY

1988, combined Army Reserve and Army National Guard Selected Reserve strength will be 794,000, which is larger than the 781,000 personnel Active Army. These recruiting and retention successes are due principally to intensified manpower management, especially improved marketing of Reserve component opportunities. Maintenance of this positive trend will require continued emphasis on personnel support programs for these forces and on improved efforts of retaining the quality personnel being accessed.

The Individual Ready Reserve (IRR) and Inactive National Guard (ING) consist of trained individual reservists and guardsmen who will fill units to wartime manning levels and replace initial wartime casualties. Although no established manning levels exist for these important manpower resources, a number of wartime scenarios suggest that a larger IRR and ING are required. A slow but continuing upward trend in

DOD Reenlistment Rates

(% of Eligibles)



As of 30 September 1986

FIGURE VI-5

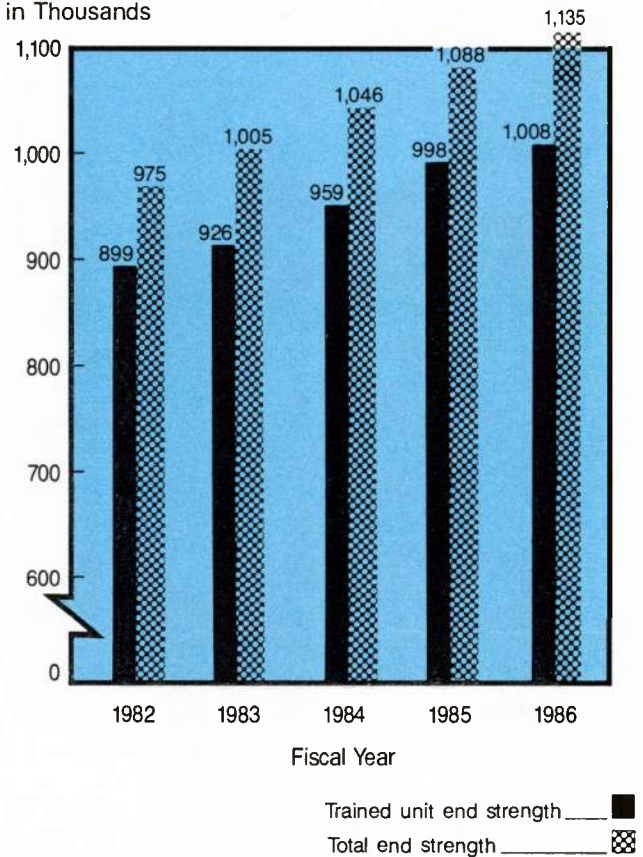
the IRR and ING (Figure VI-7) has been achieved by legislation extending military service obligations from 6 to 8 years, authorizing bonus programs, and increasing active and SELRES manning levels. The requirement for mandatory 1-day annual screening will result in a greater emphasis on readiness. These and other initiatives will maintain positive growth, readiness, and responsiveness of the IRR and ING.

Civilian Manpower

The DOD civilian workforce is a major portion of the Defense manpower program. These workers provide support services in all areas of the active and reserve military that do not require military incumbents. In FY 1985, Congress removed DOD civilian end-strength ceilings, allowing the Services to manage the workforce more effectively. In FY 1987 as in FY 1986, the civilian workforce is expected to grow only slightly and remain at that level for

