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NATIONAL BUREAU OF STANDARDS 1963-A

IT A B V R O S T I N

**UNITED STATES  
MILITARY POSTURE  
FOR  
FY 1983**

Prepared By

**THE ORGANIZATION OF THE JOINT CHIEFS OF STAFF**

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## PREFACE

The purpose of this statement on the military posture of the United States is to augment and amplify reports and statements made by members of the Organization of the Joint Chiefs of Staff at Congressional hearings in support of the FY 1983 Defense Budget.

Chapter I describes the challenges to US and allied security interests in both global and regional contexts. The chapter highlights the growth of Soviet military power, provides an overview of factors affecting US security interests in regions of special importance, and identifies the major implications of the various challenges.

Chapter II addresses major components of the military balance between the United States and Soviet Union and their respective allies. The balance is discussed in terms of defense expenditures and strategic, theater nuclear, and conventional forces.

Chapter III highlights several topics of special military interest. The topics addressed are the readiness of US forces, mobilization and industrial preparedness, mobility, manpower, technological leadership, security assistance, arms limitation agreements and negotiations, and US participation in Sinai peacekeeping activities.

(U) Detailed descriptions of the Armed Forces of the United States and its allies are found in Appendix A. Appendix B addresses the military capabilities of the Soviet Union, Cuba, and People's Republic of China, as well as international terrorism.



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# CHAPTER I: CHALLENGES TO FREE WORLD SECURITY

## THE REALITIES

US and allied security interests are challenged today by threats of unprecedented scope and urgency. Those threats derive from the sustained growth of Soviet military power and instabilities which confront the West in several regions of the underdeveloped world (Map 1-1).

The Soviet Union remains the only nation capable of seriously threatening the US by direct military attack. This capability has increased greatly during the past decade as the Soviet Union has continued to modernize its strategic nuclear forces. The Soviets have also significantly strengthened the general purpose forces which threaten US and allied interests in Europe and Asia, and have developed force projection capabilities for operations beyond the Soviet periphery. Together with its clients and surrogates, the Soviet Union is attempting to weaken the ties between the US and its allies and displace both US and allied influence in important areas of the Third World. Thus, Soviet military power and the inclination to project that power threaten the ability of the West to protect vital interests, assist in the peaceful resolution of Third World problems, and contain situations that could lead to global conflict.

Clearly, the most significant challenge to Western security would be an unconstrained US-Soviet conflict. US national security strategy must above all else aim to deter such conflict through the capability to deal decisively and effectively with threats around the world. US military forces and supporting capabilities, therefore,

must be designed to meet both regional demands and threats of global dimension.

## Regional Instability and US Security Interests

The nations of the free world are deeply affected by increasing instability in underdeveloped regions. This instability, whether arising from indigenous sources or external instigation, increases the difficulty of dealing constructively with development problems, threatens the flow of vital resources to industrialized countries, and provides the Soviet Union with opportunities to expand its influence at Western expense. Instability is most prevalent in four regions of special strategic interest to the US and its allies — the Caribbean Basin, Southern Africa, Southeast Asia, and the area stretching from Libya to Pakistan. Each of these regions is confronted by social, economic, and political turmoil which defies easy solution and often leads to insurgency and intra-regional strife; each has natural resources crucial to the economic vitality of many nations; and each is susceptible to political, economic, or military exploitation by outside powers. Terrorism, the specter of nuclear proliferation, and aggressive actions by some states (particularly those armed and supported by external sources) are endemic to each of these areas — with possibly far reaching impacts on our national security.

The potential loss of US and allied influence in any of these regions must be viewed as a matter of significant strategic concern. This concern is especially great in the case of the Middle East, where Arabian Gulf countries

## POTENTIAL SOURCES OF CONFLICT



CONTINUING CONFRONTATION/MILITARY BUILDUP  
RESOURCES-RICH REGIONS OF INSTABILITY

MAP I-1

produce more than half the oil imported around the globe. Any significant reduction in the export of this oil or other vital resources could have enormous economic and political effects on the free world.

Intraregional provocation and conflict take on importance because they pose considerable risks of embroiling neighboring nations as well as major powers outside the area. Such confrontations will continue, carrying with them special demands for conflict control, requirements to prevent exploitation by the Soviets and their clients, and the need to cope effectively with isolated hostile acts.

### **Roots and Consequences of Soviet Power**

Both the causes and consequences of destabilizing factors in the international environment would pose serious — but perhaps manageable — problems in a world without potential for major power confrontation. The enormous growth of Soviet military power, however, presents a direct challenge to Western security and significantly complicates efforts to deal with regional instabilities. The growing Soviet capabilities have altered both the perceptions and reality of the military balance and greatly increased Soviet influence in world affairs. The powerful Soviet military establishment is the principal basis of the Soviet belief that the so-called "correlation of forces" — a mix of military, economic, political, and social forces — has shifted irreversibly in their favor.

Current Soviet military capabilities are the result of deliberate decisions based on a coherent strategic doctrine and pursued by the government at enormous economic cost. The Soviets have been willing to incur the drain on their economy partly because their perception of military danger to the USSR is fed by institutional pressures from within the Soviet bureaucracy. More importantly, however, the Soviets view military strength as essential to the attainment of their political objectives. Soviet military doctrine, which calls for forces structured to fight and win at any level of conflict, is based on a belief in the political efficacy of military power. The Soviets depend heavily on military capabilities to support their policies toward the NATO Alliance and to maintain the pressures essential for Warsaw Pact cohesion — as demonstrated in the case of Poland. Moscow's increasing willingness to sponsor surrogate activities in the Third World provides additional evidence of the political significance the Soviets attach to military power. Further, the direct military intervention in Afghanistan reflects a growing degree of Soviet confidence to operate in areas where they hold great geostrategic advantage.

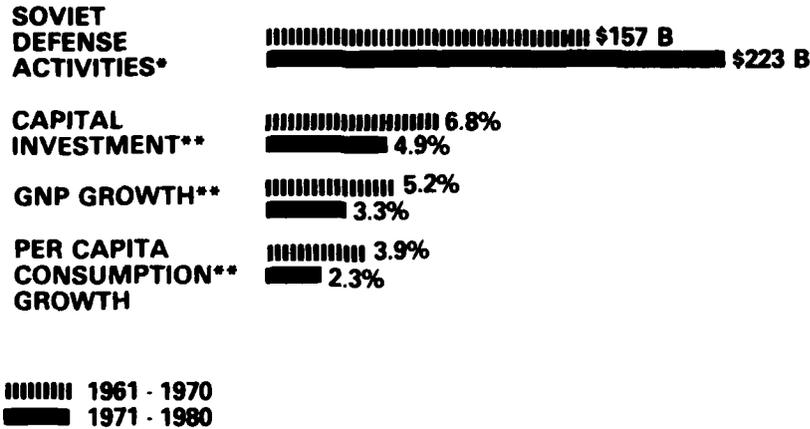
Guided by these attitudes toward the interrelationship of political objectives and military power, Soviet leaders have taken full advantage of their central control over the economic system to give continuing priority to military needs. The result, as shown in Chart I-1, has been a real increase in defense spending accompanied by declining rates of growth in gross national product (GNP), capital investment, and per capita consumption. Social and economic costs have been high, but so have the political dividends. The Soviet leaders know that their increased military power has permitted them to undertake politico-military initiatives that would have been too risky only a decade ago.

The Soviet economic system has serious limitations despite its ability to sustain the military buildup thus far. Resource constraints are severe and will become more so as economic growth continues to decline. The Soviet economy suffers from the excessive demands of defense spending (now estimated at 12-14 percent of GNP) and the inherent deficiencies of a rigid central planning system. These deficiencies include a long-term decline in productivity stemming from a relative inability to foster technological innovation in non-defense areas and a failure to motivate the work force. Confronted with these and other economic problems, Soviet leaders could eventually be forced to reduce the economic burden of their military programs.

At present there is no evidence to suggest that the Soviet leaders will willingly moderate their efforts to gain military advantage. Increased Soviet prestige and freedom of action have probably confirmed their belief in the tenets of their strategic approach and reinforced their justification of the sacrifices required to implement that approach. The basic nature of Soviet military doctrine is also unlikely to change. The Soviet view of the utility of clearly superior military forces is shared by political and military leaders alike and has deep historical roots. The Soviets are likely to continue to view the translation of military power into political gains as a long-term process, best promoted by persistent diplomatic efforts, covert action, and the steady development of military strength — supported by a pervasive program of propaganda and disinformation.

A central question for the 1980s is whether Moscow will be more inclined to confront the United States in a developing crisis. While the Soviets must still view a US-Soviet conflict as extremely hazardous, they may be more willing to accept the risks of confrontation, particularly where they have significant military and geostrategic advantages.

# TRENDS IN SOVIET DEFENSE EXPENDITURES AND ECONOMIC PERFORMANCE



SOURCE: CIA  
 \* REAL AVERAGE ANNUAL COSTS IN BILLIONS OF 1983 DOLLARS  
 \*\* REAL AVERAGE ANNUAL RATES OF GROWTH (PERCENT)

CHART I - 1

## The Need for Regional and Global Perspectives

The interaction of the threats to peace and stability posed by the realities of Soviet military power and intransigent Third World problems makes the 1980s a potentially explosive decade. Because the factors that give rise to threats to free world security are not transitory phenomena, the US and its allies clearly face a protracted period of challenge. Neither the Soviet Union nor its surrogates can be expected to abandon their efforts to exploit the vulnerabilities of the Third World or to extend their influence in areas vital to free world security.

Advances in Soviet power relative to the West have resulted not only from absolute increases in Soviet capability, but also the failure of the US and its allies to keep pace. The Western democracies have been far less willing to demand economic sacrifice in peacetime and more inclined to constrain defense spending during periods of reduced tension. The Soviets have shown that they regard Western restraint as an opportunity for advantage and an invitation to subvert US and allied interests worldwide. Because it is unlikely that internal economic and social pressures alone will force the Soviet leaders to adopt a less menacing foreign policy, they must be convinced that further investments in military power can provide no net and lasting advantage.

*Confronted with varied challenges, the US and its allies must combine their resources to enhance global and regional stability; strengthen collective approaches to security; and promote economic, social, and political progress in unstable areas. The failure to do so will entail enormous costs for the West. A lack of capability to respond to aggression in one region without exposing unacceptable vulnerabilities in others can lead to more widespread conflict. Only a persistent allied response will be adequate to meet the enduring global threat.*

If the industrialized democracies retain access to the resource-rich regions and mobilize their own considerable human and material potential, they will be able to meet the long-term threat. This potential, however, will have little effect unless allied efforts can be coordinated under a broad strategy. Allies must be willing to share with the US the costs and risks of turning back the worldwide challenge. The collective effort inevitably will be shaped by the diverse outlooks and interests of each nation, but this fact cannot be allowed to divert us from our common purpose.

Drawing strength from diversity is the task of leadership, a special responsibility of the United States. In recognition of its unique and indispensable role, the US has begun to reassert the leadership necessary to restore confidence and consensus among its allies and

friends. Increased attention and resources are now being devoted to the urgent task of rebuilding US military strength as a first step in restoring that leadership. If we continue to pursue our current initiatives, much will be done over the next 4-5 years to alleviate existing deficiencies in force structure, flexibility, and readiness. To be truly effective, these initiatives must be reinforced with similar commitments by US allies and be viewed as initial steps in a long-term program to overcome adverse trends in the military balance. The Soviet military advantage cannot be offset in a year or even a decade. The Soviet leaders are well aware of the superior economic and military potential available to the US and its allies, but based on our performance over the past two decades, they have reason to doubt whether the West will have the singleness of purpose and collective staying power for a protracted struggle.

The following sections provide an overview of US and allied interests, threats, and general strategic approaches in various regions of the world. While the areas addressed have unique characteristics and vulnerabilities which require assessment in a regional context, the interrelationship of events among these re-

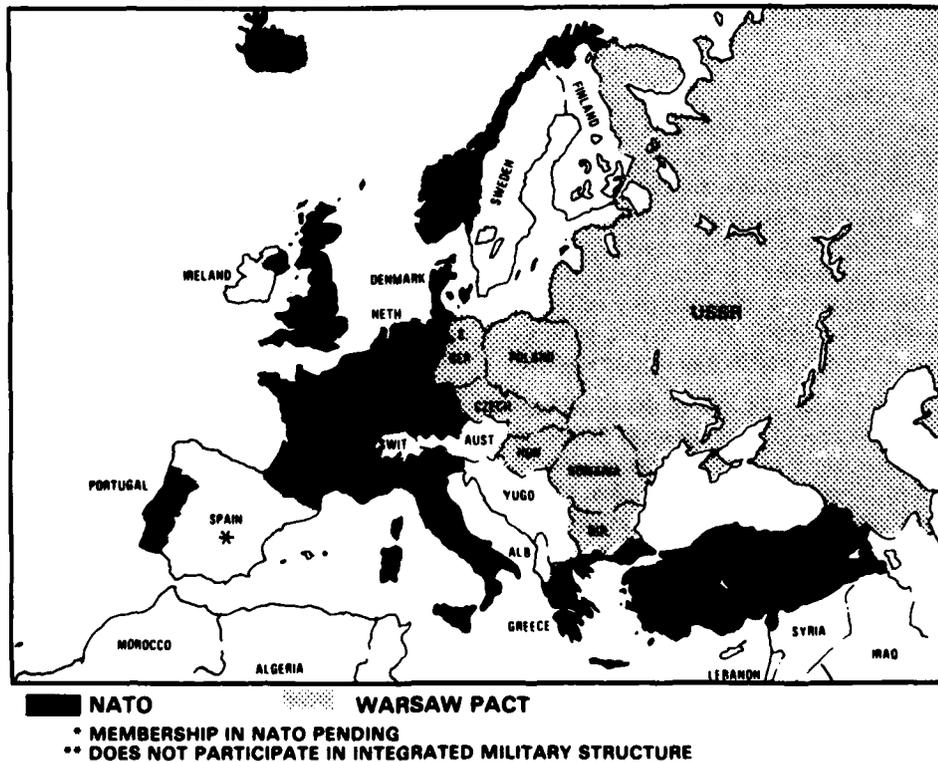
gions demands that US security efforts in one area be designed and executed in light of potential effects on other regions. US national interests, international influences, and resource availability will often require the establishment of priorities in our military strategies for these regions.

The regional assessments open with a discussion of Western Europe and the Atlantic, where any conflict would likely result immediately in a direct US-Soviet confrontation. The region is also unique in that the nations of East and West are clearly arrayed in opposing alliances which represent collective interests, mutual defense arrangements, and — paradoxically — problems of alliance management that may divert governments from the task of meeting external threats. The other regions addressed are areas in which Western interests are threatened by major instabilities and possibilities for wider conflict.

### WESTERN EUROPE, NATO, AND ATLANTIC

A secure Western Europe is of vital importance to the United States (Map I-2). The continued deployment of

## WESTERN EUROPE, NATO AND THE WARSAW PACT



AS OF 1 JANUARY 1982

MAP I - 2

US forces in Europe is evidence of this nation's determination to maintain the independence and territorial integrity of all members of the Atlantic Alliance. Yet in spite of strong historical ties and mutual interests between North America and Western Europe, divergent views among the Allies have led to claims that the North Atlantic Treaty Organization (NATO) is facing a trans-Atlantic crisis. Disparate views among NATO nations are not uncommon, but the current differences are noteworthy because they coincide with unprecedented challenges to Western security and determined Soviet efforts to fragment the Alliance.

Although current differences within the Alliance should be viewed in the context of the stronger and

more lasting forces that bind us together, many factors complicate NATO relationships. Despite the economic power of the European nations, some Allies are failing to provide adequately for real growth in defense spending. Competing social demands, economic difficulties, and vocal minority opposition make it difficult for some European leaders to persuade their nations to assume a more equitable share of the collective responsibilities. The relative contributions of NATO and Warsaw Pact resources to their respective military capabilities are shown on Chart I-2.

As evidenced in Poland, the Warsaw Pact also has its own difficulties — but of a fundamentally different nature. Moscow has to devote significant military, polit-

## NATO VS WARSAW PACT

**POPULATION AND MILITARY MANPOWER 1980**

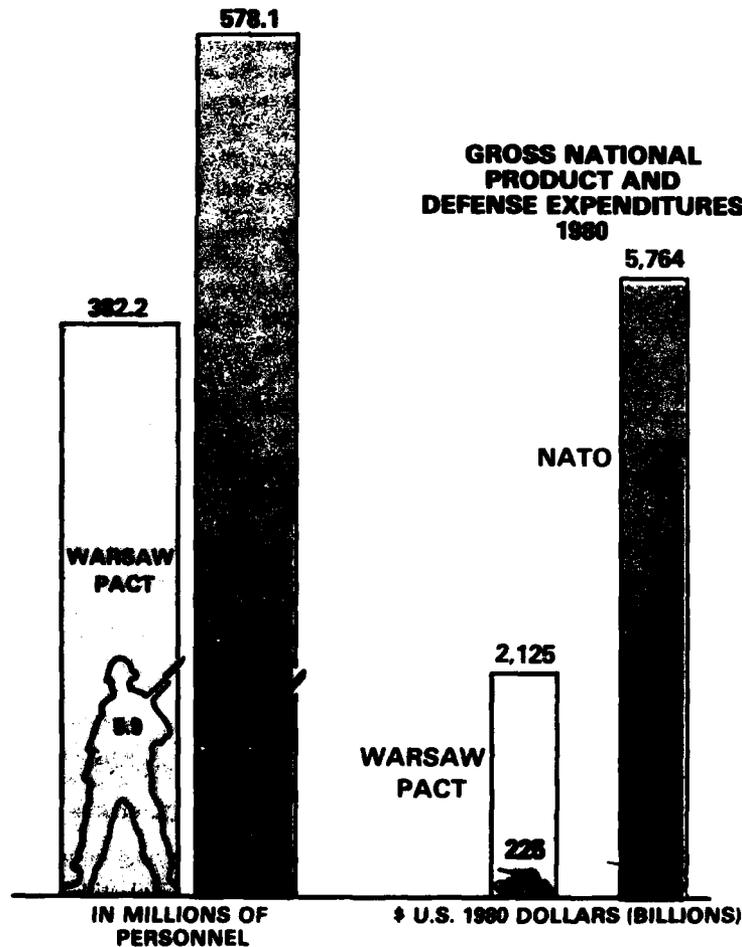


CHART I - 2

ical, and economic resources to manage these difficulties and must question the reliability of some of its allies.

The security of Western Europe rests on the ability of the US and its Allies to maintain conventional, theater nuclear, and strategic nuclear forces sufficient for the full spectrum of deterrence and defense. The loss of clear US superiority at the strategic level has placed a greater burden on NATO general purpose force capabilities to maintain deterrence. The Alliance must remain firm in its commitment to modernize its theater nuclear weapons, while pursuing arms control, and improve its conventional deterrent capabilities.

NATO's Northern Region defenses are of continuing concern, particularly in light of improving Soviet air and naval forces opposite the region. Adequate warning of a Soviet attack would be crucial because land defenses in northern Europe depend heavily on regional reserve forces and outside reinforcements. NATO will be required to place special emphasis on adequate pre-positioned stocks and air defenses to reduce the vulnerability of arriving reinforcements.

NATO's posture in the Central Region is improving with the modernization of land and air combat forces; improvements to command, control and communications (C<sup>3</sup>) systems interoperability; and other measures. Deficiencies remain, however, especially in the areas of electronic warfare (EW); chemical warfare (CW); air defense; C<sup>3</sup>; and war reserve stocks of munitions, spare parts, and other supplies. NATO is also hindered by the malpositioning of some forward deployed units, a situation which dictates the need for timely warning if these forces are to reach their forward positions in time to meet an attack. While NATO is making some progress in rectifying these shortcomings, the Warsaw Pact is increasing its capability for either a reinforced or unreinforced attack in the Central Region.

NATO's ability to carry out its strategy in the Southern Region is hampered by persistent economic, political, and military difficulties among Alliance members. Although the anticipated entry of Spain into NATO should provide member countries increased operational flexibility and training opportunities, and otherwise strengthen the Southern Region, there will continue to be shortfalls in Southern Region military capabilities. CW and EW capabilities need improvement, and there is a shortage of war reserve stocks. Further, NATO naval capabilities in the region need to be improved to meet the threat of Soviet naval and air forces to the eastern Mediterranean.

The credibility of a conventional defense of Western Europe will rest on the capability to move reinforcements rapidly across Atlantic lines of communications

(LOCs). For this reason, the loss of a clear margin of maritime superiority over the Warsaw Pact is particularly troubling to NATO. NATO's reinforcement capability is also limited by shortfalls in the airlift and sealift needed to transport personnel and equipment to Europe.

In summary, NATO members continue to share a common interest in deterring Soviet aggression, but hold diverse views on how best to insure the security of Western Europe. Collectively these nations have immense wealth, but they are not uniformly able or willing to bear the increased burden of common defense. NATO military capabilities have begun to improve, particularly in the Central Region, but much more needs to be done. These circumstances clearly call for a revitalized Alliance, promoted by US leadership and invigorated by its example.

## MIDDLE EAST AND SOUTHWEST ASIA

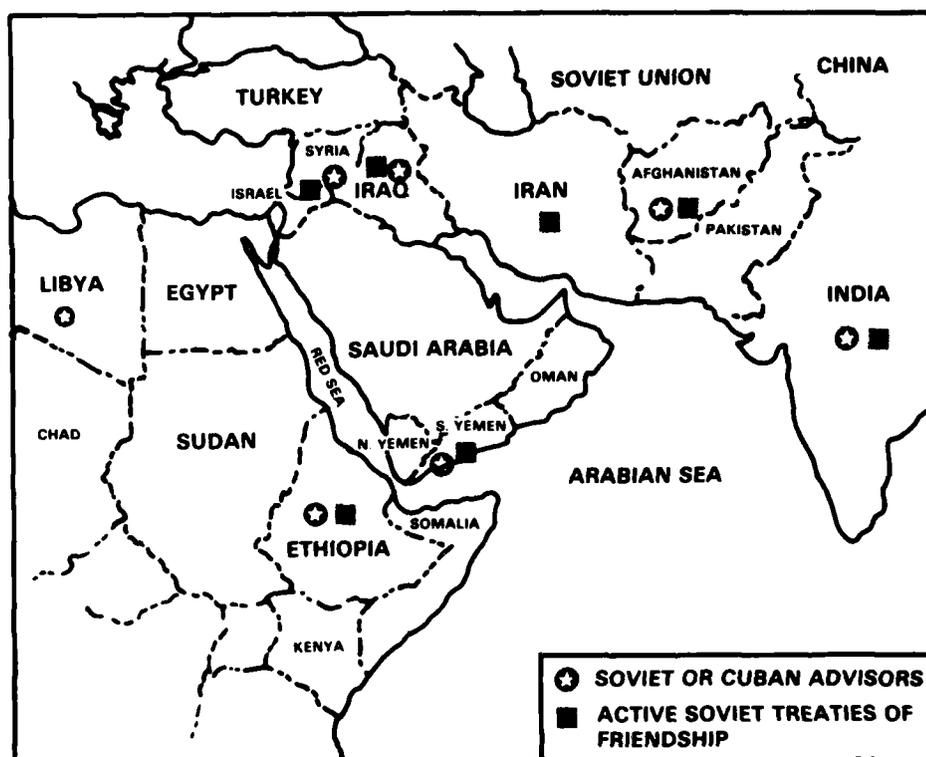
US interests in the Middle East and Southwest Asia focus largely, but not exclusively, on the region's oil reserves. The United States is determined to preclude disruption or hostile control of these vital resources and to limit the spread of Soviet influence in the area. Other US interests, important in their own right but bearing heavily on the security of energy resources, include peaceful resolution of the Arab-Israeli conflict and increased stability throughout the region (Map I-3).

The threats to US interests in the area are numerous, varied, and interlocking; tensions in the region are characteristically high. Many nations in the region are vulnerable to destabilizing pressures and prone to insurgencies, coups d'état, and civil wars. Internal instability can invite intervention by other nations, as events in Lebanon and other countries have shown. By invading Afghanistan, the Soviet Union demonstrated its willingness and ability to interfere by direct military means in the affairs of regional states.

The Arab-Israeli dispute and related crisis in Lebanon contribute greatly to regional tensions and to the potential for military involvement by external powers. Although the signing of the Egyptian-Israeli peace treaty reduced the probability of a major Arab-Israeli war, many problems at the root of the larger conflict remain. Even with a peace settlement, the potential for conflict will continue, as will opportunities for Soviet influence in the region. With a settlement of major issues, however, the potential for area-wide conflict will diminish.

Despite occasional overtures of friendship, quarrels and rivalries among Arab states will persist. Potential causes of conflict include stresses generated by the Arab-Israeli disagreement, realignment of traditional alliances, Islamic fundamentalist movements, and the in-

## MIDDLE EAST AND SOUTHWEST ASIA



AS OF 1 JANUARY 1982

MAP I - 3

compatibility between revolutionary and traditional regimes. Countries especially prone to intra-Arab conflict include the two Yemens, Syria, Iraq, and Libya. Libya probably will continue its attempts to undermine efforts to achieve an Arab-Israeli accommodation, and is likely to contribute to attempts to overthrow Arab and non-Arab regimes which it opposes.

The situation in Iran continues to deteriorate. Political upheaval is seriously undermining the Iranian state and its ability to maintain internal and external security. The many pressure groups competing for influence in Iran complicate efforts to predict the future course of Iranian-US relations. However, Iran can be expected to foster serious social, economic, and political strains elsewhere in the region. Iran's ability and inclination to employ sizeable forces outside its own borders has diminished, but the promotion of Shia militance abroad is likely to remain a threat to traditional regimes in the Gulf.

The smaller Gulf sheikdoms also will have to deal with potentially disruptive political challenges from leftist labor factions, large foreign worker populations, and, in some cases, large Palestinian minorities.

US and allied interests are affected by instability within and among nations of the region. Arabian Gulf oil supplies are highly vulnerable to interruption by political action, insurgent violence, or open international conflict. Indeed, the Iraq-Iran war has established the precedent for attacks on oil facilities to undermine an opponent's economic infrastructure. Because of such threats, the US should support efforts to strengthen friendly regional states in their ability to deter and if necessary defend against attacks by hostile and unpredictable neighbors; the US should encourage similar action by its allies.

The most dangerous threat to US interests in the region arises from the proximity, power, and behavior of the Soviet Union. The Soviets have long sought to expand their influence in the area at Western expense. Direct or indirect control of Arabian Gulf oil would give the USSR great leverage over free world economies and help ameliorate possible long-term Soviet Bloc energy deficiencies. An increased presence in the area could provide the Soviets a greater capability to contain the forces of Islamic resurgence and ethnic self-determination that threaten to spill into the USSR.