Selected Reserve Manpower

Strength
in Thousands



As of 30 September 1986

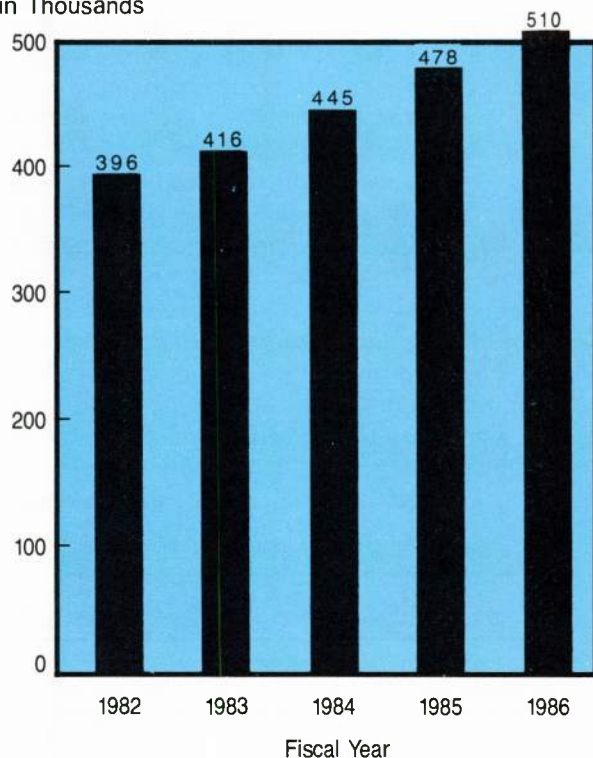
FIGURE VI-6

FY 1988. As shown in Figure VI-8, the removal of DOD civilian end-strength ceilings have not caused the civilian manpower portion of the DOD budget to grow. Management improvements, including the Commercial Activities Program (OMB A-76), productivity enhancement programs, and efficiency review programs have had a direct impact on stabilizing the growth in the civilian workforce; at the same time, services and capabilities have improved.

The ability of the Department of Defense to attract and retain the required number of civilians with appropriate skills is vital. Employment and compensation procedures in the current Federal Civil Service system, which cover the majority of the US citizens employed by the Department of Defense, are not always adequately responsive to meet DOD requirements. The Civil Service Simplification Act of 1986, drafted by the Office of Personnel Management

Individual Ready Reserve and Inactive National Guard

Strength
in Thousands

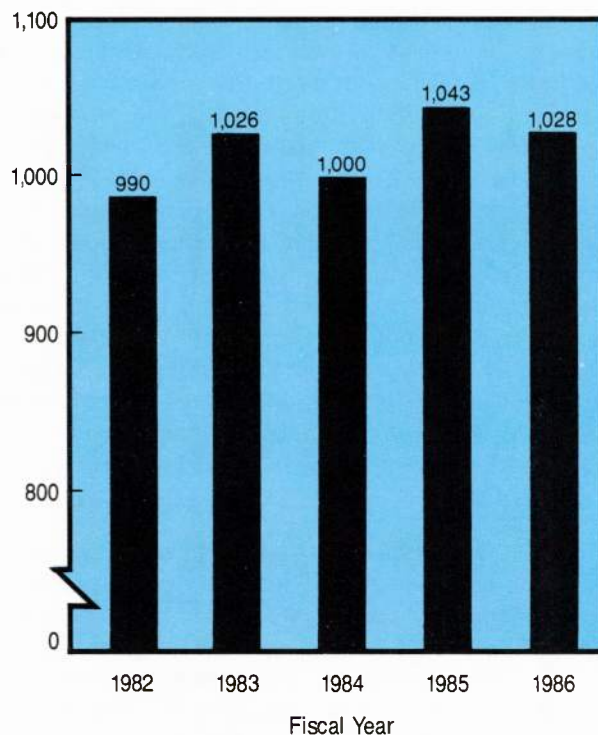


As of 30 September 1986

FIGURE VI-7

Direct Hire Civilian Employment

Strength
in Thousands



As of 30 September 1986

FIGURE VI-8

and introduced in the Senate, proposes elimination of the current procedural impediments. Its passage will enhance the DOD ability to attract, retain, and manage the civilian work force effectively.

Contractor Personnel

Throughout the Department of Defense, there is widespread use of contractor personnel from the private sector to accomplish noncritical functions, primarily in the areas of base support. A trend with potential long-term consequences has developed as a result of fiscal and military personnel ceiling constraints. Various commands, particularly in the strategic defense mission area, are relying increasingly on contractor personnel to operate and maintain critical military systems such as tactical warning and attack assessment systems. The Department of Defense has implemented strong review procedures to ensure that the use of contractor personnel does not adversely affect military operations. Taken too far, the

reliance on nonmilitary personnel to support critical military operations could jeopardize the effectiveness of these systems during crisis or wartime operations. It could also preclude attainment of an adequate technological base for military personnel to support current and future weapon systems. In addition, this trend adversely affects the Continental United States (CONUS)-to-overseas job ratio, resulting in an unacceptable number of overseas tours for many job specialties. For these reasons, every effort must be made to assure the appropriate mix of manpower resources to meet wartime defense requirements.