Despite occasional setbacks, the Soviet Union has increased its political and military access to the region. Soviet involvement is highlighted by naval forces deployed in the Mediterranean and Indian Ocean, increased presence in South Yemen, invasion of Afghanistan, increased cooperation with Syria and Libya, and use of Cuban proxies in Ethiopia. Soviet forces located in the southern USSR (and perhaps those in Afghanistan) are capable of large-scale military operations in Iran.

The protection of US interests in the Middle East and Southwest Asia and the establishment of a strong regional security framework will require improved US military capabilities as well as diplomatic, economic, and security assistance initiatives. This framework must acknowledge regional concerns and provide for appropriate US responses. If the US is to be capable of deterring or defeating Soviet aggression in the area, regional and en route transit rights and support facilities will be required to deploy and sustain forces in a crisis. Progress has been made toward the development of regional cooperation to counter the Soviet threat.

Ongoing US efforts to promote peace and security in the Middle East and Southwest Asia include continued support of the Egyptian-Israeli peace process. Stability in the region should be increased by the deployment in the Sinai of the Multinational Force and Observers (MFO) in a peacekeeping and confidence-building role. This international organization, with significant US military and civilian participation, will be in position before the remainder of the Sinai is returned to Egyptian control on 25 April 1982.

Progress in the development of US capabilities for operations in Southwest Asia is reflected in the continuing evolution of the Rapid Deployment Joint Task Force (RDJTF). The RDJTF Headquarters was established in 1980 as a subordinate element of US Readiness Command, with the responsibility to plan for contingencies, conduct joint training and exercises, and prepare for and implement deployment as a combat command. Planning and preparation have proceeded rapidly. On 1 October 1981 the RDJTF, which reports directly to the National Command Authorities (NCA) through the Joint Chiefs of Staff, was established as a separate joint task force as an interim step in the transition to a full unified command. Because of the great range of possible threats in the Arabian Gulf region, prudent military planning requires the capability to deploy and employ a balanced and flexible US projection force that combines the unique capabilities of each of the Services.

A number of exercises have been conducted to evaluate progress in the development of the RDJTF and

provide operational experience in its employment. Operation BRIGHT STAR 82, conducted in October-November 1981, was the largest US exercise ever conducted in the Southwest Asia region. The exercise involved forces deployed in four countries of the region under the command and control of the Commander, RDJTF. The continuing development of the RDJTF signifies the depth of the US commitment to the defense of its interests in Southwest Asia.

## AFRICA

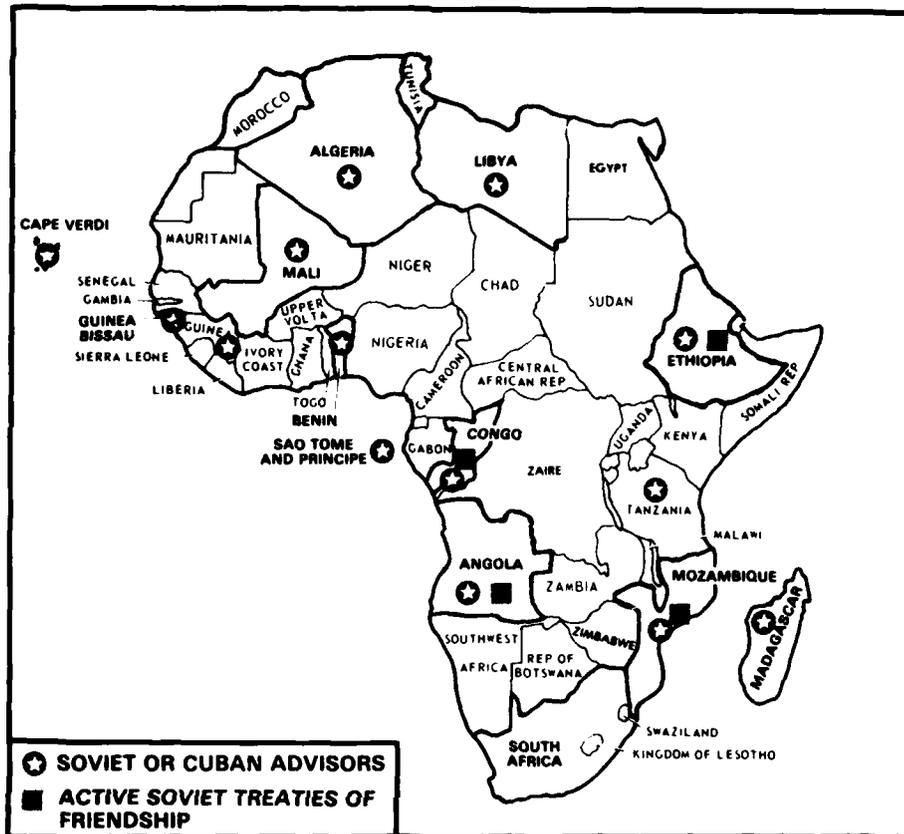
Africa has now assumed a more prominent place in US security policy (Map I-4). Africa is the principal free world source of gold and several other minerals important to US, West European, and Japanese industries. Countries south of the Sahara hold between 80 and 97 percent of the free world's reserves of chromite, industrial diamonds, manganese, vanadium, and the platinum-group metals. In 1980, Africa produced 10 percent of the world's oil, including about 25 percent of that imported by the US and Western Europe.

Africa also has great geostrategic importance, especially in view of Western and Japanese dependence on Arabian Gulf oil. Northeast Africa affords both the US and the USSR military access to the Middle East, and the continent is circumscribed by vital sea lines of communications (SLOCs). In 1980, about 50 percent of the Arabian Gulf oil shipments passed around the Cape of Good Hope; hostile forces anywhere on the African periphery could threaten the Western oil lifeline.

Threats to US security interests in Africa fall into three categories. First are the conflicts among African countries that would exist even if there were no outside support or instigation. Steeped in religious, tribal, and racial differences that spill across boundaries imposed during colonial times, these disputes involve nations in several parts of the continent. None of these conflicts, however, is a purely regional matter. In Africa, as elsewhere, the Soviet Union attempts to exploit indigenous strife for its own strategic ends.

The rapid expansion of Soviet influence in Africa during the last decade constitutes the second general threat to US and Western interests in the region. The Soviets exploit African instabilities primarily through low cost arms sales, Soviet military advisors, limited economic and internal security aid, and sponsorship of Cuban and East European proxies. Cuba alone maintains more than 22,000 military personnel in Africa, including large numbers of combat troops. Marxist regimes in Ethiopia, Angola, and Mozambique depend heavily on support by the Soviets or their surrogates,

# AFRICA



AS OF 1 JANUARY 1982

MAP I - 4

and in turn provide footholds from which the Soviet Bloc may attempt to deny military access and resources critical to the West.

To a large extent, Soviet interests in Africa coincide with the aims and methods of Libyan adventurism, the third major threat to US interests in the area. Motivated by Qadhafi's radical leadership and heavily armed by the Soviet Union, Libya seeks to establish an Islamic Empire in North Africa and has intervened militarily in other African countries, most recently in Chad. In addition, Libya has fomented insurgency throughout the continent, supported terrorism on a global scale, and attempted to deny freedom of the seas in the Gulf of Sidra.

These complex and interwoven threats constitute a serious challenge to US security. The US response to internal instability must center on an understanding of each nation and a careful blending of security assistance with economic, political, and technical support. US efforts to promote internal stability and economic self-sufficiency will help to limit Soviet influence by re-

ducing African dependence on Soviet aid. The United States must work in concert with friends and allies to develop consistent and mutually supporting policies designed to weaken incentives for cooperation with the Soviet Union and other hostile nations, create more effective support of US security objectives, and promote Africa's economic and social development.

## PACIFIC AND EAST ASIA

The United States has many enduring interests in the East Asia and Pacific Ocean area. The US now conducts more trade with countries of this region than with Western Europe, is committed by treaty or conviction to the defense of several Pacific and Asian allies, and maintains a deep interest in stability and progress throughout the whole area.

As in other regions, challenges to stability and US interests arise from diverse causes. Some causes of instability are rooted in economic underdevelopment and social turmoil, some in nationalistic aspirations, and others in the aggressive designs of hostile nations. The

main threats to peace and stability in the region are posed by the Soviet Union's expanding military power and access, North Korea's military buildup and aggressive posture, and Vietnam's aggression (Map I-5).

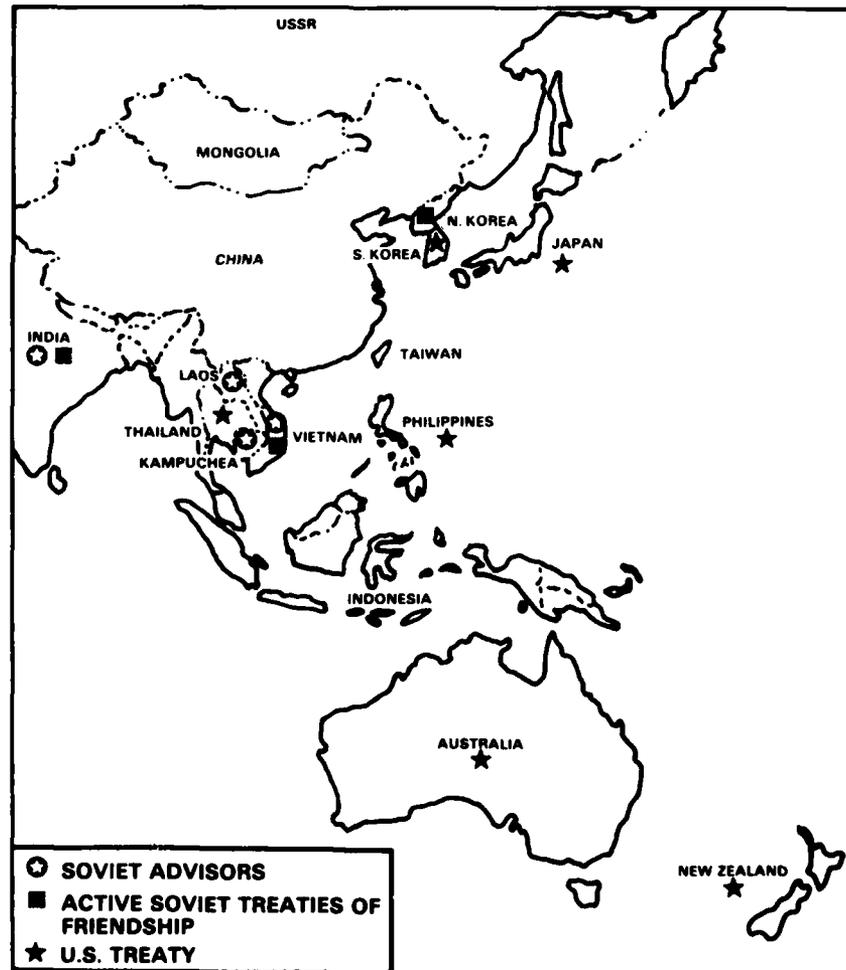
Soviet military capabilities in the Pacific and East Asia are improving rapidly. The Pacific Fleet is now the largest Soviet fleet and provides the USSR an improved warfighting capability and the potential for added political influence. In addition, Soviet naval aviation capabilities present an increased threat to the SLOCs in the region, and Soviet air and ground units in the Eastern USSR are being strengthened and modernized. The Soviets are also attempting to increase their influence and military support base in Southeast Asia. For large amounts of economic and military assistance, the Socialist Republic of Vietnam (SRV) has granted the So-

viets use of important air and naval bases. These bases provide the Soviets direct access to vital SLOCs and support for intelligence collection activities that significantly add to US and allied security concerns.

The strategic importance of the Korean Peninsula continues to justify US commitments to the security of the Republic of Korea (ROK). In meeting these commitments for more than 30 years, the US has demonstrated its resolve to both allies and potential enemies. The economic progress achieved by the ROK is additional evidence of the positive effects of ROK-US cooperation in security and economic affairs.

Although the ROK provides the bulk of the military capabilities for its own defense, strong US combat and logistic support is still needed. North Korean military

## EAST ASIA AND THE PACIFIC



AS OF 1 JANUARY 1982

MAP I - 5

capabilities continue to grow, and there is no evidence that North Korea has abandoned its objective of reuniting the North and South on its own terms. The commitment to ROK security signalled by the US military presence has been an important factor in maintaining peace on the peninsula since 1953. There is a continuing need to upgrade the capabilities of US forces in Korea to counter the North Korean buildup.

The SRV continues to employ military force against neighboring countries in its pursuit of hegemony in Southeast Asia. The SRV is expected to continue to occupy Kampuchea and maintain a dominant influence over Laos. Border incursions, subversion, and infiltration are likely to keep tensions high in the border areas. The United States remains committed to the Manila Pact and support of Thailand against external aggression.

The United States regards China as an increasingly important nation — one that indirectly contributes to US global and regional security objectives. Essentially a regional power, China seeks a closer relationship with the US and the West to help offset the threat of Soviet expansionism, acquire modern technology to assist in the development of its industrial production base, and meet its long-term military modernization needs. By continuing to develop security and economic relationships with China, the US hopes to encourage an increasing Chinese commitment to regional stability.

Japan continues to play a vital role in maintaining stability in the Asian-Pacific region in partnership with the United States. Japanese cooperation, an essential component of US strategy for Asia, has been evident in bilateral defense planning, cost-sharing programs, and support for US forces based in Japan. Japanese overseas economic assistance programs provide additional support to regional stability. The US-Japan defense relationship has been characterized by frank exchanges of views on security issues of mutual concern. To further bilateral cooperation, particularly in view of recent Soviet activities in the region and increased US concerns in Southwest Asia and the Indian Ocean, it is essential that Japan increase its defense capabilities.

US access to Philippine bases is essential for maintaining the military balance in Southeast Asia. The bases provide key transshipment points for US logistic resupply efforts to the Western Pacific and Indian Ocean and are important to the maintenance of US military access to the region. Implementation of the 1979 Amendment to the Military Bases Agreement has gone smoothly and the US continues to enjoy unhampered use of the facilities.

In addition to continuing its long-standing defense ties with the Philippines and Thailand, the US seeks to

strengthen the self-defense capabilities of Indonesia, Malaysia, and Singapore, and encourage collective contributions by these countries to regional stability.

Australia and New Zealand continue to provide a stabilizing presence in the region. Their active roles as parties to the Australia-New Zealand-US (ANZUS) Treaty, economic ties and political rapport with friendly nations of Southeast Asia, and training and economic assistance to the newly independent island nations of the Southwest Pacific help to counter the growing Soviet presence in the area. Both countries are attempting to modernize their armed forces without placing great burdens on their economies. Australia's firm support for US policies in Southwest Asia has been reflected by increased naval deployments and aviation patrols in the Indian Ocean.

Although steps are being taken to improve the US force posture in the Pacific, these efforts have not kept pace with the growth of Soviet power in the region. The resulting increase in threats to US interests in the area require continued US and allied force improvements and strengthened US security relationships in the area.

## WESTERN HEMISPHERE

The defense of North America is this nation's primary security concern. Since World War II, the United States has relied on a strategy that calls for defense of the Western Hemisphere and forward defense against potential adversaries in other areas. Essentially, defense of the Western Hemisphere has meant that the US would maintain strategic nuclear deterrence, develop closer relations with Canada and Mexico, and foster collective security arrangements among Latin American countries. US strategy has presupposed a friendly and supportive Latin America, which in time of conflict would not require the employment of substantial US forces.

It is becoming increasingly clear that a secure hemisphere is no longer a foregone conclusion and that the US must now play a more active and enlightened role in hemispheric affairs. Specifically, the US must continue to build on interests shared with Canada and Mexico, while viewing Latin America not as a Third World area removed from the traditional focus of US strategy, but as a contiguous region whose future bears directly on the security of the hemisphere as a whole.

Appropriately, the US maintains a more extensive mutual defense relationship with Canada than with any other country. Among the factors that underpin this special relationship are the sharing of a lengthy border, a high degree of economic interdependence, Canada's location between the US and the USSR, and a common status as the only two non-European members of

NATO. Since the 1941 Hyde Park Agreement, Canada and the US have cooperated in a wide range of defense production efforts. These efforts have included measures to strengthen and integrate the North American defense industrial base, encourage the exchange of data and technology, and provide for joint industrial mobilization planning.

Combined US-Canadian defense efforts are equally extensive. The United States and Canada cooperate on security policy matters as well as detailed planning for combined operations. The most prominent example of combined efforts is the North American Aerospace Defense Command (NORAD) established in 1958. NORAD is an integrated bilateral military command which controls US and Canadian air defense forces and provides early warning and attack assessment of air and missile attacks on North America.

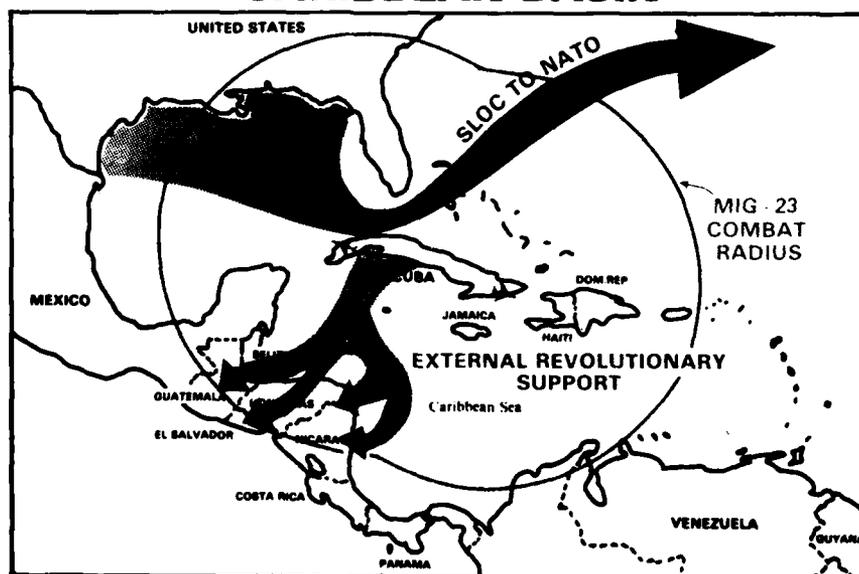
While US-Canadian relations provide extensive security to the north, US security concerns in Latin America have increased greatly in recent years. Growing political and economic instability, increasing Soviet and Cuban military activism, expanding acquisition of arms by Nicaragua, and mounting anti-US sentiments in some countries tend to reduce US influence and undermine US security interests in the south. At the same time, the

US and its European allies have become more dependent on the region's resources and on the SLOCs over which they move. In addition, many Latin American countries, especially emerging regional economic powers, have an increased ability and incentive to define and pursue their own security interests. These trends have caused the US to reexamine its approach to regional security.

The most immediate and serious threats to US security interests in Latin America are concentrated in the Caribbean Basin (Map I-6). The security of the Basin is of vital importance to the United States because of its proximity and our many economic, strategic, and cultural ties with Caribbean nations. Moreover, SLOCs in the area provide transport for some 60 percent of US crude oil and 70 percent of US refined oil imports, and are essential to the successful defense of Europe. In the event of war, a significant number of the initial US reinforcements and supplies for NATO would sail from Gulf ports.

Cuba and the Soviet Union constitute the greatest threat to US security in the Caribbean Basin. Armed and supported economically by the Soviet Union, Cuba serves as a springboard for efforts to spread insurgency and revolution, as well as a base from which to project Soviet power into the Western Hemisphere in wartime.

## CARIBBEAN BASIN



MAP I - 6

The growing severity of the threat posed by the Soviet-Cuban relationship is highlighted by the fact that the supply of Soviet arms to Cuba has increased dramatically in the past year (Chart I-3). Because of its strategic position adjacent to key SLOCs in the region, Cuba would pose a significant threat to US crisis response capabilities.

Threats to regional stability are further compounded by increased Soviet-Cuban ties to Nicaragua and combined efforts to instigate and support violence in Central America. The major struggle now centers in El Salvador, where radical leftist insurgents are receiving external aid and encouragement, largely from Cuba and Nicaragua. The introduction of Soviet weapons and Cuban military personnel into Nicaragua has made that country the strongest military power in Central America. The Cuban-Nicaraguan military connection has created a destabilizing influence and increased Cuban-Soviet power projection capabilities in this critical region.

Other areas of Latin America are also important to US and allied security. For instance, the SLOCs passing

through the South Atlantic carry nearly half of the US crude oil imports and about two-thirds of Western Europe's petroleum imports. These same SLOCs also carry from 20 to 85 percent of various strategic minerals imported by the US from Southern Africa. Regional powers such as Brazil and Argentina depend heavily on the South Atlantic SLOCs, and therefore share great interest in protecting them.

To protect its security interests in Latin America, the US must revitalize its relations with nations in the area. These relationships must be built upon converging interests and demonstrate that the US is a reliable and capable security partner. Peacetime military involvement should be increased through greater military presence, increased security assistance, and expanded military-to-military contacts. At the same time, the US must assist countries in the region in efforts to improve socio-economic conditions as an essential contribution to stability and progress.

### SOVIET MILITARY DELIVERIES TO CUBA

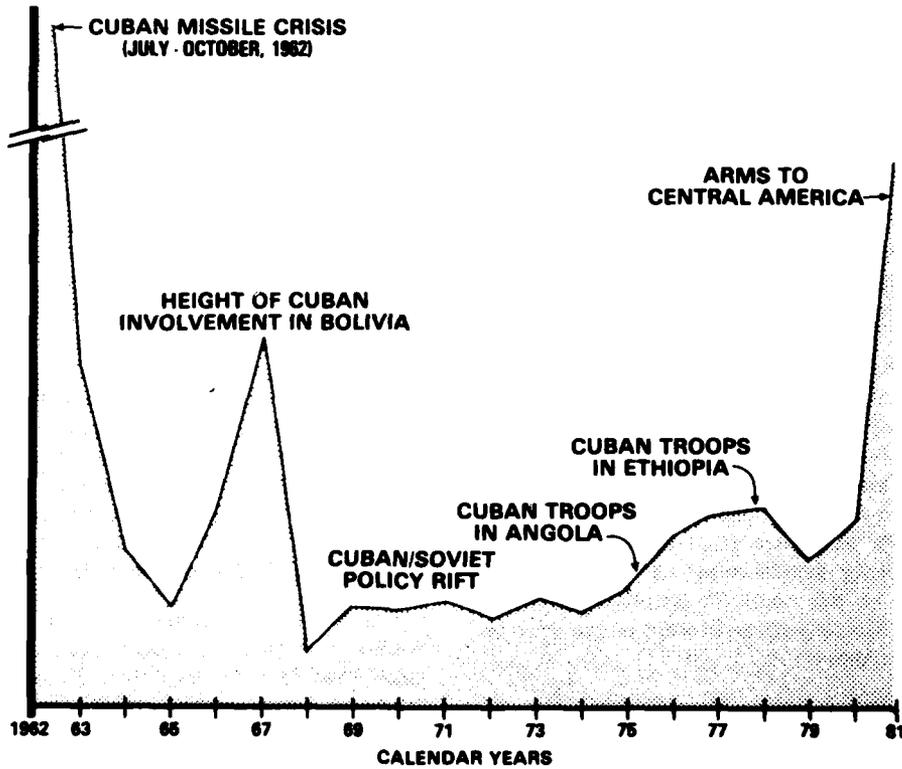


CHART I - 3

## IMPLICATIONS FOR US STRATEGY AND FORCES

US and allied security risks have been greatly heightened by the continuing buildup of Soviet military power and the increasing complexity of regional threats. Given these trends, it is more important than ever that US military strategy be designed to deter or defeat aggression at all levels of conflict. The defense posture required to achieve these fundamental security objectives must include the full range of force capabilities necessary for strategic nuclear warfare, a major NATO-Warsaw Pact confrontation, and those lower levels of regional conflict which, if not controlled, could lead to more serious and demanding global war.

The consequences of failing to deter strategic nuclear warfare or a full scale attack on NATO are more obvious than those of regional conflict. The growth of Soviet capabilities to project military power beyond their own periphery to other regions of US strategic concern, however, greatly compounds the risk of widespread conflict growing out of regional confrontations. Such threats can only be met by the capability to respond rapidly with sufficient force and to sustain operations as long as necessary. The steady expansion and upgrading of the Soviet conventional forces and war-supporting industrial base, coupled with the loss of US nuclear superiority, make improvement of the US and allied conventional capabilities essential. The requirement for conventional defense demands responsive national capabilities for manpower and industrial mobilization, and ready forces capable of containing conflict until additional resources can be mobilized.

US allies must realize that the US alone cannot bear the burden of defense necessary to implement a global strategy against the Soviet Union and its widespread network of allies, clients, and surrogates. Although the US will remain unique in its ability to project large forces on a global scale, the more prosperous allies must be encouraged to assume a greater share of defense responsibilities in their own regions and in other areas where they have vital interests. Less prosperous allies and friends must meet their responsibilities with the help of increased security assistance from more affluent nations. Allied military cooperation will take on ever greater urgency as the need for combined commitments, planning, and operations in areas of common interest continues to grow.

The overall allied strategic approach must also include nonmilitary aspects of national power. While the US and its allies must have the military capability to meet armed threats to their interests from any source, they must also use their great economic and diplomatic

resources to full advantage in efforts to relieve the causes of instability and frustrate Soviet strategy.

The US is determined to do its part to reduce mutual security risks. Recognizing that the Soviet Union and other adversaries have capitalized on a long period of Western restraint, the US has embarked energetically on the rebuilding of its own military capabilities. Plans and programs to bolster US military strength must be designed with long-term needs in mind because it will take years of steady support for US and allied efforts to reverse current trends, restore the global military balance, and reduce risks to an acceptable level. At the same time, plans and programs must provide for increase in readiness and sustainability of existing forces to meet current threats.

Current US initiatives address the full range of required forces and supporting capabilities. As a matter of particular urgency, the US has begun to redress the growing strategic nuclear imbalance and to counter adverse trends which have contributed greatly to the declining security and confidence of the West. Recent decisions to modernize US strategic offensive forces, strengthen strategic defense, and improve command and control capabilities must be implemented without further delay.

In addition, the US must follow through on initiatives to assure that its general purpose forces are strong, modern, ready, and well positioned for potential employment. The United States will continue to support its commitments in the traditional theaters of Europe and Northeast Asia, but it also must be able to project power quickly and effectively to areas where it presently has little or no forward-deployed capability. US power projection requirements demand US forces capable of rapid insertion into areas in which US interests are threatened, by forcible entry if necessary. We must, therefore, improve the rapid response capabilities of those air and ground forces not normally forward deployed. Further, the need to reinforce and sustain forward deployed forces requires special emphasis on improved mobility resources and clear US maritime superiority. The threat posed to vital SLOCs by Soviet naval and long-range air forces must be met through the increased capabilities of our own and allied naval and air forces.

The following chapter will make clear the discrepancies between US strategic requirements and existing capabilities in both the overall US-Soviet military balance and in the regions of most significant US interest. The regional balances must be viewed in the context of actual and potential allied strength on both sides and the need for equitable burden sharing by the US and its allies.

## CHAPTER II: THE MILITARY BALANCE

### INTRODUCTION

The balance in strategic and general purpose forces is fundamental to US and allied security. Adverse trends in either of these categories lessens assurance that aggression against Western interests can be deterred, or defeated if necessary, and increases the risks of coercion and intimidation short of armed conflict.

For more than two decades the Soviet Union has pursued the steady expansion and modernization of its military forces. In addition, the Soviets have strengthened other Warsaw Pact forces and equipped Soviet clients and surrogates outside Europe as well. The failure of the US and its allies to keep pace has resulted in a growing imbalance in strategic and general purpose force capabilities.

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 provide useful comparisons of capabilities, but cannot reflect the interaction of forces in war. Whenever possible, static force comparisons should be complemented by dynamic analyses that attempt to incorporate some of the complexities and variables of actual combat.

### US AND SOVIET DEFENSE EXPENDITURES

Because military capability depends to a great degree on the level of resources devoted to producing it, comparisons of US and Soviet defense expenditures provide a rough, but useful, measure of the US-Soviet military balance. In addition, trends in relative defense spending, especially those of the past decade, provide an indication of the required level of future US defense efforts. Comparisons of military investment — that portion of spending allocated to weapons system procurement; facility construction; and research, development, and test and evaluation (RDT&E) — are of special importance because a prolonged disparity in military investment leads eventually to disparities in fielded military capabilities.

#### Limitations

Comparisons of defense expenditures are based on estimates that are somewhat uncertain. Although US analysts have made significant progress in estimating what the Soviets devote to their military establishment, the quality of information varies greatly according to the

category of Soviet efforts considered. For example, estimates of Soviet personnel activities are more reliable than estimates for procurement or operations. Estimates on research and development tend to be the least reliable since they focus on less quantifiable measures of comparison. Differences in the priorities for defense resources in societies as dissimilar as the US and the USSR also affect the validity of military expenditure comparisons. The ruble defense spending figures published in Moscow are far below actual Soviet expenditures, but US estimates of Soviet spending in rubles do assist in understanding the resource allocation choices made by the Soviet leadership. Most comparisons, however, are made by estimating the value of Soviet defense activities in terms of dollars. Dollar estimates of Soviet activities tend to represent what it would cost for the US to develop and procure Soviet military equipment and operate it as the Soviets do.

### Comparisons Since 1970

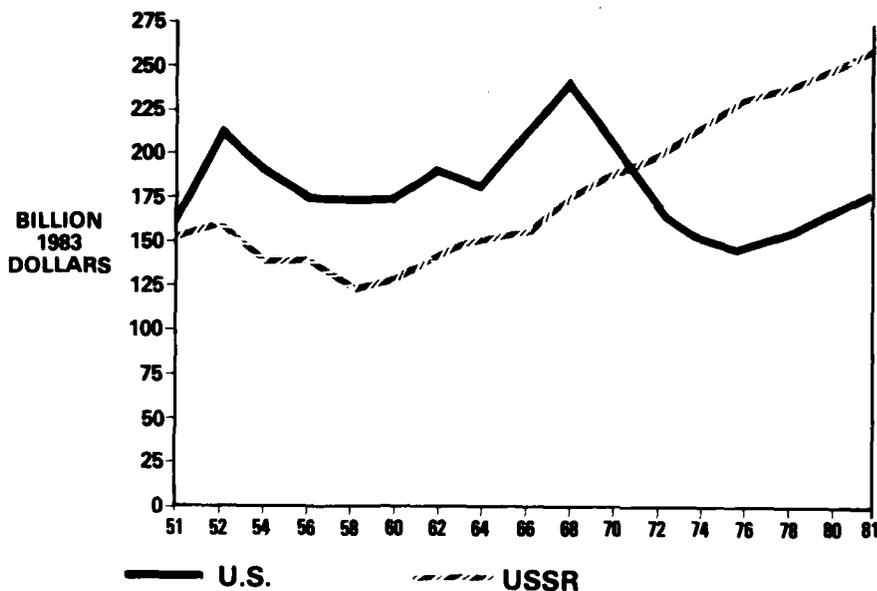
Prior to 1970, US defense expenditures exceeded those of the Soviets. During the period 1971-1981, however, the cumulative dollar cost of Soviet defense activities has exceeded that of the US by more than 40 percent. Chart II-1 shows that as the US was winding down spending related to Vietnam, the Soviets maintained a trend of steady real growth of about three percent per year. This Soviet trend began in 1959 and is expected to continue.

#### Mission Comparisons

Comparisons of US and Soviet efforts by mission category provide a rough indication of relative emphasis on similar military activities. For instance, the dollar cost for Soviet strategic offensive force activities was nearly twice that of the US during the 1971-1981 period (Chart II-2). Soviet emphasis on intercontinental ballistic missiles (ICBMs) is readily apparent, and despite US emphasis on submarine-launched ballistic missiles (SLBMs), the Soviets have led in that category as well. It is only in the long-range bomber component that US activity has exceeded Soviet efforts. During the 1970s, Soviet activity for strategic defensive purposes also outpaced that of the US.

Chart II-3 shows the distribution by major mission categories for the US and the USSR. Support costs (expenditures for operation and maintenance of military facilities, logistic activities, intelligence programs, and basic training for recruits) continue to receive the largest share of US spending; general purpose forces (GPF) receive the largest share of Soviet defense efforts. For

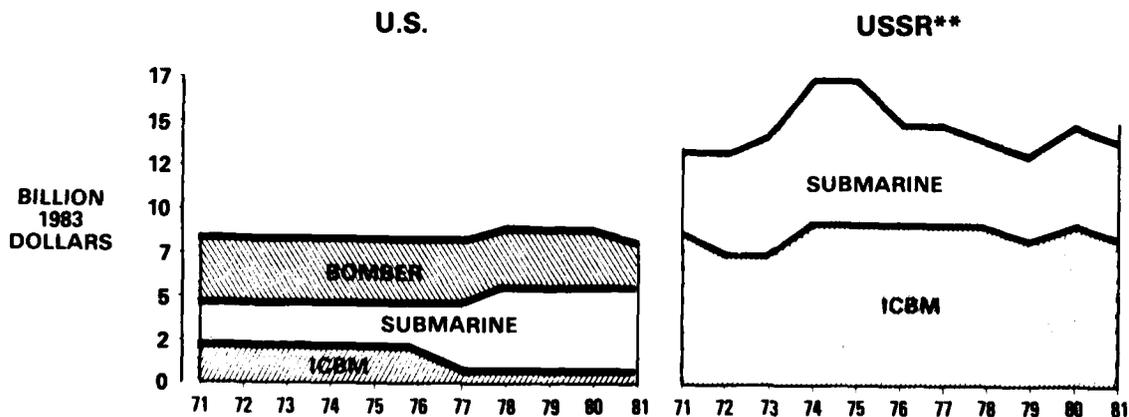
## U.S. AND SOVIET DEFENSE ACTIVITIES\*



\* U.S. OUTLAYS AND ESTIMATED DOLLAR COSTS OF SOVIET ACTIVITIES

CHART II - 1

## INTERCONTINENTAL ATTACK FORCES\*



\* U.S. OUTLAYS AND ESTIMATED DOLLAR COSTS OF SOVIET ACTIVITIES; DOES NOT INCLUDE RDT&E COSTS

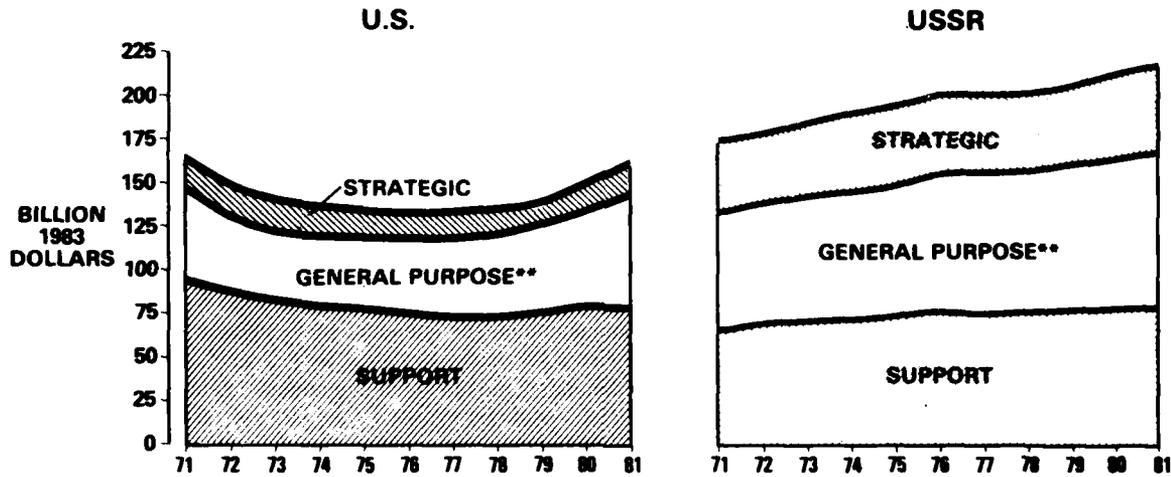
\*\* SOVIET BOMBER COSTS (EXCLUDING BACKFIRE) WERE MINIMAL FOR THE 1971-81 PERIOD

CHART II - 2

both nations, GPF receive a larger share of resources than strategic forces. Chart II-4 shows that Soviet GPF activities exceeded those of the US by almost 50 per cent during 1971-1981. While the US has devoted more

resources to mobility and tactical air forces, the Soviets have devoted more to naval forces and approximately three times as much to land forces.

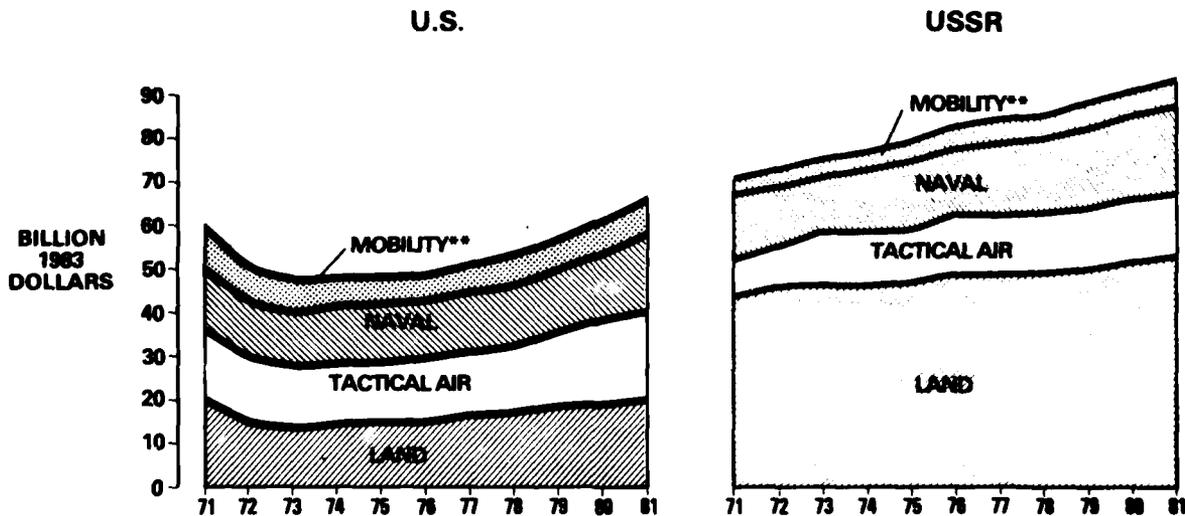
### MAJOR MISSIONS\*



\* U.S. OUTLAYS AND ESTIMATED DOLLAR COSTS OF SOVIET ACTIVITIES; DOES NOT INCLUDE RDT&E COSTS  
 \*\* GPF DATA DOES NOT INCLUDE MOBILITY COSTS FOR THE STRATEGIC AND SUPPORT MISSIONS

CHART II - 3

### GENERAL PURPOSE FORCES\*



\* U.S. OUTLAYS AND ESTIMATED DOLLAR COSTS OF SOVIET ACTIVITIES; DOES NOT INCLUDE RDT&E COSTS  
 \*\* INCLUDES COSTS FOR STRATEGIC, SUPPORT, AND GPF MISSIONS

CHART II - 4

### Functional Comparisons

A second way to view total spending comparisons is illustrated in Chart II-5, which shows how resources are distributed among major functional categories — operations (activities related to force expenditures and personnel costs) and investment (including RDT&E). While Soviet operational and investment activities both exceeded those of the US during the past decade, the Soviet investment advantage was especially large. By 1976, Soviet investment efforts were double the corresponding US efforts. Although the investment gap appears to be narrowing, Soviet investment activities still exceed those of the US by more than 70 percent. The differential between US and Soviet military investment is of special concern since investment spending has more of a cumulative effect. This effect is clearly evident in the Soviet Union, where, as a rule, older systems are not phased out as new systems are added to the inventory. Thus, the investment disparity has directly contributed to the current asymmetry in US and Soviet military capability. Considering the RDT&E portion of investment activities alone, US outlays during the past decade remained relatively constant whereas Soviet RDT&E costs more than doubled from 1971-1981. For the period as a whole, the estimated dollar costs of Soviet RDT&E activities were more than 50 percent larger than corresponding US outlays. This increasing effort in

RDT&E activities during the past decade has enabled the Soviets to offset long-standing US qualitative advantages in all mission categories.

### Effect of Allies

Evaluation of the overall defense investment balance should reflect the allied defense contributions for both sides. In general, NATO Allies add substantially to the Western effort, both in terms of general defense activity and investment. However, in evaluating contributions of US Allies to the military balance, two considerations should be noted. First, the preponderance of Allied spending is for general purpose forces; solution of the strategic force imbalance problem is thus largely a US responsibility. Second, largely because the forces and production capabilities of the Warsaw Pact nations are more highly standardized, spending by the US and its NATO Allies adds less to the common defense than an equal amount of spending by the Soviet Union and its allies adds to the Warsaw Pact. Under the assumption that allied investments are equally efficient for both NATO and the Warsaw Pact, Chart II-6 shows that in 1981 Pact investment efforts exceeded NATO efforts by about 20 percent. Owing to the less efficient nature of NATO spending, however, the investment gap between NATO and the Warsaw Pact is actually somewhat greater than portrayed in the chart.

## MILITARY RESOURCES\*

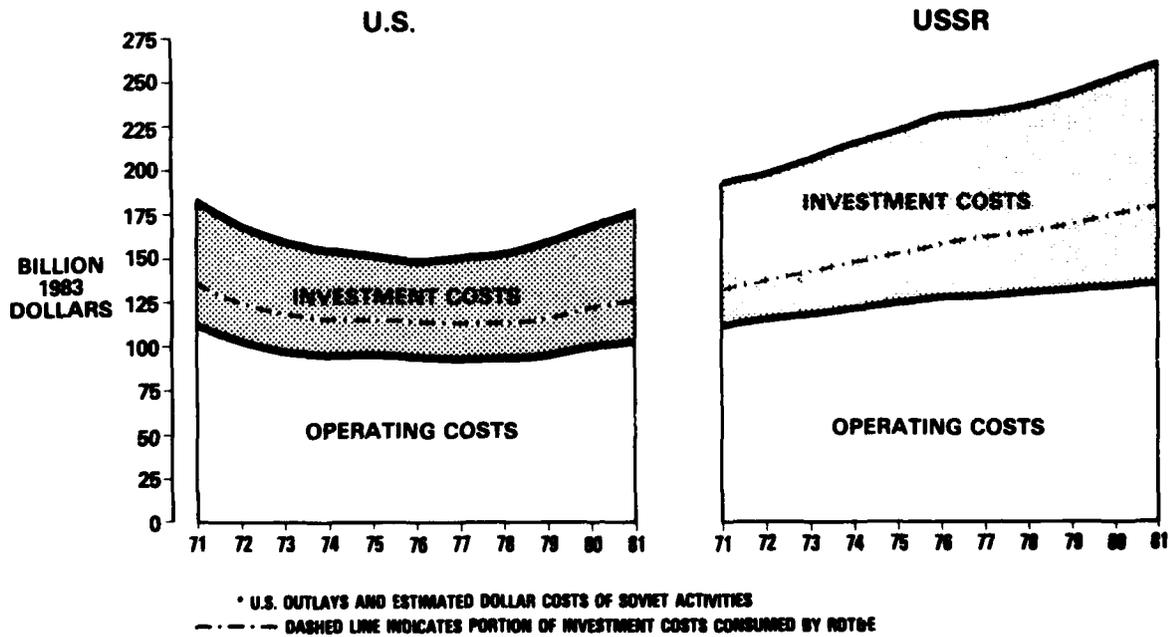
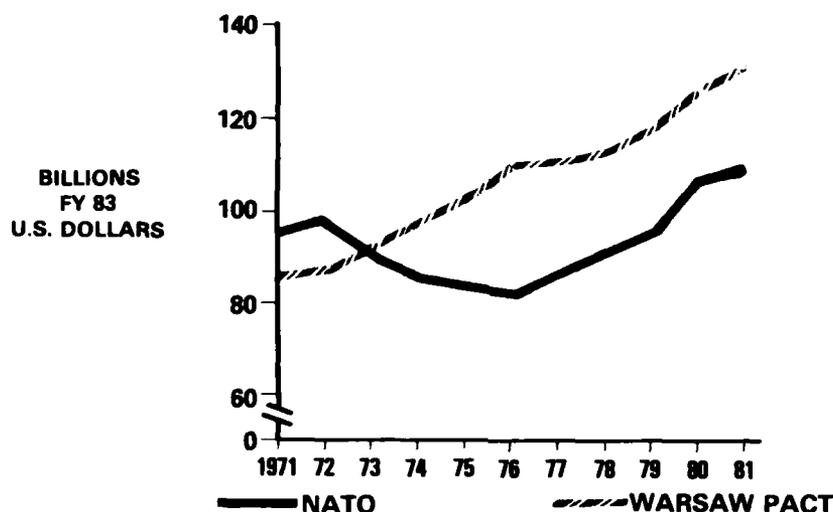


CHART II - 5

## NATO & WARSAW PACT MILITARY INVESTMENT\*



\* U.S. OUTLAYS, NON-U.S. NATO OUTLAYS CONVERTED TO DOLLARS, AND ESTIMATED DOLLAR COSTS OF SOVIET AND NON-SOVIET WARSAW PACT MILITARY PROGRAMS (INCLUDES RDT&E)

CHART II - 6

### Summary

The continuity in Soviet defense planning and momentum of Soviet defense production suggests that future trends in Soviet military expenditures are unlikely to deviate substantially from past trends. The degree to which Soviet leadership will continue to increase military investment at the expense of improving the quality of life for its people is unknown. In spite of economic difficulties, there are no indications that Soviet allocation priorities will change. Soviet military expenditures are expected to continue to increase at an annual rate of three to four percent, compared to five to seven percent for the US. Collectively, the West has the capability to meet the Soviet investment challenge and reverse these trends. The current imbalance in strategic, theater nuclear, and conventional forces reflects the urgency of a national commitment to meet the Soviet challenge.

### STRATEGIC FORCES

The prime objective of US strategic forces and supporting C<sup>3</sup> is deterrence of Soviet nuclear attack on the US and its allies. Deterrence depends on the assured capability and manifest will to inflict damage on the Soviet Union disproportionate to any goals that rational Soviet leaders might hope to achieve. Any US strategic retaliation must be controlled by and responsive to the NCA, tailored to the nature of the Soviet attack, focus-

ed on Soviet values, and inevitably effective. Assured strategic C<sup>3</sup> connectivity across the spectrum of conflict is essential for NCA control of US strategic forces.

### Strategic Offensive Forces

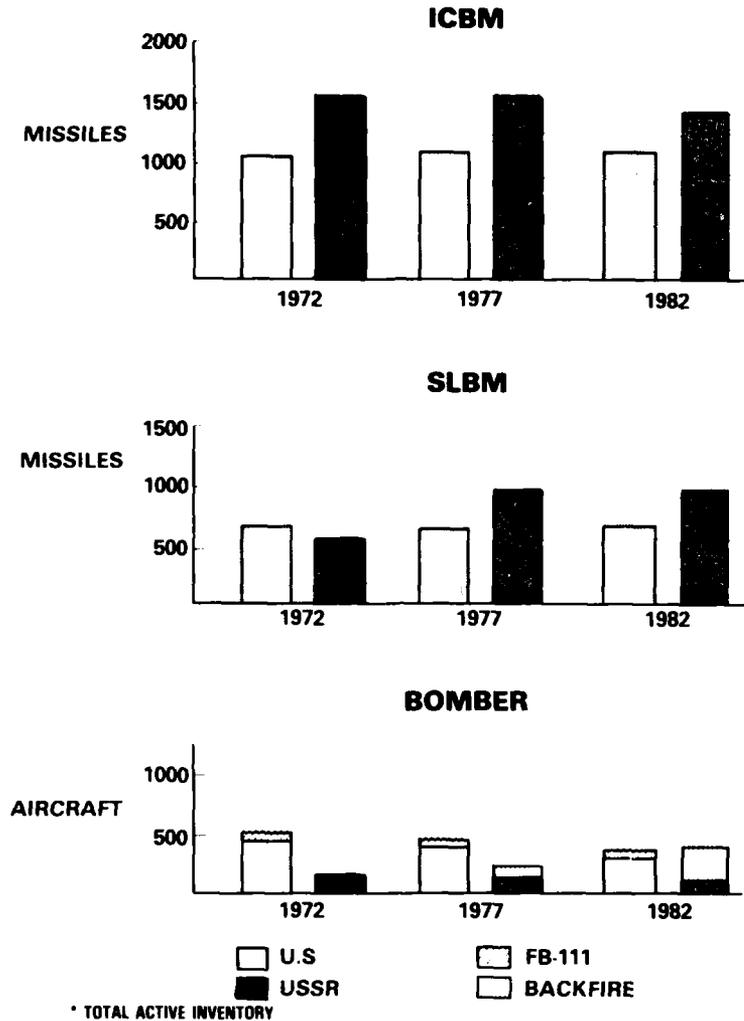
US strategic offensive forces consist of a TRIAD of ICBMs, SLBMs, and intercontinental manned bombers equipped with gravity weapons and air-launched missiles. The TRIAD of mutually supporting systems provides a mix of force characteristics for appropriate response to a number of possible Soviet attacks, complicates Soviet attack and defense planning, and insures the effectiveness of a US nuclear response.

Soviet intercontinental nuclear forces also consist of ICBMs, SLBMs, and manned bombers, but the Soviets currently place greatest emphasis on ICBMs. The Soviets have steadily increased the capability of these forces until they now exceed US forces in several measures of capability (Chart II-7 depicts the trends in numbers of US and Soviet long-range nuclear systems). The US no longer enjoys strategic nuclear superiority, and the overall effectiveness of our retaliatory capability has become increasingly uncertain.

### Sources of Deterrent Uncertainty

The increased uncertainty in the effectiveness of the US strategic deterrent has resulted from Soviet stra-

## LONG-RANGE NUCLEAR SYSTEMS\*



AS OF 1 JANUARY 1982

CHART II - 7

tegic force modernization and delays and deferrals of US modernization programs. Since the early 1960s, the Soviets have placed heavy sustained emphasis on improving strategic force capabilities. This emphasis corresponds to Soviet doctrinal writings, which assign little importance to the concept of deterrence and comparisons of balance such as are common in the West. Soviet doctrine talks instead of sufficiency to achieve objectives by the possession of credible warfighting capabilities. To gain strategic sufficiency, the Soviets have focused primarily on modernizing their ICBM forces by deployment of new systems and by block modifications to deployed systems. These initiatives have yielded more Soviet weapons per missile, greater throw-weight, improved C<sup>3</sup>, and improved weapon accuracy. As a

result of these improvements — and in line with Soviet doctrinal emphasis on mass and surprise — Soviet ICBMs are now capable of destroying time-urgent targets in an initial attack.

The Soviets are also continuing to strengthen the SLBM leg of their forces. The new TYPHOON-class submarine is undergoing initial sea trials and should soon join a fleet of DELTA- and YANKEE-class ships which already far outnumber US ballistic missile submarines. The TYPHOON-class submarine, which exceeds the US TRIDENT-class in size and may rival it in technology, should become fully operational in the mid-1980s. Like DELTA, TYPHOON will provide the Soviets with the same operational advances the US will make with TRI-

DENT — longer range SLBMs, expanded patrol areas, shorter travel distances to patrol stations, and the capability to launch against targets in the US from home waters.

For their bomber force, the Soviets have retained the BEAR and BISON while continuing to add BACKFIRE. Although apparently designed primarily for peripheral missions, BACKFIRE has sufficient range to attack the US by employing either aerial refueling or post-strike recovery in the Western Hemisphere. Long-range air-to-surface missiles (ASMs) have been deployed, and a new bomber and a new tanker are projected for the 1980s.

For a variety of reasons, US strategic force modernization efforts have not kept pace with the steady improvement of Soviet capabilities. As noted in the previous section, overall US military expenditures have been relatively limited over the past decade, largely as a result of competing priorities for national resources. Of the US defense funding made available, less than 10 percent was devoted to strategic capabilities. Further, the US has chosen in some instances to delay force modernization in favor of increasing the readiness of existing forces. Modernization and readiness are both essential for a balanced defense program, which must provide an adequate deterrent now and in the future. US strategic force modernization has also been hampered by our tendency to delay or defer the fielding of new systems while pursuing the development of even more advanced capabilities. Waiting for these more advanced capabilities may help to lessen the risk of early obsolescence, but in the interim, deployed US systems tend to fall even farther behind in their ability to meet the existing threat. As a result of these factors, US strategic forces have been supported largely by capital investments made in the 1950s and 1960s. A sustained commitment over several years will be required to rectify this situation and reduce uncertainties in the US deterrent posture.

#### **Crucial Problem Areas**

Our primary concerns with the US TRIAD of strategic offensive forces are ICBM vulnerability and declining effectiveness against increasingly hard Soviet targets, SLBM limitations against hard targets, and decreasing ability of US manned bombers to penetrate Soviet defenses. A fourth concern, which affects all elements of the TRIAD, is the problem of assured C<sup>3</sup> connectivity between the NCA and the strategic nuclear forces. (C<sup>3</sup> connectivity is addressed below after discussion of TRIAD problem areas and modernization efforts.)