Quality of Life

In recent years, enlistment and retention of quality people have been the primary goals in improving personnel readiness. Gains in force quality must be protected through strong support for enhanced quality of life programs, improved facilities and housing,

and a competitive compensation package for both military and civilian personnel.

Military and civilian pay must regain comparability and keep pace with the general civilian wage growth in the economy. A pay adjustment mechanism, such as linking pay raises to increases in the Employment Cost Index, is needed for this purpose. Such a mechanism would provide predictability and economic stability for Service members and civilian employees, thereby encouraging their long-term commitment to careers in the armed forces and federal service. In addition, bonuses and special pay categories will continue to be essential retention incentives for highly skilled personnel and supervisors in the career force. The lag between military and private sector pay, as measured by the Employment Cost Index, has become the largest since the inception of the all-volunteer force. A potential downturn in recruitment and retention of a quality force is possible and is cause for concern.

The military retirement system has always provided a powerful retention incentive, functioned as a force management tool, and supplied a mobilization base of experienced personnel. As a result of the congressionally mandated changes to the military retirement system, all members entering the Service on 1 August 1986 and after will receive approximately 28 percent less in retirement pay. The potential impacts on recruitment and retention must be recognized and any adverse trends that may be generated must be corrected.

The overall quality of life of Service members and their families has significant influence on force quality and retention. Among the more important quality of life programs are family support centers, health care, commissaries, adequate reimbursement for permanent change of station moves, and the facilities to improve living and working conditions of service members.

Families of military members play an important role in the quality of life for military personnel and serve as a vital source of strength contributing to the national defense readiness posture. The development of special programs to meet the needs of military families is crucial to the well-being of those 60 percent of military members having family responsibilities.

INTERNATIONAL TERRORISM

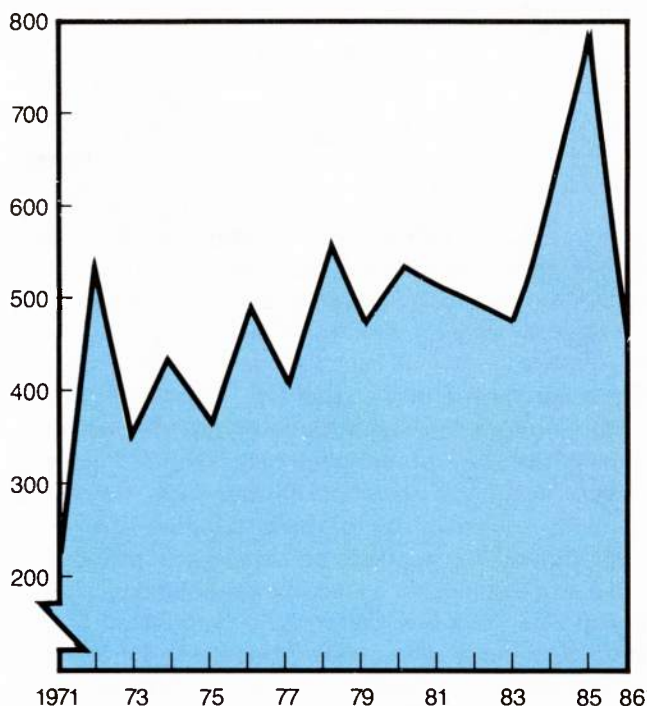
The threat of international terrorism against the United States and other nations continues to pose formidable challenges. Targeting of US interests in

Europe and the Middle East has increased. These areas, along with Latin America, will probably remain the scene of the greatest number of terrorist activities against US interests.