Today, ICBM vulnerability is the most serious problem facing any one leg of the US strategic TRIAD. Over the past two decades, the Soviet Union has introduced

four generations of ICBMs as well as multiple independently targetable reentry vehicles (MIRVs) on many of its newer ICBMs. As a result, the Soviet ICBM force has evolved from a few missiles with multi-megaton warheads and limited accuracy to a very large force possessing sufficient accuracy and warhead yield to menace the US ICBM force in an initial attack. Analyses project that a Soviet strike against US missile fields could destroy a major portion of the US ICBM force if the US chooses to ride out the attack before responding. However, the Soviets would still have to contend with the US SLBM force — secure and survivable at sea — and the manned bombers that had been launched for survival at the first confirmed warning of attack.

The SLBM force possesses the highest survivability and best endurance of the US TRIAD, and thus contributes greatly to crisis stability and maintenance of a strategic reserve. Currently deployed SLBMs are effective against economic and soft military targets, but the combination of accuracy and warhead yield is such that the existing SLBM capability against hardened targets is limited. In addition, there is some uncertainty concerning required communications connectivity in a wartime environment between the NCA and ships submerged in distant ocean patrol areas.

Bombers are the most flexible component of the TRIAD. With man continuously in control from takeoff to weapon release, bombers can respond to direction after launch — including recall and target changes — and attack both hard and soft targets with gravity bombs or stand-off air-to-surface missiles. The bomber force, along with other land- and sea-based aircraft, compels the Soviets to spend massively for air defense and thus it diverts funds from other military investments. By the late 1980s, however, increasingly dense and sophisticated Soviet air defenses, if not confronted with modernized US capabilities, will decrease the probability of bomber weapons reaching their targets. Soviet air defense interceptors are projected to be equipped with an improved look-down/shoot-down capability against low altitude penetrators the size of B-52s.

#### **US Strategic Force Modernization**

In recognition of deficiencies in US strategic capabilities and of their underlying causes, the US has embarked on a program of strategic force modernization. The program has five segments, three of which directly concern elements of the TRIAD. The remaining segments concern C<sup>3</sup> connectivity and strategic defense, which will be addressed in following sections. The limitations of current US strategic forces did not evolve overnight; neither will their solutions.

The deployment of 100 MX missiles — each with at least ten reentry vehicles (RVs) — will address the problem of ICBM vulnerability as well as increase the number and accuracy of ICBM weapons. At least 40 of these missiles will be deployed in MINUTEMAN silos, with initial operational capability scheduled for 1986. In the meantime, an aggressive research and development program is pursuing survivable, long-term basing modes. A decision on one or more permanent, highly survivable basing modes is expected in Fiscal Year (FY) 1983.

Modernization of the sea-based missile force includes the TRIDENT nuclear-powered ballistic missile submarine (SSBN) program and development of an advanced SLBM, the TRIDENT II (D-5). The D-5 missile will equip the 24 launch tubes of each TRIDENT submarine, providing some increase in range and — more importantly — greater payload and accuracy for increased capability against the full spectrum of targets. The TRIDENT D-5 will be available in late 1989. In addition, nuclear-armed sea-launched cruise missiles (SLCMs) will be deployed on attack submarines beginning in FY 1984. Although SLCM-equipped attack submarines will have a primary sea control/antisubmarine mission, they will contribute to the strategic reserve capabilities.

A variant of the B-1 bomber will become operational in 1986, with a force of 100 aircraft scheduled to be in place by in the late 1980s. The new B-1B will have a much smaller radar signature than the B-52, thus enhancing bomber penetrativity well into the 1990s. In addition, an advanced technology bomber (ATB) is programmed to supplement the B-1B beginning in the early 1990s. If the threat dictates, the ATB could assume the bulk of the penetration role while the B-1, equipped with air-launched cruise missiles (ALCM), performs the stand-off mission.

Some important quantitative effects of US TRIAD modernization are shown in Charts II-8 through II-10. Chart II-8 uses four standard measures of capability to display trends in pre-attack (or static) force potential. Charts II-9 and II-10 use the same four measures to depict the results of dynamic analyses. These dynamic analyses are based on simulated strategic force exchanges that attempt to model real-world operational considerations. US forces used in both the static and dynamic comparisons reflect the current US program of strategic force initiatives. Soviet force data are derived from the latest intelligence projections.

Chart II-8 shows that static force trends favoring the Soviet Union will be arrested or even reversed in the mid-to-late 1980s, assuming the Soviets do not deploy forces in excess of projected levels. The US advantage in total weapons count will continue to decline until

1985, but then stabilize slightly above parity. Estimated growth in Soviet weapons will be offset by deployments of the TRIDENT SSBN, ALCM, MX, and B-1B. The chart also shows that the US will soon lose its slight advantage in hard-target kill potential, a measure of bomber and missile counter-force capabilities, but that the trend will move back toward parity as the US deploys ALCM, MX, and the TRIDENT D-5 SLBM. US deployments will also reverse the trend in equivalent megatonnage, but continuing Soviet emphasis on relatively large warheads will insure a Soviet advantage through the early 1990s. During the same period, the Soviets will continue to enjoy a significant advantage in time-urgent hard-target kill potential, chiefly a result of the increasing accuracy of their modern ICBMs. The trend should reverse sharply by the late 1980s as the US deploys the highly accurate MX and TRIDENT D-5 missiles.

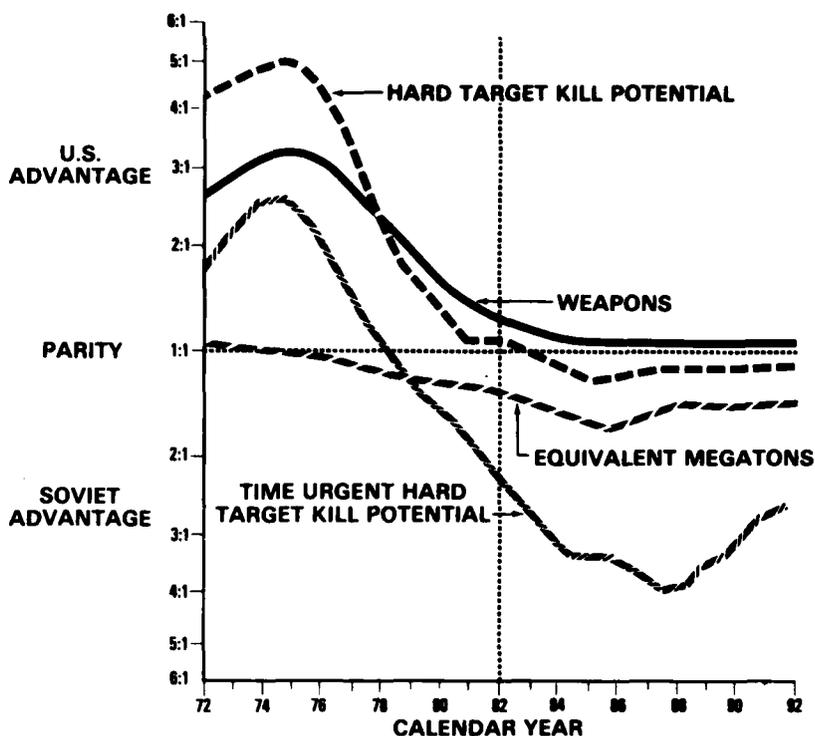
Trends in static or pre-launch force potential, such as shown in Chart II-8, are useful tools for describing the balance of US and Soviet forces. However, only the more sophisticated dynamic methods are capable of introducing into force comparisons such critical real-world considerations as estimated force performance, target systems, and attack strategies. The dynamic simulations, results of which are shown in Charts II-9 and II-10, involved military judgment and thus accommodated many subjective inputs that would pertain to an operational environment. Although such dynamic methods are useful for indicating the degree of uncertainty faced by force planners, they cannot predict the course or outcome of an actual force exchange. Because of the assumptions involved, the results do not indicate absolute capabilities for each side, but rather trends in relative capabilities.

Charts II-9 and II-10 display the computed outcomes of strategic force exchanges in which the Soviets first attack the US target system and the US retaliates in kind. Results are shown for 1987 and 1991, after the US modernization program has begun to have a major effect on the strategic balance. For the analyses depicted in Chart II-9, the forces on each side were assumed to be in a normal, day-to-day alert posture at the start of the Soviet attack. For the analyses of Chart II-10, all forces were assumed to be in a fully generated posture.

In each exchange, targeting approaches for each side were assumed to be the same: attacking all of the opponent's ICBM silos with nuclear weapons and then, using weapons not allocated to that task, inflicting moderate damage on a specified percentage of the remainder of the opponent's target system. The damage goals set in this analysis for US and Soviet targets are different,

## STRATEGIC FORCES\*

### PRE - ATTACK STATIC RATIO COMPARISON



\* TOTAL ACTIVE INVENTORY WITHOUT BACKFIRE

CHART II - 8

but attempt to reflect intended objectives for each side. In addition, the target data bases used in the analysis reflect differences between the US and Soviet target systems in numbers of key targets and vulnerability to nuclear effects.

It was also assumed that the conflict leading to the strategic nuclear exchange did not attrite any strategic delivery systems, the Anti-Ballistic Missile Treaty remained in effect, and the opposing sides employed only nuclear weapons in the homeland-to-homeland exchanges. Additionally, C<sup>3</sup> connectivity was assumed for both sides, meaning that all surviving forces received and executed a launch order. This was an important assumption because US strategic C<sup>3</sup> systems would probably be degraded in the initial Soviet attack.

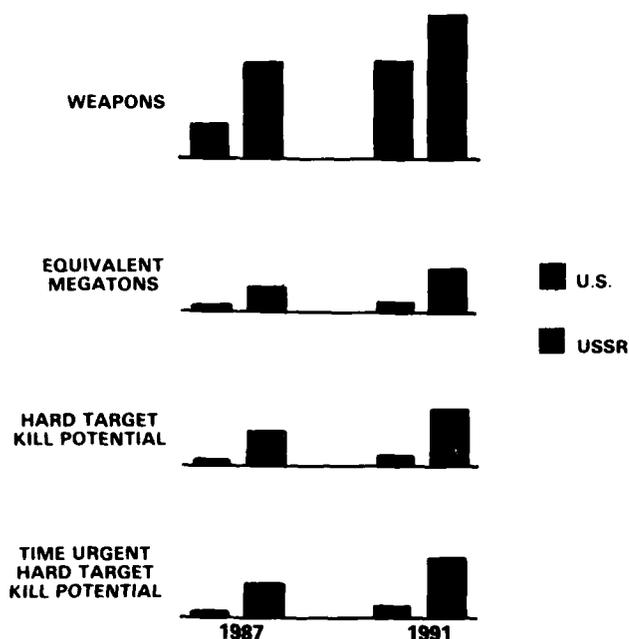
The measurements presented in Charts II-9 and II-10 portray the qualities of the respective remaining forces after the damage has been done to opposing weapons and the required forces have been expended against designated targets. Chart II-9 shows that while both sides would have residual capabilities, the Soviets

would have an advantage in 1987 and 1991, should they initiate an attack with both sides in a day-to-day alert posture and the US choose to ride out the Soviet attack before retaliating. The relative improvement in computed US post-exchange capabilities is a result of the current US strategic force modernization program.

Chart II-10 displays the computed outcomes of exchanges initiated after full generation of US and Soviet forces; again, it is assumed that the Soviets strike first and the US elects to ride out the Soviet attack before retaliating. Unlike the day-to-day alert attack outcomes, which favor the USSR, the generated attack outcomes show much more balanced post-exchange capabilities.

As noted above, Charts II-9 and II-10 both display the results of exchanges in which the US chooses to ride out a Soviet first strike before retaliating. In both cases, the relative US post-exchange posture would be considerably improved if the US were to launch under attack (LUA). Although the US has no policy that assumes or requires launch under attack, the availability of the LUA

## STRATEGIC FORCES\* POST EXCHANGE RESIDUALS (DAY TO DAY ALERT)



BARS INDICATE RESIDUALS IF U.S. RIDES OUT ATTACK BEFORE RETALIATING  
\* ON-LINE INVENTORY WITHOUT BACKFIRE

CHART II - 9

option is important; because it leaves the Soviets uncertain about how we might respond to an attack.

Finally, it should be noted that the residuals displayed in Charts II-9 and II-10 do not imply an excess capability for either the US or Soviet strategic forces. The actual effectiveness of the post-exchange forces must be considered in view of opposing defenses, responsiveness to targeting requirements, unexpectedly poor system performance, and secure reserve force requirements. Allowance must also be made for possible target base growth and additional hardening (not assumed except for nuclear forces).

The foregoing analyses, although limited in several respects, provide additional evidence that the US must achieve the programmed modernization of TRIAD forces. US strategic force modernization will not have its full impact on the US-Soviet balance until late in this decade, but the adverse trends can be arrested and reversed with the sustained commitment of resources to TRIAD improvement. Sustained US modernization is essential if the US is to respond effectively to a continu-

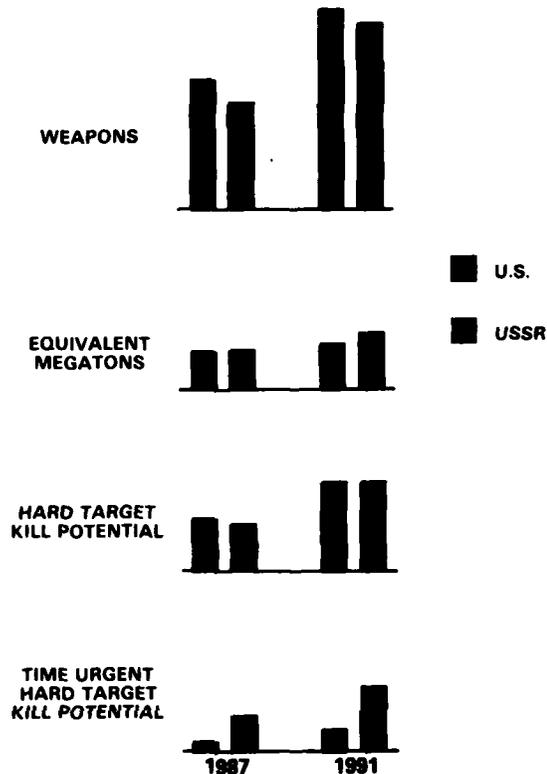
ing Soviet force buildup while at the same time inducing the Soviets to move toward equitable and verifiable strategic arms control agreements. To insure the effectiveness of the US deterrent, it is also essential that the offensive force improvements be accompanied by the programmed modernization of US strategic C<sup>3</sup> and strategic defensive capabilities.

### Strategic C<sup>3</sup> Connectivity

Strategic connectivity encompasses C<sup>3</sup> systems that link the NCA and commanders of unified and specified commands to forces in the field. To insure a credible deterrent posture, strategic connectivity must be assured during all phases of a nuclear exchange. In such a conflict, C<sup>3</sup> systems will likely be subjected to power outages, jamming, EMP, atmospheric disruption, and physical destruction. Thus force execution, escalation control, and post-strike reconstitution hinge on survivable and enduring C<sup>3</sup> capabilities.

C<sup>3</sup> improvement has a high priority within the new strategic modernization program. The program includes

## STRATEGIC FORCES\* POST EXCHANGE RESIDUALS (GENERATED ALERT)



BARS INDICATE RESIDUALS IF U.S. RIDES OUT ATTACK BEFORE RETALIATING  
\* ON-LINE INVENTORY WITHOUT BACKFIRE

CHART II - 10

numerous measures for improving the timeliness and clarity of assured tactical warning and attack assessment, and for enhancing communications connectivity from the NCA to the strategic forces. C<sup>3</sup> improvements include enhanced satellite communications; EMP hardening of bombers, C<sup>3</sup> aircraft, and aircraft which relay communications to the SSBNs; and an extremely low frequency system to enable SSBNs to maintain continuous communications while operating submerged at greater depth and speed. To avoid possible confusion and delay, these improvements must be managed as an integrated system rather than on a piecemeal basis.

### Strategic Defense

Strategic defensive capabilities contribute to deterrence in ways frequently overlooked. These capabilities include active defenses such as interceptor aircraft, sur-

face-to-air-missiles (SAMs), and ballistic missile defense (BMD) systems; and passive defenses such as surveillance and warning systems, hardening, electronic countermeasures (ECM), and civil defense. All of these capabilities contribute to denying an adversary confidence that he can fully achieve his objectives. This point is not lost on the Soviets, who have deployed more than 7,000 air defense radars, 2,500 interceptors, some 10,000 SAM launchers, and 32 ABM launchers and have devised the most comprehensive civil defense program in the world. By contrast, the US deploys fewer than 120 ground and Airborne Warning and Control System (AWACS) air defense radars, no SAMs for defense of the Continental US (CONUS), and less than 300 interceptors (most of 1950s vintage). Moreover, the US has had no BMD capability since 1976, when the single SAFEGUARD site was phased out, and currently has a very limited civil defense capability.

The fifth aspect of the US strategic modernization program addresses the major deficiencies in strategic defense. One of the most critical of these deficiencies is the lack of adequate air defense. The existing Distant Early Warning (DEW) line and US coastal radars do not provide sufficient all-altitude surveillance coverage for CONUS defense against airbreathing threats. And as noted above, the small US interceptor force is obsolete. Programmed initiatives to improve long-range surveillance for tactical warning of atmospheric attack include modern microwave radars for the DEW line and over-the-horizon-backscatter (OTH-B) radars looking east, west, and south. At least six additional AWACS aircraft will be procured to provide survivable surveillance and command and control for air defense for North America. In addition, five squadrons of F-15 interceptors are programmed to begin replacement of the 1958-vintage F-106.

The strategic modernization program also provides for a US space defense capability as well as the vigorous pursuit of research and development (R&D) on BMD. Currently, the US has no counterpart to the operational Soviet antisatellite (ASAT) interceptor. A US ASAT system would serve to deter Soviet use of ASAT or, if necessary, neutralize satellites that support Soviet wartime objectives. Current R&D programs for BMD are being conducted as a hedge against Soviet treaty abrogation or unconstrained offensive threat growth, and as a potential active defense for US ICBMs. BMD is one of the three major options being considered for long-term enhancement of MX survivability.

The US/Soviet imbalance in passive civil defense is striking. The Soviets are investing more than \$2 billion annually in civil defense and employing about 115,000 personnel to manage and exercise the program. A sheltering program exists for government personnel and 11 percent of the urban population. Almost half of the shelter spaces are for essential workers. The balance of the Soviet population is supported by a program for evacuation. The US currently has no civil defense program comparable in scope, structure, or performance to the existing Soviet effort. The US civil defense program is centered on state and local governments and by statute is a dual-use effort in which the same measures serve natural disaster relief and nuclear attack preparedness. In the past, the US has allocated funding for planning of crisis relocation for selected risk areas, but there are currently no provisions for supporting a dispersed population or protecting war-supporting industry and its labor force.

## Conclusion

The steady modernization of Soviet strategic offensive and defensive capabilities has continued for more

than two decades. This trend, coupled with the failure of US modernization efforts to keep pace, has resulted in the loss of US strategic nuclear superiority and increased uncertainty in US capabilities to deter both nuclear and nonnuclear conflict. The relative decline in US strategic and theater nuclear capabilities has reduced the ability of the US to deter or control lower level conflicts by the threat of nuclear escalation. To enhance the deterrence of both nonnuclear and nuclear conflict, the US must modernize the strategic TRIAD and associated C<sup>3</sup> systems and upgrade homeland defense capabilities. A sustained commitment is required to correct asymmetries in the strategic balance and create a more stable and secure deterrent.

## THEATER NUCLEAR FORCES

The US must possess a broad spectrum of nuclear force options for deterrence of aggression and defense of its interests. Strategic forces provide for many of these options, but other nuclear forces are also required. Theater nuclear forces (TNF) consist of systems for battlefield support; land-based medium and long-range employment; land-based defense; and naval anti-surface ship, anti-air, antisubmarine, and strike warfare.

TNF have recently become the subject of arms control negotiations with the Soviet Union. To support these negotiations and possible Strategic Arms Reduction Talks (START), nuclear forces are now being grouped into the following categories:

- Strategic forces
- Intermediate-range nuclear forces, (INF) which include:
  - Longer-range INF missiles (between 1,800km and 5,500km)
  - Shorter-range INF missiles (1,800km down to short-range nuclear forces)
  - Nuclear capable aircraft (aircraft with less than an intercontinental capability)
- Short-range nuclear forces (SNF), which consist of missiles, rockets, and artillery capable of striking only those targets in the general region of the battlefield.

The current US/Soviet arms control negotiations are emphasizing reductions on longer-range INF missiles — the Soviet SS-4, SS-5, and SS-20 ballistic missiles and the US PERSHING II ballistic missile and ground-launched cruise missile (GLCM). As US and Allied positions evolve, the intermediate-range and short-range nuclear forces designations will likely supplant the

theater nuclear forces designations. Because the transition to the new categories is still in progress, the theater nuclear forces designations are used for the most part in this section and elsewhere in the document. The new designations are used in a few selective cases.

### **Objectives of Theater Nuclear Forces**

TNF are designed for use in conjunction with conventional forces to deter conventional, theater nuclear, and chemical attack. Coupling conventional forces to strategic forces, TNF contribute to deterrence by creating uncertainty for the aggressor concerning US and allied responses. TNF also strengthen deterrence by denying the enemy sanctuary behind the immediate battle zone and providing a capability to break up the momentum of a massive offensive. TNF may be used in the event of enemy first use of nuclear weapons or in the event of significant failure of the conventional defense. They also could have utility in retaliation against the enemy's initiation of widespread chemical warfare if US chemical retaliation is ineffective or not available. TNF must be sized and structured to provide a range of responses which will enable the US and its allies to force the aggressor to reassess his objectives in the face of increasing risks of escalation, thereby contributing to the achievement of US and allied objectives.

### **Theater Nuclear Balance**

The US and the USSR, together with their Allies, deploy a variety of land-based theater nuclear systems in Europe. US and Allied TNF contribute to deterrence of Warsaw Pact aggression by providing the capability to support NATO's strategy of flexible response, which is based on a triad of conventional, theater nuclear, and strategic nuclear forces. The TNF balance in Europe, however, has shifted away from NATO. The Soviet Union continues to expand and modernize its TNF in Europe, while US and Allied deployments have decreased from more than 7,000 warheads in FY 1981 to less than 6,000 today.

Soviet TNF modernization has continued during the past year with deployment of long-range SS-20 missiles and new short- and medium-range systems. The SS-20, with three MIRVs per missile and significant improvements in survivability, mobility, responsiveness, and accuracy, is a far more capable weapon than the older SS-4 and SS-5 missiles. As shown in Map II-1, the SS-20 can cover the entire European theater and provide significant coverage of other areas. The worldwide balance in long-range TNF (longer-range INF) missiles is shown in Chart II-11.

NATO nuclear initiatives have not kept pace with Soviet modernization efforts. NATO currently has no land-

based, long-range missiles comparable to SS-4, SS-5, and SS-20 systems. Since the long-range TNF (LRTNF) modernization decision of December 1979, NATO has been planning the deployment of a mix of GLCMs and PERSHING II ballistic missiles; these systems are compared to Soviet missiles in Chart II-12. With increased capabilities and better survivability, the new NATO systems will begin to redress the imbalance in Europe and help deter the use of Soviet long-range systems and other capabilities. These systems, however, will not enter service until late 1983 and will not be fully operational until after the middle of the decade.

The Warsaw Pact also has a growing capability in medium-range TNF (shorter-range INF) missiles based in Europe (Chart II-13). Continuing Soviet deployment of the modern SS-22 missile and development of the SS-X-23 provide the Warsaw Pact with increased firepower and a greater range of options for theater nuclear conflict. The Pershing IA missile provides NATO with its only medium-range missile capability.

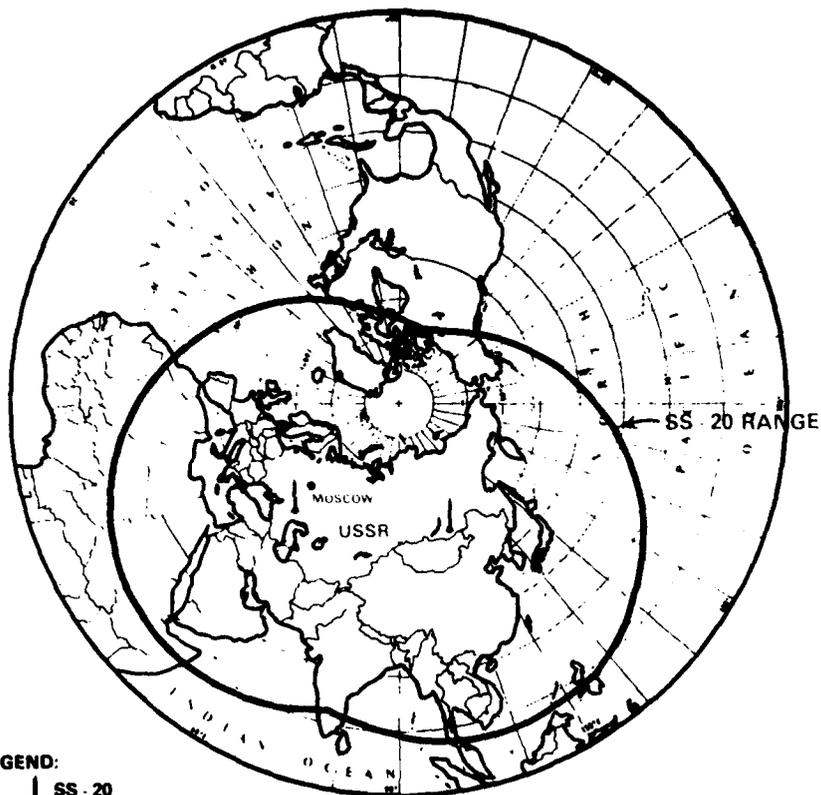
The European balance in land-based nuclear capable aircraft continues to favor the Warsaw Pact. NATO capabilities, however, are gradually being enhanced by deployment of the US F-16 fighter and the British/German/Italian TORNADO fighter-bomber.

NATO continues to hold an advantage in numbers of short-range TNF systems deployed in Europe. The Soviets, however, are introducing nuclear artillery and have essentially doubled the Warsaw Pact's short-range TNF capability since 1970. The US short-range TNF capability against massed armor will be increased substantially with the introduction of enhanced radiation (ER) warheads for LANCE missiles and nuclear-capable artillery. There are no plans at this time to deploy these weapons outside US territory. The United States will consult with its Allies in advance of any decision to deploy ER warheads to Western Europe.