In 1985, facilities and citizens of some 90 countries were victimized by international terrorism. US citizens are now targets of about 25 percent of all international terrorist incidents. In the past decade, terrorist incidents have increased in brutality and lethality. In 1985, thirty-eight American citizens were killed and 160 were wounded. From January 1986 through the Karachi hijacking in early September, twelve Americans have been killed and some 100 wounded in terrorist attacks and other operations. The number of international terrorist incidents has shown a generally upward trend since official statistics were first compiled in 1968. As shown in Figure VI-9, the number of terrorist incidents remained relatively constant from 1979 until 1984 when a dramatic increase in international terrorist incidents occurred.

International Terrorist Incidents

1971-1986



* Data through 1 July 1986

As of 1 July 1986

FIGURE VI-9

Although these figures are high, they do not include local acts of violence in which the perpetrators and the victims are indigenous to a single country.

As with the number of terrorist incidents, the average lethality per incident has also increased. The 1983 and 1984 bombings of the US Embassy in Lebanon, 1983 bombing of the Marine Headquarters in Lebanon, and bombings of the US Embassy and other facilities in Kuwait illustrate the increased destructiveness of terrorism. In addition to the renewed activity of terrorists indigenous to countries in Western Europe, there has been a spillover in Europe of Middle East terrorism carried out by fundamentalist, radical, and Palestinian groups influenced or sponsored by Iran, Syria, and Libya. These groups pose a significant threat to US interests in the Middle East and Europe. Their operations have broadened to include attacks in Europe, such as the bombing of the La Belle discotheque in Berlin and the attempted bombing of an El Al aircraft at London's Heathrow Airport.

Future terrorism will likely be more lethal and frequent; terrorists will use more sophisticated weapons and tactics, with high profile US symbols being the target of choice.

International connections among terrorists continue to increase. In Europe, for example, there are links between terrorists in West Germany, France, and Belgium. Coordination among leftist terrorists will continue to include US and NATO assets in their targeting. In Latin America, links also have evolved, particularly between Colombian and Ecuadoran terrorists. Insurgents in El Salvador will continue to pose the greatest threat for US personnel and assets in Latin America as demonstrated by the brutal assassination of four US Marines in June 1985. However, anti-US threats may also increase in Honduras, Colombia, Ecuador, Peru, Costa Rica, and Chile. In Asia, the Philippines may also emerge as a major threat area for US interests.

As in the past, support from the Soviet Union, North Korea, Cuba, Nicaragua, and their allies and more direct involvement of Syria, Iran, Libya, and the People's Democratic Republic of Yemen will likely continue.

Although international terrorism has focused primarily on targets overseas, the continental United States is not exempt from acts of terrorist violence.

Some 145 incidents of terrorism occurred within the continental United States and Puerto Rico over the past 5-1/2 years (January 1981 to July 1986) with over 10 percent directed against US military personnel or property. A resurgence of terrorism from the far left could pose a threat to US Armed Forces should mobilization and deployment become necessary.

The United States continues to view terrorism as a threat to national security. The US resolve to take all actions necessary to stop international terrorism was demonstrated by the April 1986 bombing of Libya after Libya was linked to terrorist attacks. Intelligence collection has been increased against groups and individuals involved in international terrorism to provide timely warning to deter and thwart terrorist acts and to contribute to a heightened security posture in order to prevent the execution of planned terrorist acts. The Services have undertaken efforts to confront the growing terrorist problem through threat-awareness training and physical security programs. The US Armed Forces have also been working closely with non-DOD and host-nation security forces to ensure maximum protection of US personnel, dependents, and facilities. The CINCs have also taken steps to strengthen joint planning for defense against terrorist actions. The Joint Chiefs of Staff are represented on the interdepartmental working group dealing with the terrorist problem. JCS representation ensures that joint military requirements and capabilities support national objectives addressing the threat of terrorism.

MILITARY SUPPORT TO DRUG INTERDICTION

Drug trafficking threatens US national security in three ways: socially, economically, and militarily. Drugs pose a threat to the United States through the degrading effect they have on the moral, social, and economic well-being of the country. The politico-military dimension of the threat consists of four elements: undermining friendly governments important to US security through corruption, intimidation, and economic destabilization; drug linkages to insurgencies, which further threaten to destabilize these governments; the threat of drug-related terrorism to US officials and citizens abroad; and the degradation in military readiness and internal security of the US Armed Forces resulting from illicit drug use.