As the foregoing comparisons have shown, the Warsaw Pact holds an overall advantage in TNF deployed in Europe. To meet the challenge posed by the modernization of Warsaw Pact TNF, NATO must maintain the momentum of current plans and programs to modernize its TNF, especially the longer-range missile systems, as the US pursues arms control negotiations with the Soviet Union.

The TNF balance outside of Europe is also adverse. The US deploys theater nuclear weapons with land-based forces at forward locations and with naval forces afloat, but faces a growing threat from SS-20 missiles based in the USSR and from increasingly capable Soviet naval TNF. The Soviet Navy is equipped with a full spectrum of modern air, surface, and subsurface nu-

## SS - 20 COVERAGE FROM SOVIET BASES



MAP II - 1

## NATO - WARSAW PACT LONG - RANGE TNF (LONGER - RANGE INF) MISSILES LAND - BASED SYSTEMS - WORLDWIDE

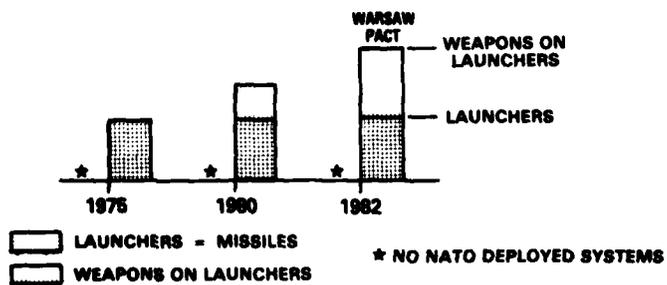


CHART II - 11

## LONG RANGE TNF (LONGER-RANGE INF) MISSILES

	USSR			U.S.	
					
	SS - 4	SS - 5	SS - 20	PERSHING II	GLCM
WARHEADS	1	1	3 MIRV	1	1
RANGE (KM)	2,000	4,100	5,000	1,800	2,500
OPERATIONAL FLIGHT TIME	MINUTES	MINUTES	MINUTES	MINUTES	HOURS
OPERATIONAL MODE	FIXED	FIXED	MOBILE	MOBILE	MOBILE
GLOBAL NUMBERS DEPLOYED (DECEMBER 1981)	300	35	200+	0	0
YEAR OPERATIONAL	1960	1961	1977	1963	1963

AS OF 1 JANUARY 1982

CHART II - 12

## NATO — WARSAW PACT MEDIUM - RANGE TNF (SHORTER - RANGE INF) MISSILES LAND - BASED SYSTEMS — EUROPE

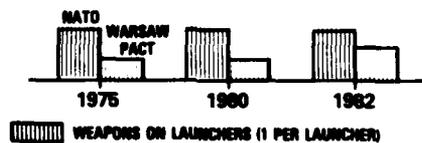


CHART II - 13

clear weapons. In contrast, US maritime TNF are fewer and aging rapidly. US initiatives in maritime nuclear forces include the deployment of TOMAHAWK Land-Attack Missile-Nuclear (TLAM-N), beginning in FY 1984; development of a new surface-to-air missile for fleet air defense; and research and development for a new nuclear antisubmarine warfare weapon.

The Soviet TNF threat in non-NATO areas requires an adequate US capability for deterrence or, if necessary, a military response to Soviet aggression. The US has reviewed force levels and system requirements in an effort to achieve a TNF posture that will correct existing imbalances and provide credible, flexible responses, particularly at the lower levels of nuclear warfare. Such a

posture will provide timely and accurate nuclear options for reinforcing deterrence outside the NATO area.

## CONVENTIONAL FORCES

US and allied conventional forces are maintained to defend vital interests, deter aggression, and promote stability. These are the most likely forces to be employed in actual conflict and thus bear much of the responsibility for deterring aggression. Loss of US strategic nuclear superiority and the growing Soviet advantage in theater nuclear forces have further increased the deterrent responsibilities of US and allied conventional forces.

Conventional warfighting capabilities of the Soviet Union and its supporting coalitions have been increasing quantitatively and improving qualitatively much faster than those of US and allied forces. The Soviets are now fielding weapon systems as capable as, or in several categories superior to, US systems. The Soviet Union and its allies are increasing their long-standing advantages in Europe and Southwest Asia, and are shifting the balance against the US and its allies in East Asia and the Pacific. These adverse trends impair the US and allied ability to maintain a credible deterrent and, consequently, threaten stability worldwide.

### Balance In Europe

The conventional force balance in Europe continues to shift toward the Soviet Union and its Warsaw Pact allies. Although the US and other NATO countries have improved their capabilities, the ability of the Alliance to field defensive systems has not kept pace with the growth of Warsaw Pact offensive capabilities. The most important factor in the Pact's progress has been the improved quality of combat equipment, supplied primarily by the Soviet Union. The enhanced ability of Pact personnel to employ their equipment, made possible by improvements in leadership, organization, and training, has also been important. The Warsaw Pact has long held a numerical advantage over the Alliance and is now intent on removing NATO's long-standing qualitative advantages.

The static force comparisons discussed below clearly indicate that the Warsaw Pact will maintain a numerical advantage over NATO in many categories. This advantage alone, however, does not imply that the Pact could confidently expect to succeed in a conventional attack on Western Europe. NATO's strategy of flexible response does not require that NATO forces match Warsaw Pact forces in all respects. Advantages that accrue to NATO as the defender would help offset the superiority of attacking forces. Although relative force levels are important, a full assessment of the balance must ad-

dress differences in strategy, doctrine, tactics, readiness, and other factors not accounted for in static analyses.

Static comparisons are displayed in Charts II-14 to II-27. Except where noted, these charts cover worldwide inventories and thus include equipment located out-of-theater as well as in Europe. Since these are worldwide charts, they must be interpreted with certain qualifications. NATO trends, for example, include data on French forces, which although not integrated into NATO's military structure, form a significant part of Western Europe's defenses. The trends also reflect US and USSR forces that could be employed in a simultaneous conflict in Southwest Asia and forces that would remain deployed in the Pacific and elsewhere. Warsaw Pact totals include Soviet forces deployed opposite China (approximately 25 percent of Soviet ground and tactical air forces); significant drawdown of these out-of-area Soviet forces to reinforce the Warsaw Pact in Europe is considered unlikely as long as China remains hostile to the Soviet Union. Although the worldwide charts include assets that might not be committed to a war in Europe, they serve to indicate the forces that both sides could draw upon for reinforcement of forces deployed in Europe.

As Charts II-14 through II-21 show, trends in ground forces equipment are highly adverse for NATO. Warsaw Pact advantages continue to grow with the introduction of new tanks, self-propelled artillery, amphibious armored infantry combat vehicles, and modern air defense missile systems. For example, the Warsaw Pact currently has a 3 to 1 advantage in tanks and is expected to widen the margin despite deployment of several new NATO tanks, including the advanced M60A3 and the newer M1, now being received by the US Army (USA). The Pact has exceeded NATO's modernization program by wider deployment of T-64 and T-72 tanks within their forces, introducing a small number of T-72s in armies of their allies, and continuing development of a new tank, designated the T-80. The Pact's advantages in tank battles could be even greater than this quantitative margin implies since the Soviets have incorporated increasingly effective fire control and armor into their tanks. The imbalance in antiarmor weapons also continues to widen. This disparity is exacerbated by a new generation of more accurate tube-launched antitank guided missiles with greater range and penetrativity. Since NATO will not field as many antitank weapons as the Pact has tanks, it must rely heavily on the contribution of close air support (CAS) aircraft and helicopters to defeat the enemy's armor. Significantly, a rapid increase in the Pact's assault helicopters will overturn one of NATO's few numerical advantages by the mid-1980s. Weapon



systems such as the Mi-8/HIP E and Mi-24/HIND helicopters have considerably increased the Pact's ground assault capability, providing a source of responsive CAS unavailable in the past.

The disparity in artillery and multiple rocket launchers (MRL), antiaircraft artillery (AAA), and surface-to-air missile launchers also weighs heavily in the Warsaw Pact's favor. The Pact's artillery/MRL advantage will likely increase through the end of the decade. To some degree, Pact numerical advantages in artillery are offset by US technological superiority. However, until NATO forces are equipped and trained to employ such technically superior weapons as rocket-assisted projectiles, independent submunitions (to include scatterable mines), and laser designation and automated fire control systems, this potential advantage cannot be realized.

The growth in Warsaw Pact SAM systems has provided the Warsaw Pact a significant advantage in air defense capabilities. The SA-4 medium-to-high-altitude system (employed at both Front and Army levels); the SA-6, SA-8, and SA-11 low-to-medium-altitude systems (employed at division level); and the SA-9 and SA-13 low-altitude systems (fielded in conjunction with the ZSU-23-4 AAA system at regiment level) provide the Pact an impressive mobile, all-weather air defense capability. Warsaw Pact advantages in anti-air capabilities are shown in Charts II-18 through II-21, which com-

pare one side's aircraft to the other's air defense capabilities. The extensive air defense network of the Warsaw Pact has allowed the Soviets to divert some frontal aviation aircraft from air defense to ground attack roles.

The air balance between NATO and the Warsaw Pact must be viewed in the context of the alliances' differing requirements for tactical air. NATO places heavy reliance on CAS to partially offset the large ground force firepower imbalance. In contrast, the Warsaw Pact, with its heavy emphasis on armor and artillery in a combined arms offensive, has relied less on CAS for success, although its CAS capabilities are increasing.

Charts II-22 and II-23 provide two perspectives on the air balance worldwide. Read horizontally, the charts display the relative strength of interceptor and offensive aircraft; read vertically, they provide head-to-head comparisons of offensive strength and opposing interceptors. Offensive forces include interdiction, CAS, and long-range bomber aircraft. The charts also reflect the Soviet penchant for defensive air power. More than 60 percent of the Warsaw Pact fighter force is currently allocated to defensive counterair missions.

In addition to its numerical advantages, the Warsaw Pact has made significant qualitative improvements in conventional airpower capabilities. Extensive modern-

## ARTILLERY AND MULTIPLE ROCKET LAUNCHERS

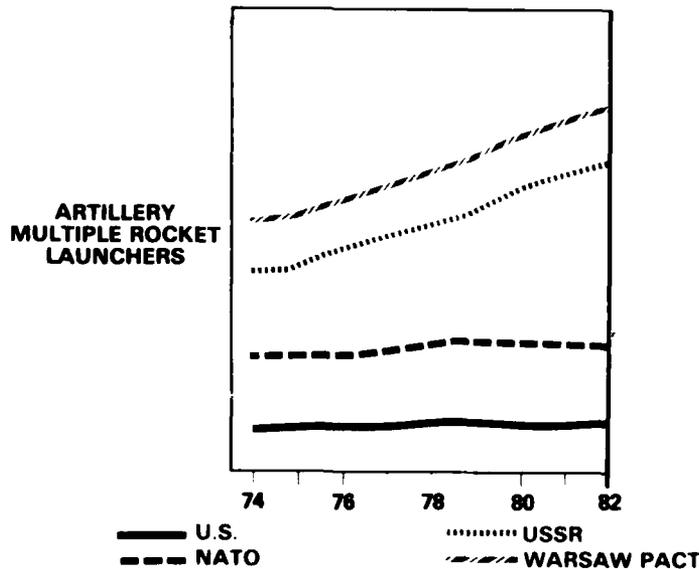


CHART II - 16

## ANTIAIRCRAFT ARTILLERY

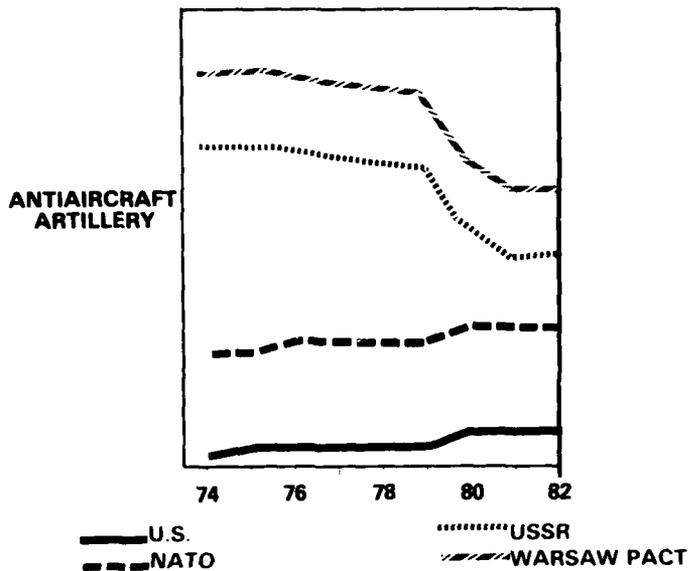


CHART II - 17

## COMBAT AIRCRAFT VERSUS SAM INVENTORIES EUROPE - UNREINFORCED - 1982

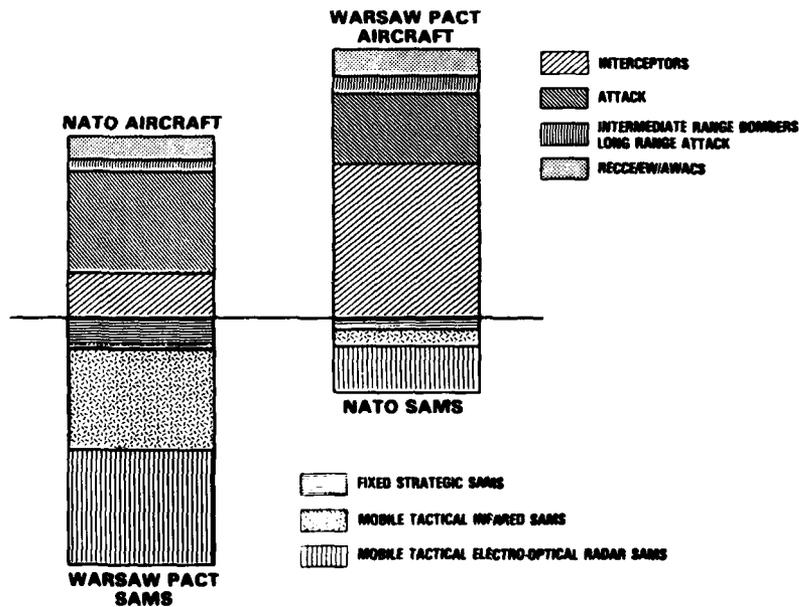
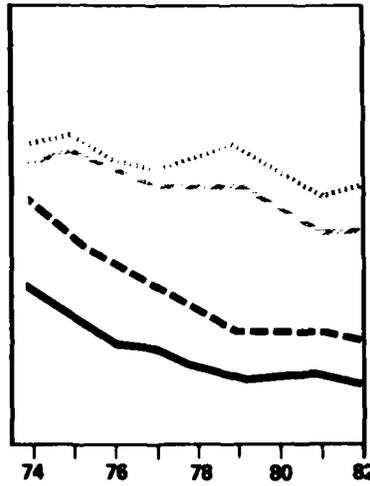


CHART II - 18

## OFFENSIVE AIRCRAFT VS TACTICAL SAM TEL

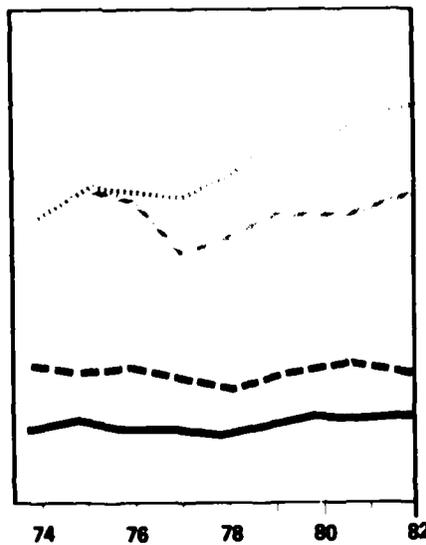


U.S. AIRCRAFT/USSR SAM       USSR AIRCRAFT/U.S. SAM  
 NATO AIRCRAFT/WARSAW PACT SAM       WARSAW PACT/NATO SAM

AS OF 15 JUNE 1981

CHART II - 19

## ATTACK AIRCRAFT AND HELICOPTERS VS MANPACKED SAM

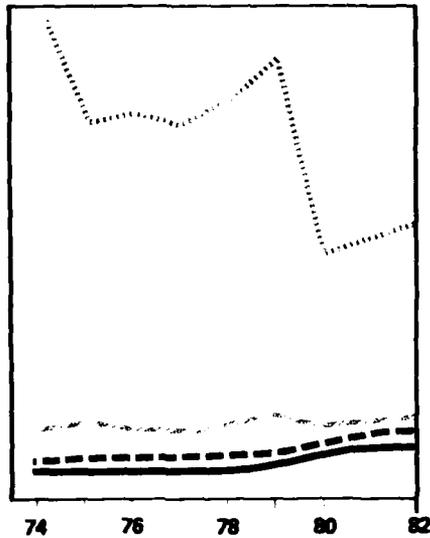


U.S. AIRCRAFT / USSR MANPACKED SAM       USSR AIRCRAFT / U.S. MANPACKED SAM  
 NATO AIRCRAFT / WARSAW PACT MANPACKED SAM       WARSAW PACT AIRCRAFT / NATO MANPACKED SAM

AS OF 15 JUNE 1981

CHART II - 20

## ATTACK AIRCRAFT AND HELICOPTERS VS ANTIAIRCRAFT ARTILLERY

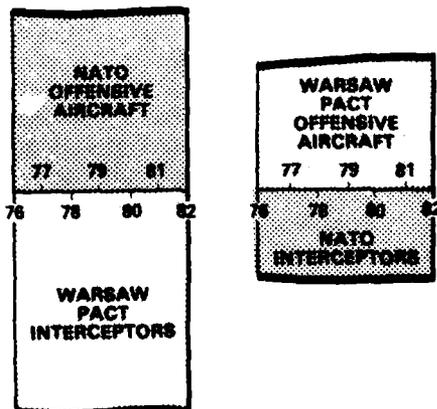


— U.S. AIRCRAFT / USSR ANTI-AIRCRAFT ARTILLERY  
 - - - NATO AIRCRAFT / WARSAW PACT ANTI-AIRCRAFT ARTILLERY  
 ..... USSR AIRCRAFT / U.S. ANTI-AIRCRAFT ARTILLERY  
 - / - WARSAW PACT AIRCRAFT / NATO ANTI-AIRCRAFT ARTILLERY

AS OF 15 JUNE 1981

CHART II - 21

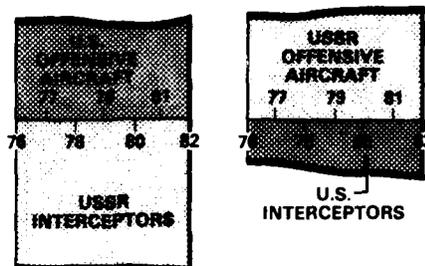
## NATO vs WARSAW PACT (AIRCRAFT)



AS OF 15 JUNE 1981

CHART II - 22

## U.S. vs USSR (AIRCRAFT)



AS OF 15 JUNE 1981

CHART II - 23

ization during the 1970s greatly enhanced Soviet air defense and air-to-ground capabilities. First-line Soviet aircraft, with increasingly sophisticated avionics and weaponry, are now demonstrating advanced tactics. Significant improvements have been made in aircraft speed, range, and munitions. Soviet air forces deployed to forward areas are becoming a modern attack force capable of providing responsive CAS to Warsaw Pact ground forces. Through the mid-1980s, however, the current generation of US/NATO tactical aircraft will retain qualitative superiority in both air-to-air and air-to-ground capabilities.

The Warsaw Pact also holds advantages over NATO in other areas such as chemical warfare, electronic warfare, and C<sup>3</sup>. In the CW area, the Warsaw Pact is continuing to upgrade its capabilities to conduct offensive CW operations. Coordinated training by Pact countries has emphasized operations and force survival on contaminated battlefields. Occasional use of lethal chemicals during large-scale exercises has added realism and confirms a high state of readiness. Although non-Soviet Warsaw Pact forces are not as proficient as Soviet forces in CW operations, their proficiency is improving rapidly. NATO capabilities, in comparison, may be insufficient for deterring Pact first use of chemical weapons or for terminating CW at the lowest level of use.

In the EW area, Soviet emphasis on radio electronic combat (REC) gives the Warsaw Pact an increasingly integrated capability to disrupt NATO's C<sup>3</sup> nets, degrade air defenses, and use radar-directed air defense to counter NATO air forces. The Soviets have made a strong commitment to REC by massive hardware de-

ployment; the Warsaw Pact has modern equipment jamming battalions and many REC-dedicated jamming aircraft opposing NATO. US and NATO EW capabilities have not kept pace with the threat. It is essential that NATO equip its forces with EW systems to counter Soviet REC capabilities.

While a direct comparison of US/NATO and Soviet/Warsaw Pact C<sup>3</sup> systems would be difficult, there is one aspect which should not be overlooked in force comparisons — the basic differences in the member relationships within the two alliances. The Soviets dictate C<sup>3</sup> system standards for the Warsaw Pact while NATO C<sup>3</sup> system standards are developed through compromise between competing systems. Currently, NATO C<sup>3</sup> systems are far from standard, giving the Warsaw Pact clear advantages in command and control of operational forces. To combat this problem, NATO has undertaken a number of initiatives, designed to provide interoperable, jam-resistant, and survivable C<sup>3</sup> capabilities. The Airborne Warning and Control System represents a significant improvement for air battle management in the 1980s. The AWACS' long-range/low-altitude coverage provides a force multiplier for countering numerically superior Warsaw Pact aircraft in the coming decade. However, until the AWACS' capability is fully integrated into a standardized NATO C<sup>3</sup> system, its full potential will not be realized.

As in the case of land and air forces, trends in the balance at sea have increased the risk to NATO (Charts II-24 through II-27). Critical sea LOCs must remain open for the US to reinforce Europe and sustain its forces.



# MINE WARFARE SHIPS AND CRAFT

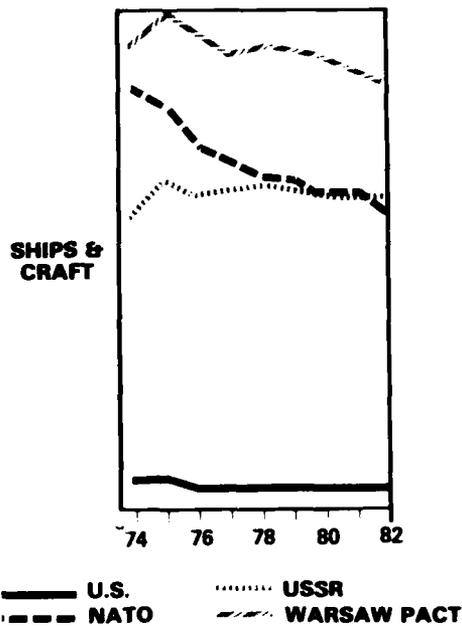


CHART II - 26

# AMPHIBIOUS SHIPS

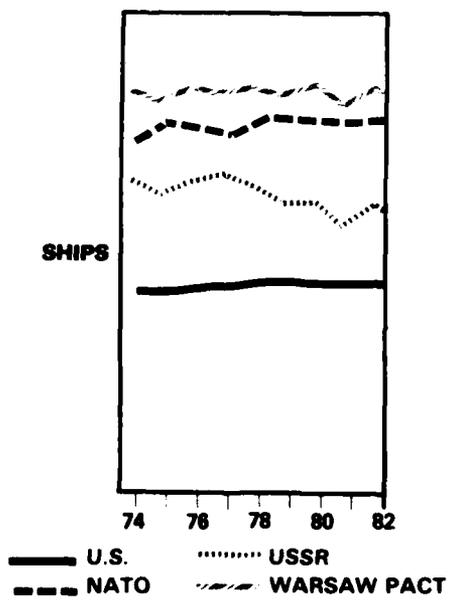


CHART II - 27

Yet the Warsaw Pact's ability to interdict NATO's SLOCs is increasing. Pact naval forces (predominantly Soviet), are equipped with a large number of general purpose submarines, land-based strike and anti-submarine warfare (ASW) aircraft, and sophisticated modern surface units carrying fixed or rotary wing aircraft. NATO's naval forces are improving through modernization, but are not assured of gaining and maintaining sea control. To insure the integrity of the Atlantic SLOCs, the Soviet surface and submarine fleets must be bottled up north of the Greenland-Iceland-United Kingdom (GIUK) gap. However, the US carrier battle groups necessary for this task are not available without a draw-down elsewhere. In the area of mine warfare, NATO must have the capability to sweep deep-laid Soviet mines to preserve its SLOCs and reinforcement ports. Overall, significant shortages in assets and the inability to conduct sustained combat operations degrades the capability of NATO's naval forces to support the land battle and concurrently maintain continuous SLOC protection. US naval forces, together with those of the Allies, must be capable of performing the operations necessary to protect NATO's SLOCs and carry the battle to the enemy.

The foregoing static comparisons offer some insight into respective capabilities of NATO and the Warsaw Pact forces if engaged in a European war. Dynamic wargaming analyses add another dimension for evaluating NATO's capability to defend against a Warsaw Pact invasion. These analyses introduce an active opponent and the element of time, and thereby permit consideration of variables such as mobility, command and control, terrain, and tactics. Even dynamic analysis has limitations, however; it cannot incorporate such imponderables as leadership or morale and it is particularly dependent upon the choice of scenarios, assumptions, and judgment.

The results of recent dynamic assessments support the unfavorable trends depicted in the foregoing static comparisons of NATO and Warsaw Pact military capabilities. In addition, the dynamic assessments show that the success of the Alliance in a conventional conflict in Europe will be affected by the time available for mobilization, the survivability of external reinforcements, and the availability of sufficient munitions and other consumables. Static and dynamic analyses both underscore the need for NATO to improve its capability to deter conventional attack.

#### **Conclusion**

The conventional military balance in Europe has shifted in favor of the Warsaw Pact over the last decade. A growing accumulation of deficiencies is degrading the Alliance's ability to maintain a credible deterrent. Under-

funding has delayed NATO's modernization efforts and severely limited resources required to support readiness and sustainability. The current disparity in military power in Europe can only be reduced by strong US leadership, coupled with increased US and Allied defense investment to obtain the military capabilities required to execute NATO's strategy successfully.

#### **US and Soviet Capabilities in Southwest Asia**

Free world access to Arabian Gulf oil is vulnerable to internal upheavals, regional conflict, and external threats. The US is vitally concerned with maintaining this access, and is continuing efforts to increase its influence with friendly regional states and improve capabilities for projecting military power to the area.

US diplomatic and military activities in the region support a strategy of deterrence against a full range of threats. Numerous actions are underway to bolster regional states and encourage their cooperation with the US to improve the military balance in the area. The presence of US Navy forces in the Indian Ocean; Army, Marine, and Air Force deployments; deployments of E-3A AWACS aircraft to Egypt and Saudi Arabia; and combined exercises in Southwest Asia are examples of such efforts. The growing capability of the Rapid Deployment Joint Task Force is also an essential element of the overall US deterrent strategy.

#### **Soviet Capabilities**

Although the least likely threat to US interests in Southwest Asia, a full-scale Soviet invasion of Iran would be the most demanding threat and potentially the most damaging to US interests. Continued internal instability or disintegration of governmental control in Iran, or a serious local conflict between Iran and one of its neighbors, might provide a pretext for Soviet military intervention.

While Soviet forces available for military actions in Southwest Asia are considerable, the threat must be considered in perspective. A Soviet invasion force would enjoy a numerical advantage in personnel and equipment; however, Soviet commanders would find it difficult to mass their forces. Iran is a big country with formidable terrain. Ground units and resupply would be moved predominantly by road over routes vulnerable to military action and natural impediments such as snow and floods. With limited frontages, long axes of attack, and the need to maintain security of the LOCs, Soviet forces could become strung out and separated. A large portion of the force would be absorbed in rear-area security, and mutual support between axes would be difficult; air defense would be scattered and spread thin. So-

viet aircraft would be operating without low-level ground-controlled intercept radar or fast-reaction interceptor aircraft coverage and, in later stages of the conflict, would operate from minimum-capability airfields in Iran. The appearance of overwhelming numbers of Soviet forces could be dissipated in the long defiles of the Zagros Mountains.

### **US Capabilities**

US ability to project military power to the Southwest Asia region and sustain the forces there is hampered by extremely long sea and air routes which place a high demand on US airlift and sealift capabilities; harsh environmental conditions; lack of a long haul communications site; lack of an established supporting infrastructure; and limited US basing, staging, and transit rights. Current elements of US strategy call not only for improved US military capabilities, but also increased allied support in Europe and Southwest Asia. Much progress has been made, and more is anticipated over the next three to five years based on current initiatives. Regional naval support facilities and access to facilities ashore for pre-positioning equipment and supplies have been increased. Initiatives afloat include the 13-ship Near-Term Pre-positioning Force (NTPF). By FY 1987, maritime pre-positioning ships containing equipment and supplies for three Marine Amphibious Brigades (MAB) will replace part of the NTPF, providing US forces with a dramatic increase in both sustainability and deployability. Pre-positioning initiatives ashore include plans for obtaining POL support from our allies and regional friends. Agreements are being sought with numerous countries for additional facilities that could increase enroute, overflight, and recovery access. Recent US airlift and sealift initiatives include plans to procure long-range, outsized cargo-capable aircraft, and purchase of eight SL-7 container ships. Each of these programs will significantly enhance US lift capabilities.

It must be made clear to the Soviets and US friends and allies that the US has the will and the capability to deploy a credible combat force rapidly and is fully committed to the defense of free world interests in Southwest Asia. This commitment requires combat forces capable of deterring regional threats. The RDJTF is a combat force designed to meet this requirement.

The RDJTF became a separate joint task force (an interim status pending its designation as a unified command) reporting to the NCA through the Joint Chiefs of Staff (JCS) in October 1981. The decision to establish a joint headquarters to plan, train, exercise, deploy, and employ forces signals US resolve to protect vital interests in Southwest Asia. Component headquarters and selected forces have been placed under the operational

control (or in support) of the Commander, RDJTF. Major forces currently available to the RDJTF for planning are shown in Chart II-28, but additional forces could be employed in Southwest Asia. Forces assigned to other commands, including some held in CONUS reserve, also may be made available for contingencies in the Southwest Asia theater.

The Army has made extraordinary efforts to train units allocated to the RDJTF and has undertaken actions to enhance combat service support capabilities to support the RDJTF in the austere environment of Southwest Asia. The Air Force has filled all key billets in RDJTF wings and reallocated war reserve spares kits to these units, insuring that they are prepared to deploy and fight promptly. Marine Corps units are in a high state of readiness, and the 7th MAB's equipment (aboard NTPF) is ready for immediate use. A significant portion of the naval forces that would support the RDJTF are already deployed in the Indian Ocean.

Although serious shortfalls remain in capabilities for deployment (mobility assets) and employment (sustainability) of forces, significant progress is being made in these areas. Recent budgetary decisions will improve vitally needed sealift and airlift capabilities. RDJTF C<sup>3</sup> capabilities will be improved in order to preclude diversion or drawdown of critical C<sup>3</sup> resources allocated for NATO forces. Operation plans for various contingencies are being prepared and will be complete by the time the RDJTF is designated a unified command.

### **Balance in East Asia and the Pacific**

The growing likelihood that a US/Soviet conflict would expand to global war causes increasing concern over the military balance in East Asia and the Pacific. One of the most demanding challenges facing the US in the 1980s will be to develop and demonstrate the capability to deter or defeat Soviet and other aggression against US vital interests in the region.

The US/Soviet military balance in East Asia and the Pacific is unfavorable and continues to deteriorate (Map II-2). US and allied forces have not kept pace in capability. While US ground and air forces in the Pacific have remained fairly constant, naval forces have suffered a decline over the past decade.

A number of other countries contribute, in varying degrees, to the regional military balance. Vietnam provides air and naval basing facilities to the Soviet Union and generally can be expected to support Soviet objectives. North Korea, while perhaps less closely tied to the Soviet Union, continues to pose a military threat to the Republic of Korea. China maintains a hostile stance to-

## FORCES ALLOCATED FOR PLANNING RAPID DEPLOYMENT JOINT TASK FORCE

<u>SERVICE</u>	<u>UNIT</u>
ARMY	HQ XVIII AIRBORNE CORPS 82d AIRBORNE DIVISION 101st AIRBORNE DIVISION (AIR ASSAULT) 24th INFANTRY DIVISION (MECH) 6th CAVALRY BRIGADE (AIR COMBAT) RANGER AND SPECIAL FORCES UNITS
AIR FORCE	2 BOMBER SQUADRONS 12 TACTICAL FIGHTER SQUADRONS 2 TACTICAL RECONNAISSANCE SQUADRONS 9 TACTICAL AIRLIFT SQUADRONS
NAVY	3 CARRIER BATTLE GROUPS 1 SURFACE ACTION GROUP 5 MARITIME PATROL SQUADRONS
MARINES	1 MARINE AMPHIBIOUS FORCE (MARINE AIR GROUND TASK FORCE) 7th MARINE AMPHIBIOUS BRIGADE (MAGTF/NTPF)

AS OF 1 JANUARY 1982

CHART II - 28

ward the Soviet Union and seeks closer ties with the US. The US has mutual defense arrangements with several nations in the region. While Asian allies generally support US objectives in Asia, diverse views of threats and different preferred solutions limit the military contributions by US allies to the overall regional balance.

US interests in the area are threatened by potential aggression from regional states. The principal area of concern remains the Korean Peninsula, where the forces of North and South Korea have faced each other over a four-kilometer-wide demilitarized zone for 28 years. To the south, Vietnam's occupation of Kampuchea threatens Thailand's security and is a potential cause for intervention by China.

### US-Soviet Military Balance

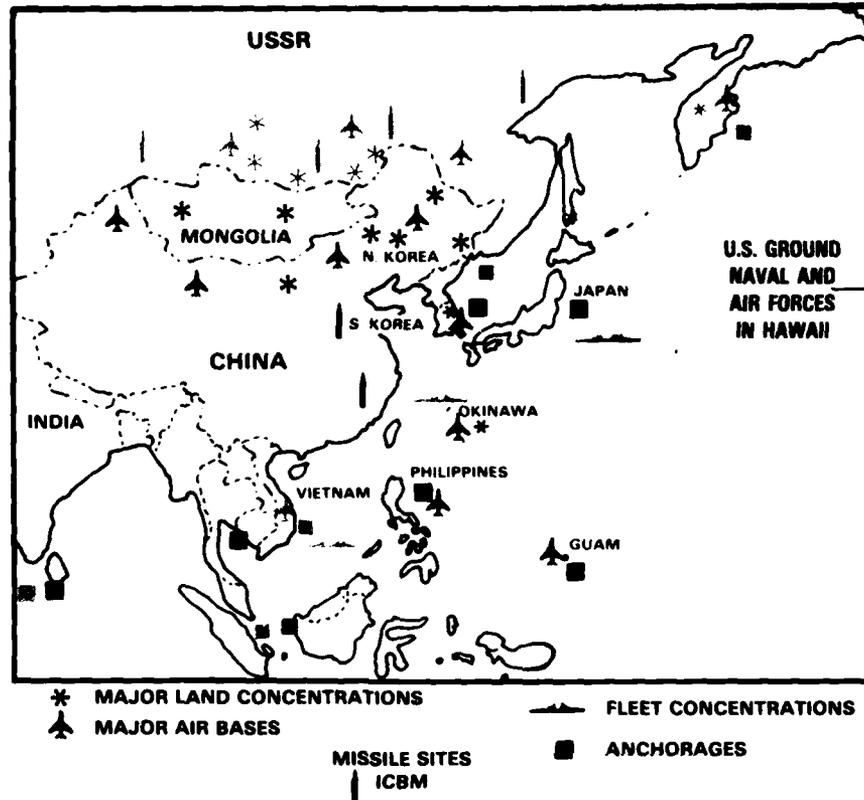
The Soviets have clearly recognized the importance of East Asia and the Pacific and have taken impressive steps to increase their presence and influence. Through an increase in naval capabilities over the past decade, the Soviet Pacific Fleet has become the largest of the four Soviet fleets, with more than 80 major surface combatants, over 70 submarines, and approximately 400 aircraft. With an increased naval presence in the Western Pacific and the Indian Ocean, the Soviets are well posi-

tioned to counter US naval forces or use these forces to support other political objectives. Soviet air forces in the Pacific now include the BACKFIRE bomber and latest fighters. With these forces, the Soviets are increasingly capable of interdicting air and sea lines of communication. Additionally, the Soviets have over 45 divisions deployed in the Far East against China and Japan. These forces have been modernized with new tanks, self-propelled artillery, helicopters, missiles, armored vehicles, and small arms.

Although the Soviets have large and powerful forces in the region, they also face significant limitations. In the event of war with the US, significant portions of these Soviet air and ground forces could be tied down by Chinese forces. Soviet forces deployed outside the Soviet Union would require long air and sea LOCs, which would be subject to interdiction. Additionally, Soviet distant power projection efforts would be complicated by limited overseas bases and support structure, coupled with a marginal long distance airlift capability.

US forces under the Commander in Chief, Pacific (CINCPAC), consist of approximately 315,000 personnel, the lowest force level in over 20 years. US Army

# MAJOR POWER BALANCE IN EAST ASIA AND THE PACIFIC



AS OF 1 JANUARY 1982

MAP II - 2

forces consist of a corps headquarters in Japan and two infantry divisions located in Hawaii and Korea. The infantry division in Korea serves as a visible example of the US commitment to the defense of the ROK.

US naval forces in the Pacific are composed of two fleets consisting of 6 aircraft carriers, 14 cruisers, 72 destroyers/frigates, 39 submarines, and 31 amphibious ships. Naval aviation forces consist of 6 carrier air wings and 12 maritime patrol squadrons. Two Marine Amphibious Forces located in Okinawa/Japan and California are also under the operational command of CINCPAC. The requirement to maintain a continuous and increased presence in the Indian Ocean has resulted in a draw-down of Pacific naval forces.

US Air Force units located in the Pacific consist of two numbered air forces comprising 9 tactical fighter squadrons (F-4/F-15/F-16), two tactical airlift squadrons (C-130), one bomber squadron (B-52D), one special operations squadron (MC-130E), and one AWACS squad-

ron (E-3A). Air Force units support forward deployed ground forces and conduct counterair operations in support of regional operation plans.

The general reduction of US Pacific force levels in conjunction with a significant increase in Soviet military capabilities may well encourage bolder Soviet moves. US forces in the Pacific no longer possess a margin of superiority and, in a worldwide conflict, may have to fight numerically superior Soviet forces. While recent budgetary initiatives have resulted in many new programs, current favorable funding trends must be continued and improvements made in the areas of sustainability, mobility assets, and C<sup>3</sup> systems.

### Regional Power Contributions

*China.* For the next decade, the People's Republic of China's (PRC) main adversary, the Soviet Union, will hold a commanding position over China in all aspects of ground, air, and naval power. However, improvements

to Chinese forces forecast for the 1980s will enhance Beijing's ability to deter a Soviet invasion, project forces into Southeast Asia border regions, and raise foreign perceptions of Chinese military capabilities.

*Japan.* Japan continues to be a vital partner in US strategy for Asia and the Pacific. Although linked to the US by the Mutual Defense Treaty, the Japanese government is constitutionally restricted from deploying Japanese Self Defense Force units (See Appendix A) outside of Japan and nearby waters in any capacity other than defense.

*ANZUS.* The ANZUS Treaty provides the basis for defense against external threats in the Southwest Pacific. While both Australia and New Zealand possess small armed forces (See Appendix A), these countries have historically taken active roles in maintaining free world security. The US should continue to center its security relationships in the Southwestern Pacific on ANZUS and work within the ANZUS agreement to support US objectives in Southeast Asia, Southwest Asia, Indian Ocean, and Arabian Gulf.

**The Balance in Korea**

For more than a decade, North Korea has modernized and expanded its armed forces. Although a large share

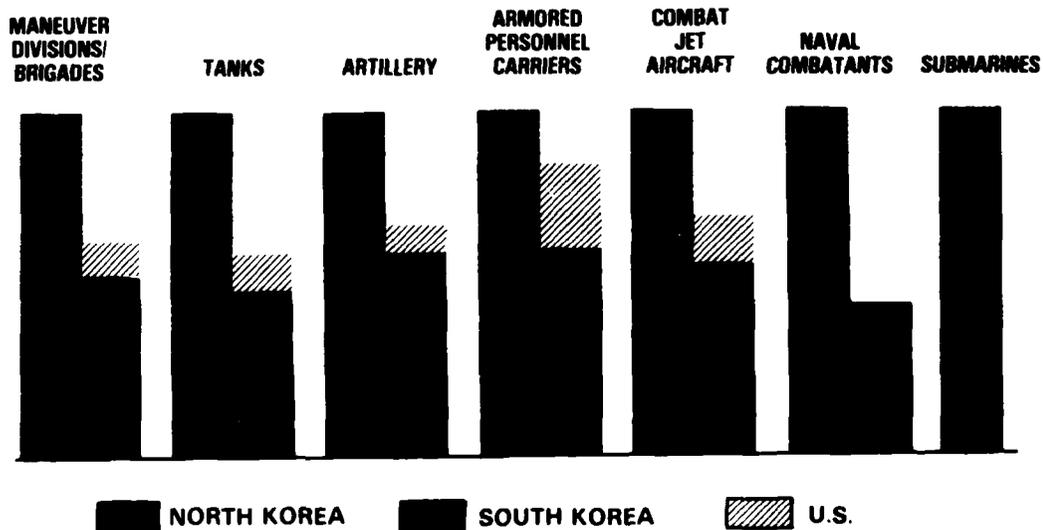
of the North Korean military investment has gone into defensive improvements, its capability for conducting large-scale conventional offensive operations has grown considerably. Thus, the ROK will face a formidable threat at least until the late 1980s.

As shown in Chart II-29, North Korean ground forces exceed those of the ROK in almost every significant aspect. The North Korean Army (NKA) has been increasing the mobility and mechanization of its infantry forces through the acquisition of trucks and armored vehicles, and upgrading its armored forces by adding medium, light, and amphibious tanks to its inventory. In addition, the North has improved the combat support for armor and infantry forces by producing increasing numbers of self-propelled artillery.

The North Korean Navy (NKN) has increased its overall competence while dramatically improving its offensive capabilities. Since 1971, the number of missile attack boats has increased by one-third, coastal patrol craft doubled, submarines more than tripled, and amphibious warfare craft more than quadrupled.

During the same time period, the North Korean Air Force (NKAFF) has improved its effectiveness, increased its aircraft inventory, and continued to expand and

**COMPARISON OF  
U.S. / SOUTH KOREAN FORCES  
AND  
NORTH KOREAN FORCES**



AS OF 1 JANUARY 1982

CHART II - 29

harden its airfields. The number of fighters and bombers has increased by about 20 percent, while transports and helicopters have almost tripled.

In addition to being larger than ROK forces, North Korean forces are continuously postured for attack. This posture is a primary cause of tension on the Korean Peninsula. Nearly half of North Korea's forces are positioned near the demilitarized zone (DMZ). With the remaining rear forces capable of moving forward rapidly, the North has the capability to strike into the South with little or no warning. Ground force structure and composition stress mobility, firepower, and shock action. Motorized and mechanized infantry forces are increasing, new tank battalions are appearing, and the river crossing capability of the North is significantly improving. The NKA has built the world's largest special purpose forces; these forces are capable of penetrating forward areas of the ROK and conducting rear area combat operations against key installations. Finally, the North Koreans are conducting extensive combined arms exercises which could significantly improve their warfighting effectiveness.

The missions of the ROK Army (ROKA) are defense of the country against attack and infiltration, and assistance in the maintenance of internal security. Except for certain equipment deficiencies, ROKA units are considered combat-ready. The ROK Navy (ROKN) is capable of performing its primary peacetime role of patrolling coastal waters, although it is hampered by the advanced age and inadequate speed of many of its ships and the small number of units available for patrolling its 1,500 nautical mile coastline. The ROKN would be at a tactical disadvantage against the NKN during wartime because of the NKN's sizable torpedo boat, missile attack boat, and submarine forces. The ROK Air Force (ROKAF) is a relatively modern, well trained force, with

jet combat aircraft comprising nearly three-fourths of its inventory. However, the ROKAF's main potential adversary, the NKAF, has a numerical advantage in fighter aircraft. With the acquisition of new aircraft, particularly the F-4D, F-4E, and F-5E, ROKAF capabilities to perform in the air-to-air role have steadily improved. Improved electronics and increased operational training will add to the ROKAF effectiveness.

The presence of US combat forces in Korea the past 31 years reflects the US commitment to defend the ROK. There are approximately 37,000 US forces assigned to South Korea. Although US forces are a deterrent to North Korean aggression, rapid augmentation of US forces will be critical should the North Koreans attack.

**Conclusion**

The US-Soviet military balance in East Asia and the Pacific is shifting in favor of the Soviet Union. As Soviet force modernization and deployments to the region have increased, US warfighting capabilities have slowly decreased. While efforts are underway to strengthen US forces, they will likely have to fight outnumbered in a protracted conventional conflict. US forces face a variety of threats throughout the region, but the area of greatest tension remains the Korean Peninsula, where North Korea maintains significant advantages over the South in nearly every measurable factor of combat strength.

**Maritime Balance**

During the past two decades, there has been a major shift in the US/Soviet naval balance. The dominant factor affecting that shift was the transition of the Soviet Navy from a basically coastal defense force to a worldwide naval power (Chart II-30). Today the Soviet Union is capable of pursuing a broad range of sophisticated sea-denial missions ranging from anticarrier operations

**TRENDS IN SOVIET MARITIME MISSIONS**

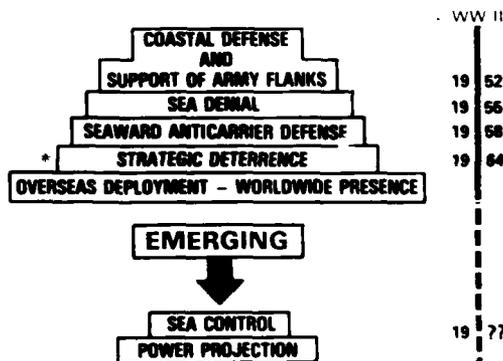


CHART II - 30

to interdiction of SLOCs. While the Soviet fleet has long had large forces for coastal defense, the continuing deployment of increasingly capable ships and submarines to the open oceans is a cause for concern.

The continuing construction of several classes of major surface combatant ships in large numbers provides the Soviets with the capability to use their fleet as an instrument for global influence. The Soviets have recently introduced several new classes of warships, including their first nuclear-powered surface combatant, the 27,900-ton guided missile cruiser KIROV. By the late 1980s, the Soviets will likely add at least one more of these large cruisers plus a large nuclear-powered aircraft carrier. Three additional new classes of destroyers or cruisers are under construction in Soviet shipyards with lead units of these classes on sea trials. The nature of Soviet surface combatants is changing, yielding a force of larger, more capable multi-mission ships. The average size of US principal surface combatants is also increasing (Chart II-31), however, and the US will retain an advantage in total displacement tonnage.

During the past decade, force levels of the US Navy have declined to the point where the Soviet Navy now has more than three times as many ships as the US Navy. However, part of the Soviet numerical advantage lies in their large numbers of support ships, patrol craft, and mine-warfare ships. Assuming attainment of current force program goals, the US will significantly reduce the Soviet advantage in principal surface combat-

ants (Chart II-32). US offensive capabilities will be significantly increased by reactivation of IOWA-class battleships as cruise missile platforms, introduction of TICONDEROGA-class cruisers, addition of two nuclear aircraft carriers, and the ongoing FFG-7 frigate program. These plans are essential to counter Soviet seapower and support US and allied operations.

Soviet general purpose submarine development continues with the introduction of OSCAR, the largest cruise missile submarine in the world, and ALFA, a titanium-hulled attack submarine of unexcelled speed and deep diving capabilities. Carrying cruise missiles with a range of over 450km, the nuclear-powered OSCAR represents a significant threat to US and allied surface forces. Although Soviet general purpose submarine forces are projected to decline as older, less capable diesel units are phased out, the Soviets will retain a significant quantitative advantage (Chart II-33). US attack submarines maintain overall technological superiority, which partially offsets the larger numbers of Soviet submarines and ASW forces, but Soviet advances in this area bear close monitoring.

Soviet amphibious lift capacity has grown during the past decade and should continue to expand. By the late 1980s, the Soviet Navy should be capable of transporting a force approaching one-half the size of the ground combat and combat support elements within a US Marine Amphibious Force. While the US possesses a substantial margin of superiority in this regard, both in

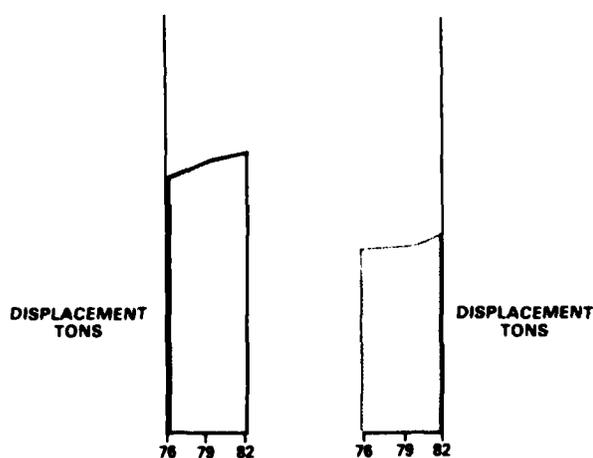
## PRINCIPAL SURFACE COMBATANTS

(LESS AIRCRAFT CARRIERS)

AVERAGE DISPLACEMENT

U.S. NAVY

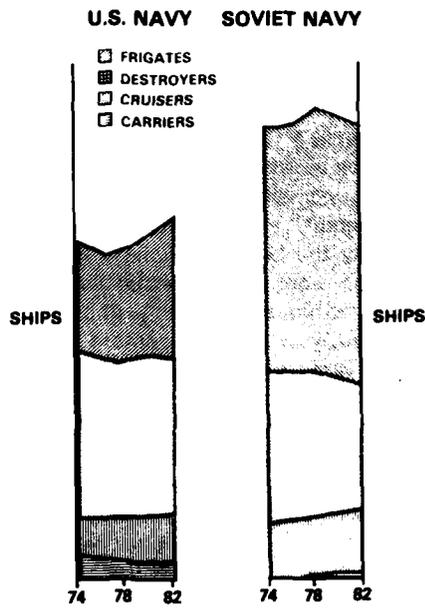
SOVIET NAVY



AS OF 15 JUNE 1981

CHART II - 31

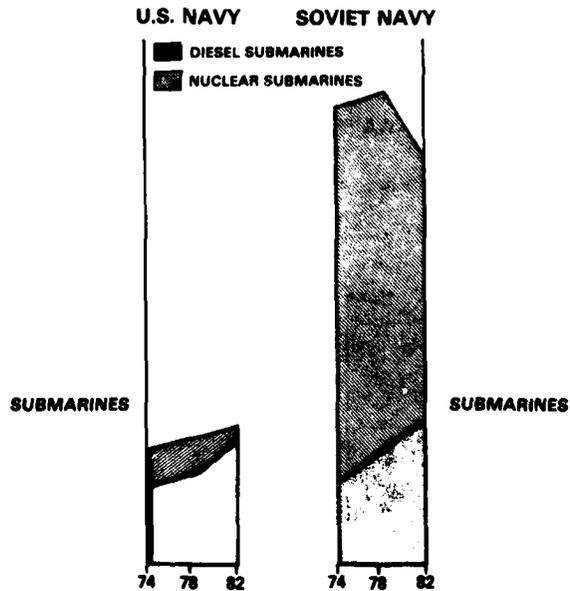
## PRINCIPAL SURFACE COMBATANTS



AS OF 15 JUNE 1981

CHART II - 32

## GENERAL PURPOSE SUBMARINES\*



\* INCLUDES APPROXIMATELY 100 SOVIET RESERVE SUBMARINES (CADRE CREW)

AS OF 15 JUNE 1981

CHART II - 33

range and lift capacity (Chart II-34), there are several areas of concern. These include: the prospect of a decrease in amphibious lift capacity if fleet-wide block obsolescence in the 1990s is not precluded; inadequate naval gunfire support; and a significant shortfall in adequate mine countermeasures forces.

Although the US Navy retains a numerical advantage over the Soviets in naval aviation (Chart II-35), capability comparisons are difficult to make since the forces are organized for different roles. In keeping with its mission of sea control, the US Navy has a significant percentage of its aircraft capable of sea-based operations. Combat aircraft are designed for air superiority, attack, and ASW missions. The Soviet Navy has a minimal shipboard fixed-wing capability and relies upon shipborne SAMs and land-based fighters for fleet air defense. Soviet land-based naval aviation strike bombers (390 BACKFIRE, BADGER and BLINDER) carrying antiship missiles, however, represent a significant threat to US naval forces. The continuing deployment of BACKFIRE (approximately 1 per month) will pose a growing challenge to the US ability to operate in sea areas around the world.