Since 1981, when the passage of Public Law 97-86 clarified the Posse Comitatus Act, our military forces have actively supported law enforcement agencies to the maximum extent possible consistent

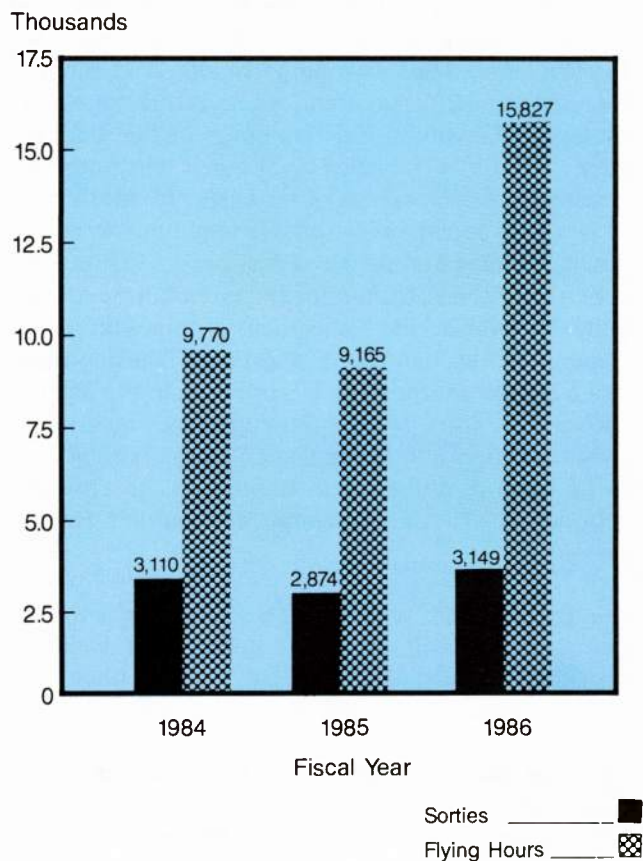
with resource availability, national security requirements, and the needs of military preparedness. This has included surveillance missions, communications and intelligence support, towing or escort of seized vessels, transport for logistics, equipment loans, and expert personnel assistance to the National Narcotics Border Interdiction System (NNBIS) Regional Centers and Headquarters. The number of flying hours flown by US military aircraft in FY 1986 experienced nearly a 75 percent increase over the 9,000 hours flown in FY 1985 in support of drug interdiction efforts. A 3-year comparison of flying hours is shown in Figure VI-10. Most flying hours are dedicated to air surveillance in support of US law enforcement agencies; however, our military forces also provide limited but crucial support to police forces of foreign governments. US military helicopters have been used for several years in the Bahamas; in 1986 in Bolivia helicopters were used to provide mobility for national police in remote, inaccessible parts of the country. This transportation support has been invaluable in allowing these governments to make arrests and destroy drug trafficking facilities.

EUROPEAN TROOP STRENGTH

The congressionally mandated European troop strength (ETS) ceiling continues adversely affecting European force structure, readiness, modernization, and sustainability. The ceiling ignores the increasing capabilities of the Warsaw Pact, discounts improvements made by our allies, and creates the impression that the United States is expanding nuclear forces at the expense of conventional forces. In addition, since the Atlantic islands are included in the ceiling, it assesses a NATO penalty for CONUS defense improvements in the Atlantic islands. Conforming to the existing ceiling restricts US and NATO combat capability as we reach the limits of prudent economizing, civilianizing, and reducing troop strength to offset critical growth. As newer, more capable systems with trained personnel to support them are introduced into Europe, the ceiling mandates that other, equally needed combat assets must be returned to CONUS.