The US Navy sea-based air capability could be a significant factor in offsetting the Soviet numerical advantage in major surface combatants and submarines and could be a decisive factor in the contest for sea control. Soviet sea-based naval aviation, however, is growing. In

the 1970s, the Soviets achieved a significant increase in airborne antisubmarine warfare capability and acquired an embryonic sea-based tactical air arm; in the 1980s, they will likely deploy a conventional takeoff and landing aircraft carrier. The continuing growth and development of Soviet naval air power provides an additional asset for opposition to US sea control.

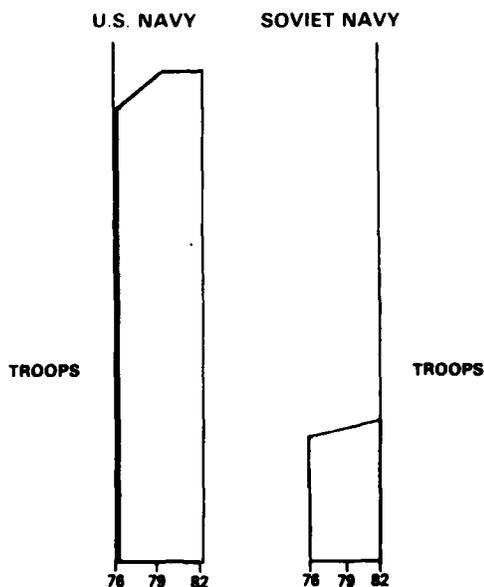
While it is necessary to focus on the surface combatants, submarines, and naval air forces of the US and USSR, it is also important to consider other trends and factors that affect the capabilities of a navy to carry out fundamental warfare tasks, e.g., mine warfare, underway replenishment, geographic constraints, and land-based air support.

#### Mine Warfare

The Soviet Union has the largest stockpile of naval mines in the world. It is estimated that a large percentage of the Soviet surface fleet is capable of laying mines on short notice. Soviet submarines are also capable of delivering mines, and over 300 maritime aircraft (plus an even greater number of Strategic Aviation aircraft) are capable of mine delivery. Although the Soviet Navy lags in the qualitative and technological aspects of mine countermeasures, it has a large force of MCM ships to compensate for technological deficiencies.

Mining by the US and its allies could be very effective because of the geographic restrictions on Soviet access

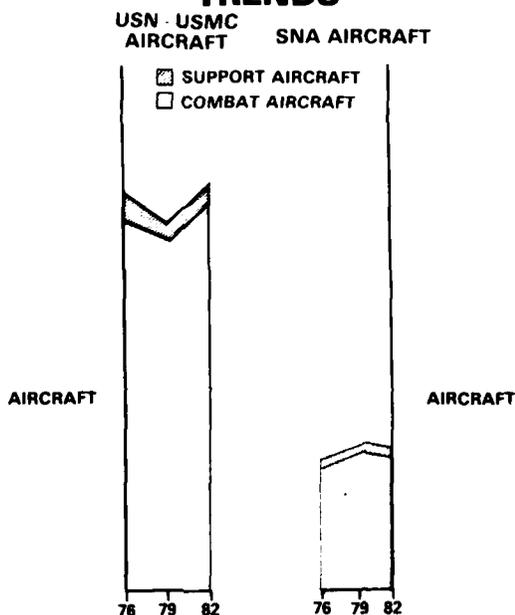
### U.S. AND SOVIET AMPHIBIOUS LIFT CAPABILITY\*



AS OF 15 JUNE 1981

CHART II - 34

## U.S. AND SOVIET NAVAL AIRCRAFT TRENDS



AS OF 15 JUNE 1981

CHART II - 35

to the oceans and the large concentration of submarines in a small number of Soviet ports. The US naval capability to deliver mines resides primarily with aircraft (A-6, A-7, S-3, P-3) and some attack submarines. In addition, the US Air Force has a collateral minelaying function using B-52 aircraft. US MCM forces consist of 25 obsolete ocean minesweepers (22 are in the Naval Reserve Force) and two squadrons of airborne MCM helicopters. A major effort is now underway to upgrade US MCM capabilities; new mine warfare ships are planned for delivery starting in FY 1985. As Chart II-36 indicates, the Soviet Union has a vastly larger mine warfare fleet than the US.

### Underway Replenishment (UNREP)

Underway transfer capability is essential for carrying out extended operations at sea. Because of the US Navy's long experience in providing full-service mobile support at sea, the US holds a clear margin of superiority over the Soviets in this area. From all indications, the Soviet Navy has recognized the need for a major improvement in its resupply capability and has intensified its modernization efforts. The BORIS CHILIKIN- and BEREZINA-class replenishment ships represent substantial improvements in Soviet UNREP capability. The KIEV-class V/STOL aircraft carrier and all new classes of principal surface combatants being constructed are also designed to take maximum advantage of these new

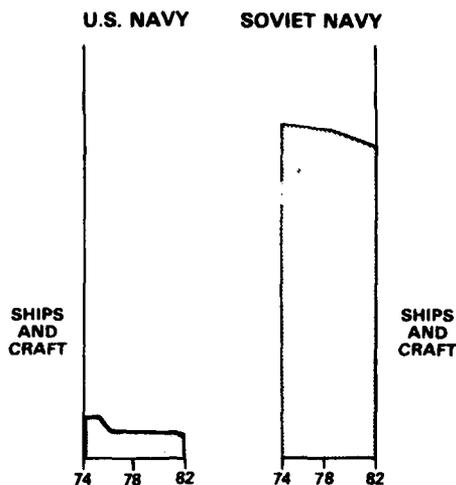
UNREP capabilities. Soviet deficiencies are offset to some degree by the responsiveness of the Soviet merchant fleet in providing logistical support to naval forces.

### Geographical Factors Affecting the Maritime Balance

There continues to be considerable debate about the open-ocean effectiveness of Soviet naval forces. Some of this uncertainty stems from geographical constraints on the Soviet Navy. The four Soviet fleets — Northern, Baltic, Black Sea, and Pacific — are widely separated, which complicates their ability to function as a coordinated force. To reach the North Atlantic, the Northern Fleet (based in the Kola Inlet of the Barents Sea) must transit more than 1,500 miles through waters bounded by potentially unfriendly nations. The Baltic Fleet has access to the oceans only through the Danish Straits, which are narrow, mineable, and dominated by Sweden, Denmark, Norway, and West Germany. The Black Sea Fleet can reach the Mediterranean Sea only by transiting the Turkish Straits, which are also narrow, easily mineable, and controlled by Turkey. These constraints could be somewhat offset by pre-hostilities deployment, but this would provide significant strategic warning.

The Soviet Pacific Fleet is concentrated at Vladivostok, on the Sea of Japan, and Petropavlovsk, on the

## MINE WARFARE SHIPS AND CRAFT\*



\* INCLUDES RESERVE

AS OF 15 JUNE 1981

CHART II - 36

northern Pacific Ocean. The forces at Vladivostok have ready access to the Sea of Japan, but to reach the Pacific Ocean they must pass through straits close to Japan and South Korea and readily accessible to the US Navy. Although the fleet at Petropavlovsk has easy access to the Pacific Ocean, Petropavlovsk is located on the Kamchatka Peninsula, remote from the Soviet heartland and not easily resupplied by land routes. Thus, the Soviet Navy would have great difficulty in maintaining operations out of Petropavlovsk unless major sea lines of resupply could be sustained — a very challenging wartime task. Map II-3 identifies the geographic constraints on Soviet fleets.

While US fleets, located on both coasts of the continental US and in Hawaii, enjoy unimpeded access to the open ocean and SLOCs, closure of the Panama Canal would restrict the US ability to shift naval forces between theaters. Aircraft carriers cannot transit the canal under any circumstances.

### Land-based Air

Soviet Strategic Aviation Forces maintain a large number of aircraft suitable for maritime missions. Many are equipped with air-to-ship missiles suitable for attacking ships. These include the BEAR B and C, BADGER G, BLINDER B, and BACKFIRE.

The US Air Force is assuming a greater surveillance role in support of SLOC defense from key island and coastal bases. Significant progress is being achieved in surveillance and minelaying capabilities. E-3A (AWACS) aircraft stationed in Iceland contribute to the defense of

the North Atlantic SLOC by providing air and sea surveillance of the GIUK Gap. Operating in conjunction with USAF fighters stationed in Iceland and carrier battle group organic air assets, E-3As provide extended surveillance and aerial battle management capabilities for the defense of Iceland and the North Atlantic SLOC. Aircraft from the United Kingdom and Norway also play a key role in the defense of the GIUK Gap.

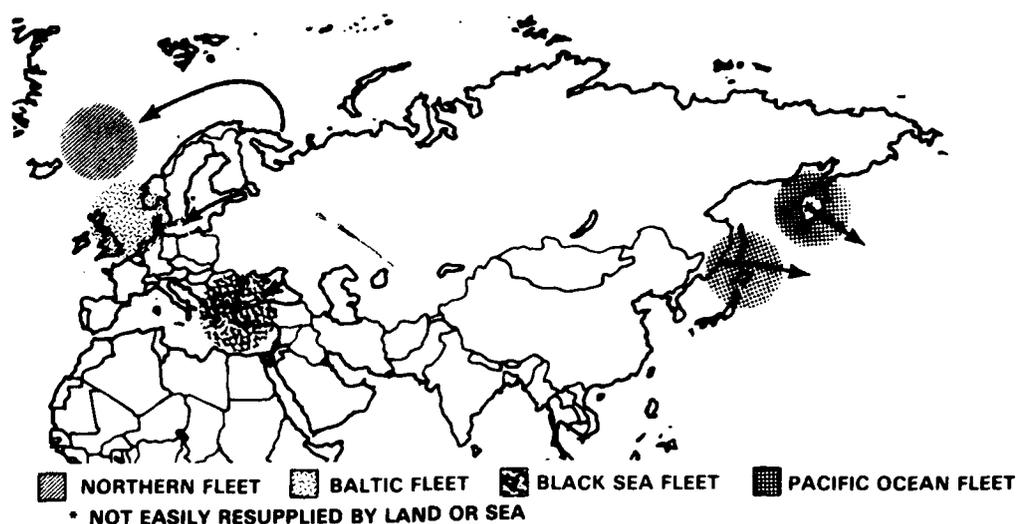
The Strategic Air Command (SAC) is seeking to develop the plans, procedures, and training necessary to integrate the capabilities of the B-52 into maritime operations. The B-52 is well suited for aerial minelaying, since it has the capability to deliver up to 56 naval mines at intercontinental ranges. SAC's sea reconnaissance/surveillance mission is accomplished by long-range SR-71, U-2, B-52, and RC-135 aircraft.

### Summary

Declining US Navy force levels and two decades of extensive Soviet investment in maritime forces have resulted in the US losing the essential margin of maritime superiority enjoyed by this nation for the past 40 years. During its evolution from a coastal defense force to a navy with global capabilities, the Soviet Navy has acquired substantial advantages in numbers of ships and submarines, retained its superiority in mine warfare and antiship cruise missile technology, and reduced long-standing US advantages in ASW and naval aviation.

The US Navy, while not having adequate assets to execute all the requirements of a global war, still maintains advantages over the Soviet Navy. Superior naval air

## GEOGRAPHIC CONSTRAINTS ON SOVIET NAVAL OPERATIONS



MAP II - 3

power and submarine-quieting and ASW technology, coupled with Soviet geographical constraints and limited underway replenishment capabilities, offset to a degree Soviet numerical advantages in surface combatants and submarines.

While continuing Soviet naval expansion and qualitative improvement remain matters of concern, recent increases in investment in US maritime capabilities should help arrest unfavorable trends. These initiatives must be sustained in order to regain an essential margin of clear maritime superiority.

### GENERAL CONCLUSION

Two decades of steadily increasing Soviet military expenditures, coupled with a long period of Western restraint, have allowed the Soviets and their allies and

surrogates to achieve significant advantages in strategic nuclear, theater nuclear, and conventional capabilities. These advantages have led directly to increased risks to free world security, both on a global scale and in regions important to US and allied interests. Recent increases in US defense efforts have begun to arrest and, in some cases, reverse the unfavorable trends, but much more must be done if the US and its allies are to reduce the risks to an acceptable level. In particular, efforts now underway to renew US military strength and encourage other nations to share in the common defense must be continued over the long term. Unfavorable trends that have been developing for many years cannot be corrected overnight or without substantial sacrifice by all threatened nations. Strong US leadership and the sustained support of US defense programs and coalition measures are essential for meeting the challenges ahead.

## CHAPTER III: TOPICS OF SPECIAL INTEREST

### INTRODUCTION

The foregoing assessments of the military balance have identified many factors that bear on the deterrent and warfighting capabilities of US forces. This chapter addresses several of these factors, identifying problem areas, noting progress, and suggesting initiatives.

To deter and, if necessary, defeat aggression, US military forces must have the capability to fight successfully when, where, and as long as needed. This capability depends on the readiness of US active and reserve forces, the ability to generate additional forces, adequate mobility for projecting combat power to forward areas, and a responsive war-supporting industry. Underlying all of these requirements is the continuing need to create and implement supportive manpower policies and programs.

US-Soviet technological competition, security assistance, arms control and other security related negotiations, and US participation in Sinai peacekeeping efforts merit special review as well.

### READINESS OF US FORCES

Readiness — the ability of forces, units, weapon systems, or equipments to deliver the outputs for which they were designed — is essential to the responsive and effective use of US forces for deterrence and defense. There are no simple techniques for measuring readiness; some factors are readily measurable, but others are less tangible and require subjective judgment.

The Joint Chiefs of Staff and military commanders rely upon many means to assess the ability of units to respond when and where needed. The basic tools for measuring readiness are the Unit Status and Identity Report, which provides an authoritative assessment of individual unit readiness, and annual assessments by the commanders in chief of unified and specified commands of their command's ability to perform its missions. Additional reports are used by the Services to evaluate readiness of their respective units. Exercises are an especially important means of assessing readiness because they allow evaluation of a unit's ability to function in combination with other US or allied units.

Combat ratings (C-ratings) are a commonly used, but somewhat limited, indication of unit readiness. C-ratings are determined by evaluating units against criteria in four areas: personnel strength, equipment readiness, equipment and supplies on hand, and level of training. As a rule, a unit's overall combat rating corresponds to the lowest rating achieved in any of the areas. Although

C-ratings provide some utility as a measure of readiness, they do not, in many cases, represent a unit's true state of readiness. For example, relatively few general purpose units ever reach C-1 (fully combat ready), but most can carry out their missions.

### Active Forces

Our strategic forces must be ready to respond to an attack with only minutes of warning and, therefore, must meet the most demanding day-to-day readiness requirements. These forces are drilled and exercised continually and maintain a very high readiness posture. US ICBMs and deployed SSBNs are on continuous alert; bombers and supporting tankers also meet stringent alert requirements. Strategic defense and C<sup>3</sup> forces, such as AWACS, interceptors, and critical command posts, are also kept at high levels of readiness.

By most measures, the majority of our active general purpose forces are somewhat limited in their ability to fulfill the demanding tasks set out for them, particularly those missions required under general war conditions or where multiple threats must be countered simultaneously. Nevertheless, these forces are prepared to respond to such contingencies as may arise. While the overall readiness of these forces remains less than required because of force structure shortfalls and persistent problems in manning and sustaining the force, forward deployed and other selected early deploying units are generally maintained in higher states of readiness.

Joint and combined training exercises are an especially useful means of assessing the readiness of US general purpose forces. During FY 1981, 86 JCS-directed and coordinated exercises were conducted. Forces of all Services participated in this training, which improved their ability to deploy to the Far East, Europe, Latin America, and Middle East; operate in desert and other extreme environments; command and control a four-Service task force; and link reinforcing units with deployed or pre-positioned equipment. Joint and combined training exercises will continue to play an important role in sharpening the readiness posture of US forces.

The most critical concern with general purpose force readiness is the shortage of qualified military personnel. Within Army units, the most pressing military personnel problem remains the shortage of noncommissioned officers (NCOs) in combat arms, military intelligence, and electronic warfare. The Navy is short of experienced petty officers and officers in billets requiring highly technical skills. All Services are short of pilots.

Major shortfalls in equipment, supplies, and training

also require correction as a matter of urgency. Materiel shortages have an obvious impact on unit combat capability and an adverse impact on training as well. In some cases equipment pre-positioned in forward areas has been taken from units in the United States, leaving the stateside units short of equipment for training or deployment to other areas. Additionally, the limited funding for fuel and repair parts has impaired training by forcing reductions in ship steaming days, flying hours, and transportation of ground units to field training sites. Readiness of many units, especially ground units based in Europe, has been affected by the lack of areas for realistic field training.

### **Reserve Forces**

Reserve forces are a vital part of the total US military capability. Yet, most ground combat units and surface ships have less than desirable combat ratings. As with the active forces, the most critical problem is a lack of adequate equipment and manpower. Although the total strength of the Selected Reserve has increased each year since 1978, it remains more than 157,000 people short of the peacetime requirement.

### **Readiness Improvements**

Increasing concern with readiness deficiencies has led to a broad range of corrective measures. A major effort has been made to define readiness more clearly and identify areas in which additional resources could have the greatest impact on combat capability. Importantly, shifts in resource priorities have supported efforts to attain higher levels of readiness.

Progress in improving the readiness of general purpose forces has been slower than desired, but recent budgetary actions have resulted in some improvement. The most noticeable improvements stem from enhanced recruiting and retention, a trend which should continue and result in a force with a richer career content. Although current reenlistment rates are among the highest ever experienced, several years of sustained support will be required before the mid-career level shortfalls are overcome. In addition, the austere procurement funding for spares in past years has been reversed and the downward trend slowed to a point where relative stability exists. Continued full funding and procurement are required in order to achieve a significant improvement in this area.

Because of the all-encompassing nature of readiness, there are no quick or easy solutions to these problems. The progress toward improved readiness can be attributed primarily to increased funding and improved personnel programs. Significant pay-offs in terms of readiness must await the outcome of fully sustained programs over the next few years

## **MOBILIZATION AND INDUSTRIAL PREPAREDNESS**

In conventional conflicts with a major enemy, active units could operate successfully for only a very limited period before requiring augmentation or reinforcement by reserve forces and additional war materiel produced by the US industrial base. It follows, then, that capabilities to mobilize the reserves, expand the forces to the degree necessary, and expand and expedite industrial production are also critical elements of the overall US deterrent and warfighting posture.

### **Mobilization of Reserve Forces**

When mobilized, reserve forces augment, reinforce, support, and sustain the active forces and expand the training and logistical base in CONUS. Reserve forces are essential not only for staying power, but also initial wartime operations. In the event of a major conventional war, large segments of the active forces would depend on some level of mobilization for transport to forward areas, combat augmentation, and logistic support. For example, reserve forces provide nearly half the nation's strategic military airlift and land combat power, and two-thirds of its logistic support capability. The Active Army relies on the Reserve Components (RC) to provide the preponderance of combat support and combat service support units for major operation plans. Chart III-1 shows the Reserve and National Guard contributions to the US total force.

### **Mobilization Planning**

The ability to mobilize is dependent on many mutually supporting actions within the Executive and Legislative Branches, and the non-government sector as well. Mobilization planning is the process by which these actions are developed and coordinated.

Important planning activities were initiated or emphasized by the Department of Defense (DOD) during the past year. The more significant of these activities involved indefinite continuation of peacetime draft registration for 18 year old males; an assessment of the impact of full mobilization on the civil sector and the dissemination of the results to the civil sector; evaluation of the need for new or revised legislation affecting mobilization; determination of the adequacy of the industrial base and actions required to eliminate choke points; and reactivation of the Mobilization and Deployment Steering Group to address critical mobilization issues within DOD. In addition, an Emergency Mobilization Preparedness Board was established within the Executive Branch to address critical mobilization matters in an interdepartmental forum. This initiative, together with those undertaken within DOD, will help in-

## REPRESENTATIVE GUARD/RESERVE CONTRIBUTIONS TO TOTAL FORCE

<u>MANNING</u>	<u>NO. (000s)</u>	<u>% OF TOTAL</u>
ACTIVE FORCES	2,064	55
GUARD AND RESERVE UNITS	884	23
PRETRAINED INDIVIDUAL MANPOWER	837	22

### FORCES

<u>ARMY</u>	<u>NAVY</u>
33% COMBAT DIVISIONS	14% CARRIER AIR WINGS
50% ARTILLERY BATTALIONS	88% MINESWEEPERS
60% ARMORED CAVALRY REGIMENTS	35% MARITIME PATROL SQUADRONS
67% TACTICAL SUPPORT FORCES	60% MILITARY SEALIFT COMMAND PERSONNEL
<u>MARINE CORPS</u>	<u>AIR FORCE</u>
25% DIVISION / WING STRENGTH	65% AIR DEFENSE INTERCEPTORS
29% OBSERVATION AIRCRAFT	57% TACTICAL RECONNAISSANCE
34% LIGHT ATTACK AIRCRAFT	48% STRATEGIC AIRLIFT CREWS
33% ANTI-AIRCRAFT MISSILE BATTALIONS	60% TACTICAL AIRLIFT
	34% TACTICAL FIGHTERS

AS OF 30 SEPTEMBER 1981

CHART III - 1

sure that the US is prepared to mobilize its resources in support of defense requirements.

### **Mobilization Exercises**

JCS-sponsored exercises are the principal means of testing and validating mobilization plans and capabilities. These exercises, which are built around realistic scenarios and involve non-DOD agencies and industry, help:

- Determine the adequacy of existing mobilization plans, systems, and procedures;
- Determine previously unidentified limitations in manpower and logistics procedures to support mobilization and initial deployment;
- Evaluate mobilization interrelationships within DOD and among other federal agencies; and
- Assess the effectiveness of deployment planning.

### **Industrial Base**

Any major confrontation with the Soviet Union would place extraordinary demands on war materiel critical to

sustaining US forces. A strong industrial base, capable of rapid expansion, is therefore critical to both deterrence and defense.

Over the years, there has been little improvement in the capability of the defense industrial base to respond to potential wartime requirements. Drawing upon recommendations of Congress and the Defense Science Board (DSB), DOD has begun implementing an action plan to improve industrial base responsiveness. This plan is placing major emphasis on measures to reduce end item and component lead times. Efforts are underway to develop the capability for production of war reserve materiel to provide specified days of supply within one year of a decision to do so. Funding increases will be necessary for the attainment of new defense industrial base objectives, but policy and legislative changes recommended by the congressional and DSB studies will be required to encourage private investment in the defense industrial base. The new directions proposed by DOD will take several years to implement, but if vigorously pursued should result in a surge capability for selected combat essential materiel and an enhanced US sustaining capability.

A major expansion of the industrial base to satisfy wartime demands involves considerations other than increased investment. Two such considerations are the critical shortage of skilled workers and engineers, and the absence of standby authority for the President to commit funds for additional emergency procurement of critical war materials prior to a declared national emergency or full mobilization. The satisfaction of materiel support requirements under wartime conditions will depend as well on the availability of critical strategic materials, most of which are inadequately stocked to meet established goals.

## MOBILITY

### Requirements

The three primary conventional contingencies facing the United States are defense of Western Europe against a Warsaw Pact attack, support of the Republic of Korea against an attack by North Korea, and employment of US combat forces in Southwest Asia to defend vital interests there. Success in all three tasks depends upon mobility forces which can project combat forces rapidly and sustain them as long as necessary to meet US objectives. In each case, US forces would have to travel thousands of miles to the war zone, while enemy forces would have to move only hundreds of miles. Without adequate mobility, combat forces cannot be brought to bear at the point of attack soon enough or with sufficient staying power to influence the outcome favorably.

The Congressionally Mandated Mobility Study (CMMS), provided to the Congress in May 1981, detailed the need for balanced airlift, sealift, and pre-positioning capabilities. Each capability has its special strengths; all are required for adequate mobility (Chart III-2). In general, airlift will transport more than 90 percent of the combat forces delivered during the first 30 days of a crisis. These movements will include equipment and personnel to marry-up with pre-positioned stocks. In an extended crisis, sealift will eventually account for 90-95 percent of the total cargo delivered.

To meet the needs of military mobility, both airlift and sealift forces must possess a number of characteristics. These characteristics include the flexibility to operate in all areas of the world, responsiveness to changing needs of combat, ability to perform and survive near the combat objective, and capability to load and offload military equipment and supplies with a minimum of local support and facilities. Although some military mobility needs can be met by commercial carriers, the features listed above require dedicated military mobility forces for the rapid projection and sustained support of combat forces.

Mobility shortfalls are especially pronounced when multiple, simultaneous contingencies are considered. The increased likelihood of requirements for simultaneous deployment of US forces to multiple theaters underscores the need for significantly improving our mobility posture.

## BALANCED MOBILITY

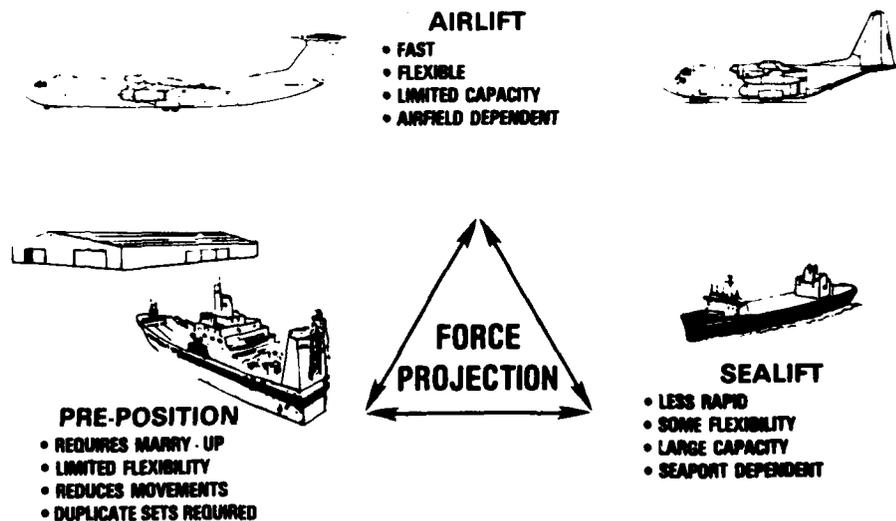


CHART III - 2

## **Airlift Forces**

Current airlift forces consist of 70 C-5s, 234 C-141s, 512 C-130s, and 16 C-7s assigned to active and reserve forces plus over 400 commercial aircraft in the Civil Reserve Air Fleet (CRAF). There is adequate passenger lift capability within the CRAF to support most major planned deployments. However, cargo airlift, especially for outsize equipment such as self-propelled howitzers, fighting vehicles, attack helicopters and support vehicles, is less than adequate to meet early deployment and sustainability requirements.