Concurrently, the Warsaw Pact is rapidly improving its conventional force capabilities, and the gap between NATO and Warsaw Pact force capabilities is

Military Aircraft Surveillance Missions in Support of Drug Interdiction



As of 30 September 1986

FIGURE VI-10

growing despite the increased efforts of the NATO allies. Were deterrence to fail and a Warsaw Pact attack occur, the ceiling's effect on US conventional forces could serve to lower the nuclear threshold. Arbitrary limitation of US military personnel in Europe undermines the gains made in recent years in countering the threat to NATO. It is imperative that the size and composition of our deployed forces in Europe be based upon the threat to US and allied interests, rather than on an arbitrary ceiling. There is no ceiling on Soviet forces.

GLOSSARY

AAA	— anti-aircraft artillery
AAW	— anti-air warfare
AAV	— assault amphibian vehicle
AAV SLEP	— assault amphibian vehicle service life extension program
ABM	— antiballistic missiles
AC	— Active component
ACCS	— Army Command and Control Systems
ACM	— advanced cruise missile
ADDISS	— Advanced Deployable Digital Imagery Support System
ADDS	— Army Data Distribution System
ADP	— automatic data processing
AFAP	— artillery-fired atomic projectiles
AFSATCOM	— Air Force Satellite Communications System
AID	— Agency for International Development
ALCM	— air-launched cruise missiles
AMRAAM	— advanced medium-range air-to-air missile
ANMCC	— Alternate National Military Command Center
ANZUS	— Australia, New Zealand, and United States
APF	— afloat pre-positioning force
APVO	— Soviet Air Defense Aviation
ASARS	— Advanced Synthetic Aperture Radar System
ASAT	— antisatellite
ASEAN	— Association of Southeast Asian Nations
ASROC	— antisubmarine rocket
ASW	— antisubmarine warfare
ATACMS	— Army Tactical Cruise Missile System
ATB	— Advanced Technology Bomber
ATGM	— antitank guided missile
AUTOSEVOCOM	— Automatic Secure Voice Communication
AWACS	— Airborne Warning and Control System
BB	— battleship
BMD	— ballistic missile defense
BMEWS	— Ballistic Missile Early Warning System
BSTS	— Boost Surveillance and Tracking System
BWC	— Biological Weapons Convention
C ²	— command and control
C ³	— command, control, and communications
C ³ CM	— command, control, and communications countermeasures
C ³ I	— command, control, communications, and intelligence
CD	— Conference on Disarmament
CDE	— Conference on Disarmament in Europe
CEP	— circular error probable
CG	— guided-missile cruiser
CGS	— CONUS ground station
CINCs	— commanders of unified and specified commands
CIWS	— Close-in Weapon System
COBRA DANE	— space surveillance sensor
CONUS	— continental United States
CRAF	— Civil Reserve Air Fleet
CRAFTS	— Civil Reserve Auxiliary Fleet Ships
CSBM	— confidence and security-building measures

CSCE	— Conference on Security and Cooperation in Europe
CTB	— comprehensive test ban
CV	— cargo variant
CV	— conventionally-powered aircraft carrier
CVN	— nuclear-powered aircraft carrier
CW	— chemical warfare
CY	— calendar year
DCA	— dual-capable aircraft
DCS	— Defense Communications System
DDC	— Data Distribution Center
DDG	— guided-missile destroyer
DEW	— Distant Early Warning
DOD	— Department of Defense
DOE	— Department of Energy
DSARC	— Defense Systems Acquisitions Review Council
DSCS	— Defense Satellite Communication System
DSP	— Defense Support Program
ECM	— electronic countermeasures
ECCM	— electronic counter-countermeasures
EHF	— extremely high frequency
ELF	— extremely low frequency
EMP	— electro-magnetic pulse
ESF	— Economic Support Fund
ETS	— European troop strength
EW	— electronic warfare
FLTSATCOM	— Fleet Satellite Communications System
FMS	— foreign military sales
FMSCR	— foreign military sales credit
FY	— fiscal year
FYDP	— Five Year Defense Program
GLCM	— ground-launched cruise missile
GNP	— gross national product
GPS	— Global Positioning System
GSM	— ground station module
HAC	— House Appropriations Committee
HF	— high frequency
HLTF	— high-level task force
HMMWV	— high mobility multipurpose wheeled vehicle
HTKP	— hard-target kill potential
HUMINT	— human source intelligence
ICBM	— intercontinental ballistic missile
IFF	— identification, friend or foe
IMET	— International Military Education and Training
INF	— intermediate-range nuclear forces
ING	— Inactive National Guard
IOC	— initial operational capability
IRR	— Individual Ready Reserve
JCS	— Joint Chiefs of Staff
JDS	— Joint Deployment System
JFDP	— Joint Force Development Process
JINTACCS	— Joint Interoperability of Tactical Command and Control Systems
JRMB	— Joint Requirements and Management Board
JROC	— Joint Requirements Oversight Council

JRSC	— Jam-Resistant Secure Communications
JSTARS	— Joint Surveillance and Target Attack Radar System
JTIDS	— Joint Tactical Information Distribution System
JTTP	— joint tactics, techniques, and procedures
km	— kilometers
kt	— kilotons
LANTIRN	— low-altitude navigation and targeting infrared for night
LAV	— light armored vehicle
LCAC	— landing craft, air-cushion
LCU	— landing craft, utility
LEASAT	— Leased Satellite Communications Systems
LF	— low frequency
LHD	— amphibious assault ship (multi purpose)
LOC(s)	— line(s) of communication
LOGCAP	— Logistics Civil Augmentation Program
LOTS	— logistics over the shore
LRINF	— longer range intermediate-range nuclear forces
LSD	— landing ship dock
LSVs	— logistics support vessels
M-day	— Mobilization-day
MAB	— Marine amphibious brigade
MAC	— Military Airlift Command
MAF	— Marine amphibious force
MAGTF	— Marine air-ground task force
MAP	— Military Assistance Program
MBFR	— mutual and balanced force reductions
MCM	— mine countermeasures
MILCON	— military construction
MILSTAR	— Military Strategic and Tactical Relay System
MIRV	— multiple independently targetable reentry vehicle
MLRS	— Multiple-Launch Rocket System
mm	— millimeter
MPF	— multipurpose facility
MPS	— maritime pre-positioning ship
MRBM	— medium-range ballistic missile
MSE	— mobile subscriber equipment
MTM/D	— million-ton-miles per day
NATO	— North Atlantic Treaty Organization
NAVSPECWAR	— Navy Special Warfare
NBC	— nuclear, biological, and chemical
NCA	— National Command Authorities
NCMC	— NORAD Cheyenne Mountain Complex
NDRF	— National Defense Reserve Fleet
NEACP	— National Emergency Airborne Command Post
NIS	— NATO identification system
nm	— nautical mile
NMCC	— National Military Command Center
NMCS	— National Military Command System
NNBIS	— National Narcotics Border Interdiction System
NORAD	— North American Aerospace Defense Command
NSNF	— nonstrategic nuclear forces
NST	— Nuclear and Space Talks
NSWP	— Non-Soviet Warsaw Pact

NTPF	— near-term pre-positioning force
NUDET	— nuclear detonation detection
NWS	— North Warning System
OGS	— overseas ground station
OJCS	— Organization of the Joint Chiefs of Staff
OMB	— Office of Management and Budget
OPDS	— Offshore POL Discharge System, PREPO Ships
OTH-B	— over-the-horizon backscatter
PARCS	— Perimeter Acquisition Radar Attack Characterization System
PAVE PAWS	— Phased-Array Missile Warning System
PGM	— precision-guided missile
PIM	— pretrained individual manpower
PJH	— PLRS-JTIDS hybrid
PKO	— Peacekeeping Operations
PLRS	— Position Location Reporting System
POL	— petroleum, oils, and lubricants
POMCUS	— pre-positioning of materiel configured to unit sets
PPBS	— Planning, Programming, and Budgeting System
PRC	— People's Republic of China
PREPO	— pre-positioning
psi	— pounds per square inch
PSYOP	— psychological operations
PWRMS	— pre-positioned war reserve materiel stocks
R&D	— research and development
RC	— Reserve component(s)
RDT&E	— research, development, testing, and evaluation
RECCE	— reconnaissance
RIMS	— Revised Intertheater Mobility Study
ROK	— Republic of Korea
RO/RO	— roll-on/roll-off
RORSAT	— radar ocean reconnaissance satellite
ROS	— reduced operating status
RPV	— remotely piloted vehicle
RRF	— Ready Reserve Force
RSI	— rationalization, standardization, and interoperability
RSP	— Red Switch Project
RV	— reentry vehicle
SAC	— Strategic Air Command
SACLANT	— Supreme Allied Command Atlantic
SALT	— Strategic Arms Limitation Talks
SACEUR	— Supreme Allied Command Europe
SAM	— surface-to-air missile
SCOTT	— single channel objective tactical terminal
SCP	— Secure Conferencing Project
SDI	— Strategic Defense Initiative
SEAL	— Sea, Air, and Land
SELRES	— Selected Reserve
SHF	— super high frequency
SICBM	— small intercontinental ballistic missile
SIGINT	— signals intelligence
SIOP	— Single Integrated Operational Plan
SLBM	— submarine-launched ballistic missile
SLCM	— submarine-launched cruise missile

SLEP	— Service Life Extension Program
SLOC(s)	— sea line(s) of communication
SNA	— Soviet Naval Aviation
SNDV	— strategic nuclear delivery vehicles
SNF	— short-range nuclear forces
SOF	— special operations forces
SPRAA	— Strategic Plans and Resource Analysis Agency
SPS	— simplified processing station
SRAM	— short-range attack missile
SRBM	— short-range ballistic missile
SRINF	— shorter range intermediate-range nuclear forces
SRT(s)	— strategic relocatable targets
SS	— attack submarine
SSA	— diesel-powered auxiliary submarine
SSAN	— nuclear-powered auxiliary submarine
SSBN	— nuclear-powered ballistic missile submarine
SSG	— cruise missile attack submarine
SSGN	— nuclear-powered cruise missile attack submarine
SSN	— nuclear-powered attack submarine
SSQ	— auxiliary submarine
SST	— training submarine
SSTS	— Space Surveillance and Tracking System
SSUN	— Soviet submarine of unknown function
START	— Strategic Arms Reduction Talks
SUBROC	— submarine rocket
SVIP	— Secure Voice Improvement Program
SWA	— Southwest Asia
TACMS	— tactical missile system
TACS	— tactical air control system
TACS	— auxiliary craneship
TAH	— hospital ship
TARP	— tactical air reconnaissance pod
TAVB	— aviation logistics support ship
TFW	— tactical fighter wing
TLAM/N	— TOMAHAWK Land-Attack Cruise Missile (Nuclear)
TOW	— tube-launched, optically tracked, wire-guided missile
TRS	— tactical reconnaissance squadron
TVD	— theater of military operations
TW/AA	— tactical warning and attack assessment
UHF	— ultra high frequency
USCENTCOM	— US Central Command
USCINCCENT	— Commander in Chief, US Central Command
USCINCEUR	— Commander in Chief, US Europe
USCINCLANT	— Commander in Chief, US Atlantic Command
USCINCPAC	— Commander in Chief, US Pacific Command
USCINCRD	— Commander in Chief, US Readiness Command
USCINCSO	— Commander in Chief, US Southern Command
USCINCSpace	— Commander in Chief, US Space Command
USEUCOM	— US European Command
USLANTCOM	— US Atlantic Command
USPACOM	— US Pacific Command
USREDCOM	— US Readiness Command

USSOUTHCOM	— US Southern Command
USSPACECOM	— US Space Command
USSR	— Union of Soviet Socialist Republics
UTC	— unified transportation command
VLS	— Vertical Launch System
V/STOL	— vertical/short takeoff and landing
VTOL	— vertical takeoff and landing
WHNS	— wartime host-nation support
WIS	— WWMCCS Information System
WP	— Warsaw Pact
WRSA	— war reserve stock for allies
WWABNCP	— worldwide airborne command post
WWABNRES	— WWMCCS Airborne Resources
WWMCCS	— Worldwide Military Command and Control System