Programs to improve cargo capabilities include the C-141 stretch modification (to be completed in summer 1982), the C-5 wing modification (to be completed by 1987), acquisition of spare parts to support higher C-5 and C-141 wartime utilization rates, acquisition of additional KC-10s, and procurement of additional outsize cargo aircraft. As documented in the CMMS, inter-theater airlift capability should be increased by 20 million ton-miles per day (MTM/D) to provide an adequate capability for force projection.

## **Sealift Forces**

The total US inventory of about 450 military and commercial ships is adequate in terms of tonnage carrying capability. However, the problems of on-berth availability, antiquated ships in the National Defense Reserve Fleet, lack of ships that permit easy onload and offload of unit equipment, and long transit times (most ships have maximum speeds under 20 knots) would prevent the fleet from meeting the time-phased force deployment requirements of major contingencies. The acquisition of the fast SL-7 container ships (TAKR-X) and their conversion to roll-on/roll-off (RO/RO) configuration will help alleviate this situation. The TAKR-X program will provide the capability to deploy heavy land forces more rapidly, delete requirements for more than six division sets of Army POMCUS in Europe, and reduce dependence on foreign bases. However, there is a need for additional fast RO/ROs, fast tankers, and barge carriers to enhance worldwide deployment and reinforcement capabilities.

## **Pre-positioning**

In an effort to overcome the capacity limitations of airlift and speed limitations of sealift, the deployment by some US forces is being supported by pre-positioning unit equipment and supplies in areas of potential conflict. Pre-positioning is not a substitute for airlift or sealift, but complements them, since pre-positioned stocks cannot be put to use without the timely deployment of materials and personnel.

Pre-positioning in Europe is being upgraded by programs designed to fill POMCUS sets for six divisions, improve war reserve stocks, and pre-position equipment for a Marine Amphibious Brigade in Norway. Programs are also underway to increase pre-positioning for potential use in Southwest Asia. The thirteen-ship Near-Term Pre-positioning Force anchored at Diego Garcia in the Indian Ocean contains equipment for one MAB plus stores for 30 days of combat support for the MAB and early arriving Army and Air Force units. Some of these ships will be replaced under the Maritime Pre-positioning Ship program, which by FY 1987 will provide a force containing equipment for three MABs.

## **Civil Assets**

Although military-unique ships and aircraft are indispensable, many wartime and contingency missions can be accomplished by the use of civilian commercial assets. In wartime, over 95 percent of US sealift, 90 percent of US passenger airlift, and 40 percent of US cargo airlift would be provided by the civil sector. Further, most cargoes leaving the CONUS would be handled through civilian terminals. Because these contributions are essential to the successful execution of US operation plans, the health of the transportation industries, especially those which would provide intertheater mobility assets, must be maintained. Further, rapid access to these resources in times of crises must be assured.

## **Intratheater Mobility**

Movements within a theater are as critical to mission success as the movements to the theater. The ability to move forces and sustain combat operations is highly dependent on the establishment of a viable theater transportation system. Intratheater movements are supported by surface and air assets. The majority of a ground force's transportation is normally provided by organic capability — the unit's own vehicles and aviation assets. However, most units are not totally self-mobile and require support from transportation units, intratheater airlift, intratheater sealift, and, where available, host nation resources. The mode of transportation used would be a function of tactical urgency, terrain, distance, lift availability, and movement priority. Some requirements are predetermined in theater war plans and identified for air or surface movement; however, most requirements cannot be accurately predicted since they will depend on the needs of the immediate tactical situation.

Success in a Southwest Asia contingency would depend on the forward movement of forces from aerial and sea ports of debarkation and the capacity to distribute supplies and equipment over intratheater LOCs. Without an adequate intratheater airlift capability,

forces moving within the theater would be restricted to a limited surface network. However, current intratheater airlift forces are deficient in total capacity and lack an outsize capability.

### **Peacetime Readiness**

For mobility forces to be ready for war, they must train for war. Joint and combined exercises provide the most realistic training environment for the deployment and sustainment of combat forces. Such exercises provide opportunities to practice the coordination between mobility and deploying combat forces, plan the orderly flow of personnel and equipment to and through ports, and actually load and maintain transport aircraft and ships. These exercises are critical to the prevention of delays during actual crises.

The responsiveness of mobility forces is being enhanced by the establishment of the Joint Deployment System (JDS). This system, which is being developed by the Joint Deployment Agency, is designed to link lift users with the National Command Authorities and transportation operating agencies. The JDS will provide an increased capability for changing force allocations, scheduling lift requirements, and altering planned force deployments.

### **Seaport and Airport Operations**

The overall effectiveness of mobility forces is highly dependent on the speed and ease of loading and unloading operations at ports of embarkation and debarkation. The availability of modern, deep water seaports and large, well equipped airports in contingency areas can be of great advantage for rapid response and sustained operations once conflict has begun. Such facilities must be adequately supported by host nation personnel and defended against enemy interdiction or sabotage.

Well equipped seaports and airports, however, may not be available in the crisis region or, if available, may be subject to degradation by enemy action in spite of defensive measures. Therefore, military airlift and sealift forces must have the capability to conduct cargo and personnel transfer operations at austere ports with a minimum of fixed facilities. The capability to operate at austere ports depends on a number of factors, including ships or aircraft with roll-on/roll-off and other self-sustaining loading equipment. These military-unique needs must not be overlooked in the development and acquisition of airlift and sealift assets.

### **Summary**

US military strategy calls for a mobility force capable of global power projection. Nevertheless, mobility

forces, which account for three percent of the DOD budget, will have only a limited capability to provide the timely force closures required. Uncertainties associated with possible contingencies suggest an increased demand on military transportation systems and underscore the requirement for speed and flexibility. New mobility assets must have capabilities which provide responsiveness, ease of loading, and adaptability for operations in austere locations. Enhancements to inter-theater and intratheater mobility are essential for the effective employment of combat forces.

### **MANPOWER**

The military forces of this nation shoulder uniquely demanding responsibilities — the defense of the United States and the protection of its worldwide security interests. To meet these imperatives, military personnel must train vigorously, endure hardship, deploy overseas and, when necessary, fight. The nation's fighting strength is in its people — their individual readiness and personal commitment to accomplish the defense mission in peace and in war.

From the inception of the All Volunteer Force (AVF), considerable attention has focused on a limited number of measurements for indications of its success or failure. Manpower end-strengths, in particular, have served as the principal measure of AVF success. Much of the DOD management effort, therefore, has been devoted to initiatives which improve recruiting and retention. This attention has had two principal effects on manpower programs. First, manpower management practices have been adopted without full consideration of their impact on the overall manpower requirements of all the Armed Forces. Second, there has been insufficient sensitivity to those initiatives which are not directly related to recruiting and retention, but which are crucial to discipline, esprit, cohesiveness, and readiness. The military must continue to depend on leadership, unity, cohesiveness, shared expertise, tradition, and continuity of command if it is to remain a viable fighting force — those characteristics which mark the military institution as something special.

The military profession cannot be seen as just a job — a source of income or training — for the pursuit of goals unrelated to national defense. In return for selfless service and personal sacrifices, military personnel expect and deserve a quality of life reasonably comparable to that enjoyed by the society they protect; a strong system of institutional support to fortify their dedication and loyalty and nourish the unit cohesiveness, personal readiness, and teamwork essential in battle; and a stable, predictable pay system. Too often, desirable manpower programs have been reduced without adequate consideration of the organizational impacts.

## Manning the Active Force

Population trends forecast that by 1990 the number of 17-21 year old males, the primary recruiting pool for military service, will decline to approximately 9 million from the peak of 10.8 million in 1978 (a decrease of 17 percent). This smaller male cohort means more intense competition for high school graduates among colleges, vocational schools, private employers, and the military. If educational institutions are able to prevent a decline in enrollments and private employers continue to hire young workers, as expected, the availability of enlistees for military service could decline by greater percentages than represented by population trends.

The competition for quality personnel will be even more intense than the competition for quantity. At the same time the military Services are increasing their demands for the highly skilled, other demands for these same personnel will be multiplying. Thus, the attraction of quality personnel will continue to be a critical factor for accessions in the future. To assist in attracting the required quality personnel, a new education incentive program is needed. The program must be capable of competing for people desiring to further their education with the many federally funded grants and loans, which do not presently carry the requirement for public service. Desirable features of such a program would in-

clude a tiered level of benefits, which would provide an initial entitlement as a recruiting incentive followed by an enhanced benefit for additional service; transferability of unused benefits to spouses or dependents; transition feature for personnel with the old GI Bill; and a delimiting date of 10 years after separation or retirement.

The recruiting trends for the active force reflected in Chart III-3 are encouraging. Quality, as measured by percentages of high school diploma graduates, is on an upward trend, with the Services having recruited 81 percent high school graduates in FY 1981 after a five year low in FY 1980 of 68 percent. The number of Category IV new personnel decreased from 31 percent in FY 1980 to 18 percent in FY 1981.

With regard to reenlistment for the active force (Chart III-4), first term retention rates of 43 percent exceed those of any year since inception of the AVF. Career reenlistment rates also increased (Chart III-5) after FYs 1979 and 1980, the lowest years since the draft was discontinued. Overall, the total reenlistment rates (Chart III-6) compare favorably with similar rates since 1972. Of concern, however, is the high number of critical skill personnel who elect not to reenlist. These critical skills involve technical expertise, highly desired within both the civilian job market and the combat arms. Examples of these shortages are displayed in Chart III-7.

**DOD RECRUITING**  
(% OF OBJECTIVE ACHIEVED\*)

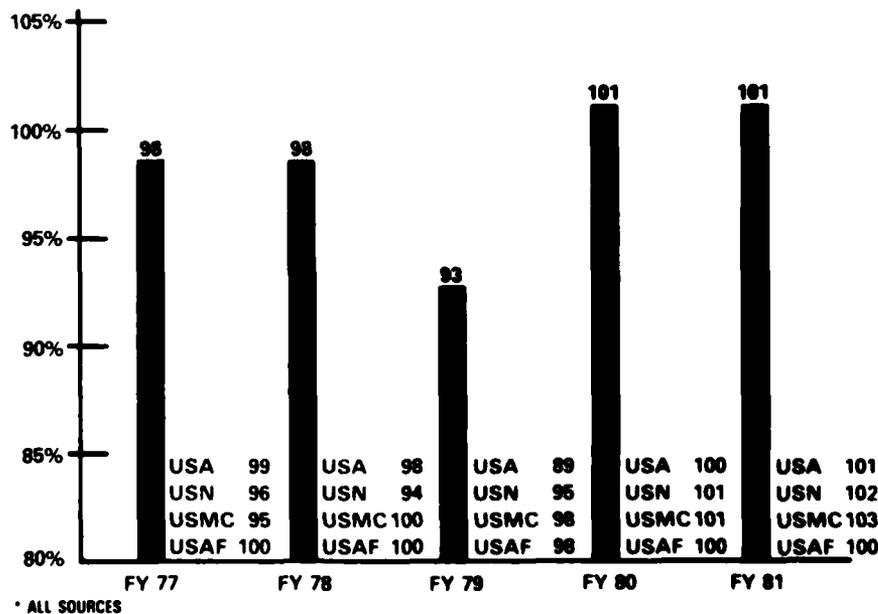


CHART III - 3

### DOD FIRST TERM REENLISTMENT (% OF ELIGIBLES)

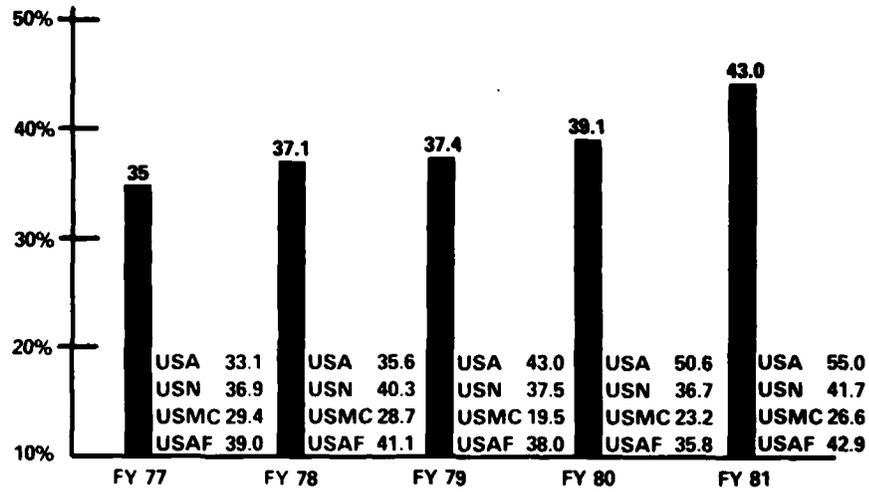


CHART III - 4

### DOD CAREER REENLISTMENT (% OF ELIGIBLES)

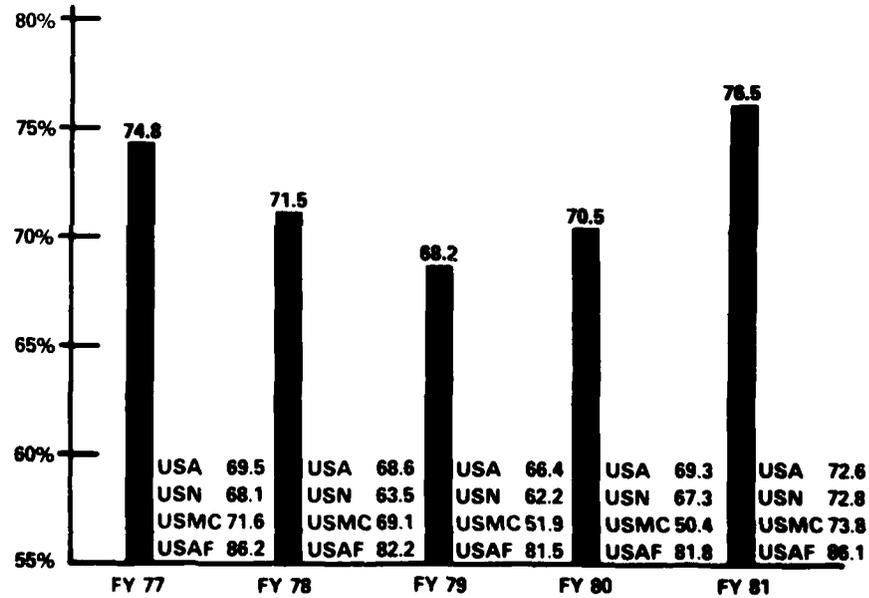


CHART III - 5

## DOD TOTAL REENLISTMENT (% OF ELIGIBLES)

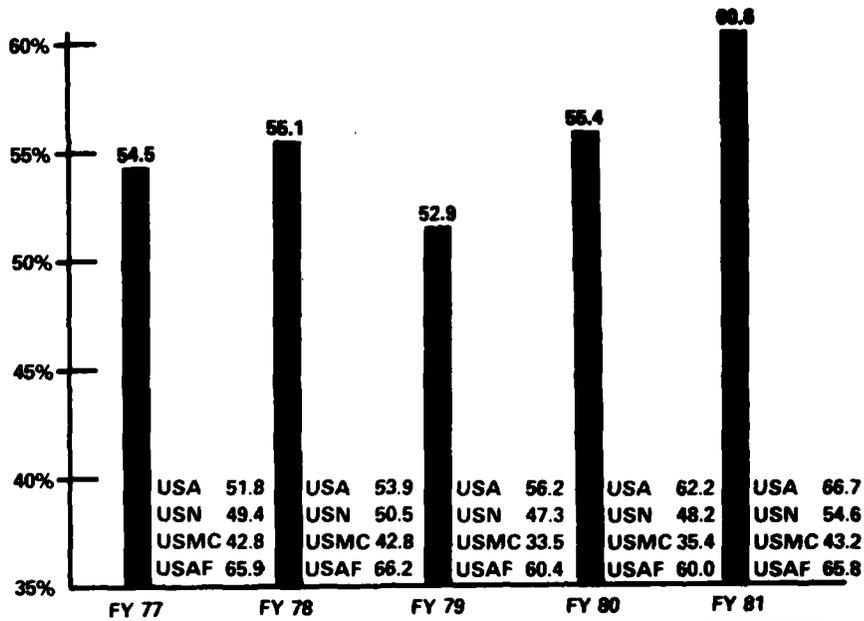


CHART III - 6

## REPRESENTATIVE SHORTAGE ENLISTED CRITICAL SKILLS

ARMY	<u>SHORTAGES</u>
• COMBAT ARMS NCOs	10%
• MILITARY INTELLIGENCE NCOs	20%
• ELECTRONIC WARFARE MAINTENANCE NCOs	44%
NAVY	
• AVIONICS PETTY OFFICERS	22%
• PROPULSION ENGINEERING PETTY OFFICERS	26%
• COMBAT SYSTEMS PETTY OFFICERS	27%
AIR FORCE	
• AIRCRAFT SYSTEMS MAINTENANCE NCOs	23%
• MISSILE MAINTENANCE NCOs	26%
• AVIONICS SYSTEMS NCOs	29%
MARINE CORPS	
• AIR CONTROL/AIR WARFARE ENLISTED PERSONNEL	21%
• SIGNAL INTELLIGENCE ENLISTED PERSONNEL	32%

AS OF 30 SEPTEMBER 1981

CHART III - 7

Active duty manpower demands will increase by about 8 percent or 162,000 between FY 1982 and FY 1987, a period during which the 17-21 year old male population will decline. In addition, Congress has imposed constraints on the quality mix of recruits. Although the constraints took effect in FY 1981, they become increasingly stringent through FY 1983. Recruiting and retention, of course, will determine the extent to which the force can be sustained or expanded. Accession requirements alone do not necessarily increase as the force grows, because the Services have programmed increases in the size of the career force, which will partially satisfy the increased personnel demands for an expanded force. Based on current projections, all Services are likely to experience problems in meeting recruiting goals with the quality of people necessary to accomplish the mission. Projections suggest that all Services will meet or exceed their programmed career force levels over the period.

A cautionary note is in order, however. Recruiting and retention trends for the active force have been favorable because of enacted and anticipated incentive packages, increased recruiting resources, and the state of the economy. A reduction in the resources necessary to attract and retain military personnel or an improvement in the nation's employment picture could adversely affect this trend.

### **Civilian Personnel**

Since 1974, repeated reductions in the civilian work force, particularly in base operations and the wholesale supply and maintenance areas, have had a direct impact on the ability to support forward deployed forces and carry out peacetime operations. These reductions have occurred during the same time when reliance on service provided by civilians has grown. While there has been some improvement since FY 1980, the necessity to continue to perform normal functions results in the diversion of skilled military personnel to perform jobs temporarily that should be performed by civilians. This diversion and the loss of the civilian workers themselves result in decreased unit readiness and individual morale.

The Services are nearing the maximum numbers of military-to-civilian space conversions which can be absorbed because of previous conversions, contracting out, and other constraints, e.g., use of civilians in combat, protection of the rotational base, and imposition of congressional or budgetary restraints on numbers of civilians. It is essential that the true civilian requirements of peacetime operations and increased requirements resulting from mobilization and deployment be recognized and funded.

The civilian end-strength ceilings should be removed

and the Services allowed to manage the civilian labor force within constraints of the annual appropriations act. Presently, however, the Services are short approximately 135,000 civilians to perform current peacetime support functions and provide an acceptable basis for mobilization.

A key problem facing civilian personnel management concerns the retention in overseas areas of critical DOD civilians and contractor personnel following mobilization or hostilities. These employees, including those assigned to critical jobs, may have to evacuate overseas areas with other noncombatants in the event of mobilization or hostilities. Initiatives and programs that would grant the overseas commander greater discretion in retention of US civilian employees must be supported.

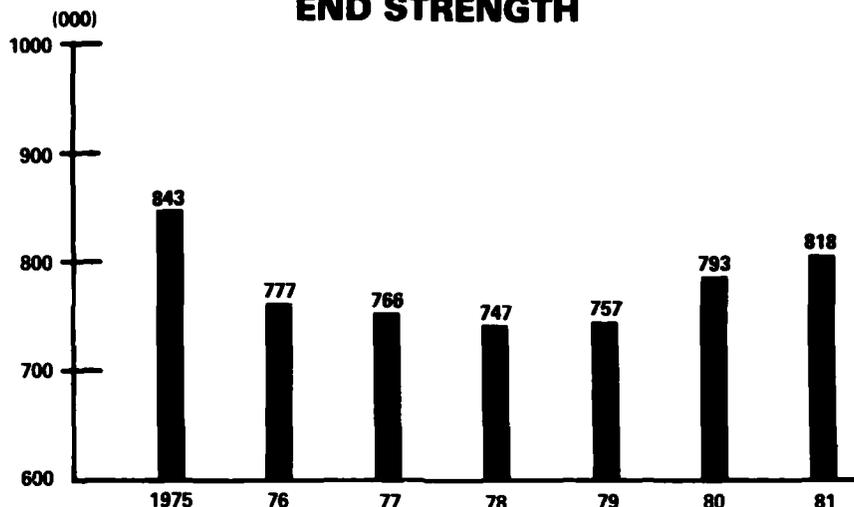
### **Reserve Components**

The Selected Reserves provide a significant portion of the fighting capability of the Armed Forces. The figures in Chart III-8 show a continued growth in strength, but the Selected Reserves are still more than 200,000 below the FY 1981 requirement of 1,040,000 — primarily in the Army National Guard and Army Reserve, although critical skill shortages exist in the Air Reserve Forces. Another category of the Ready Reserve is the Individual Ready Reserve (IRR), which upon mobilization would augment understrength active, National Guard and reserve units and replace initial combat casualties. The strength of the IRR has increased by almost 80,000 since its low point in 1978. However, even with the current 420,000 in the IRR, there is a shortfall of 250,000 to 300,000 trained personnel at about 90 days after mobilization. Currently approved programs to increase the supply of pre-trained personnel will still leave an Army shortfall in FY 1987 of approximately 55,000 at 90 days after mobilization. A comprehensive program to eliminate the remaining shortfalls is under development.

### **Compensation**

The philosophy of compensation is based on the idea that those who wear the uniform have a primary military function, and that this function is equally important for each given Service and grade, whatever specialization a member may have. Thus, a common basic pay table forms the foundation of the military compensation system, and progressive military knowledge, demonstrated excellence, and experience gained from Service tenure should be recognized. Unique institutional supports and the special and incentive pay structures are built upon this foundation. These supports and structures enable the Services to apply specifically targeted incentives when and where needed to attract and retain personnel possessing technical or unique skills which are highly transferable, or which have high demand in the private

## SELECTED RESERVE TRAINED UNIT END STRENGTH



AS OF 30 SEPTEMBER 1981

CHART III - 8

sector. The 96th Congress in 1980 and 97th Congress in 1981 passed significant legislative initiatives affecting military pay. The 11.7 percent military pay raise in FY 1981 and 14.3 percent overall increase in FY 1982 redressed the financial caps imposed from 1975-1979 and restored military compensation to roughly the relationship with the private sector that existed at the beginning of the AVF. The key to maintaining military pay comparability is to establish a stable, visible military pay raise adjustment mechanism tied to independently developed index data for comparable types of work and levels of responsibility in the private sector. The Services will face a continuing need to update special and incentive pay initiatives to alleviate critical skill retention problems.

There is also a need to eliminate the substantial negative compensation experienced by military members ordered to make a permanent change of station (PCS). In light of the significant costs associated with these moves, PCS travel should be recognized as an integral part of the military mission and the costs of performing this travel considered a part of doing business, not additional compensation to military members.

Another equally important concern is to insure the stability of the military retirement system. Members plan and serve careers with the understanding that, upon retirement, a stable program will exist to assist in maintaining a quality of life earned during their active service. The attempts of the past two years to modify the retirement system through the annual appropriations process undermine the required stability and effec-

tiveness of this important feature of the military compensation system.

### Quality of Life

Quality of life is a broad concept that encompasses the degree to which an individual's or a family's human needs are satisfied. This concept is based on the principle of reciprocal obligations between the nation and the military member. Military personnel and their families merit a life style commensurate with the demands and sacrifices imposed upon them. Meeting family needs, such as full medical and dental services, housing, legal support, dependent education, child care, financial planning, and a reasonable standard of living, is an eminently fair concept that contributes to retention, productivity, and the constructive attitudes of Service members.

Health care is a basic requirement for Service members and their families. Programs which improve military health care by providing in-house medical care for dependents and retirees must be supported. Improvements to the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) program are also urgently needed. Most significantly, a cost-sharing dental care program for dependents and retirees would enhance the military health plan and be consistent with the growing trend toward expanded paid health care plans in the private sector.

### TECHNOLOGICAL LEADERSHIP

The United States has held a general technological

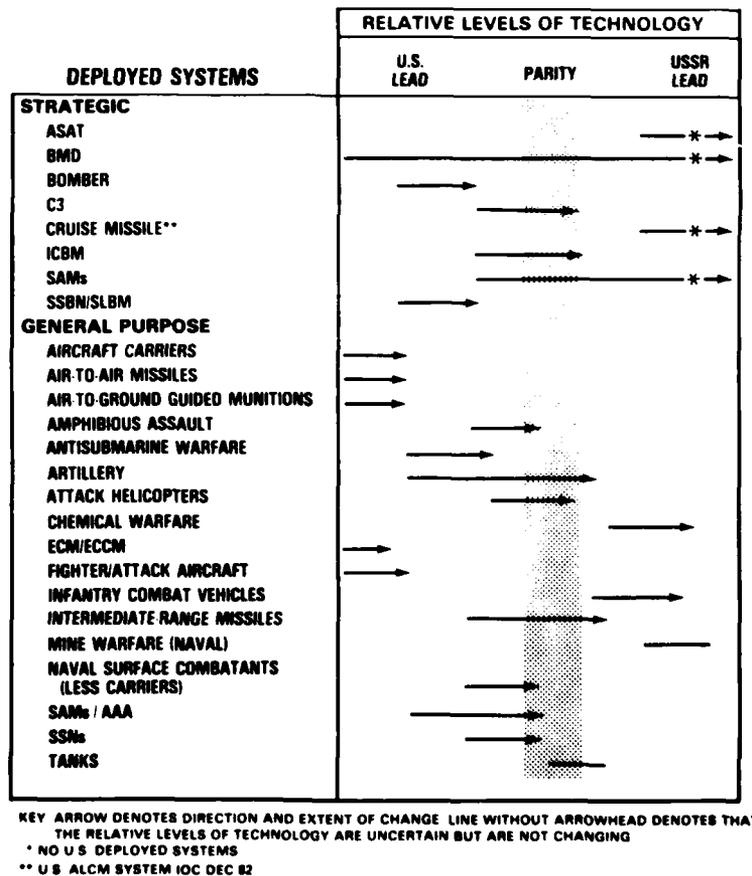
advantage over the Soviet Union for many years. As a result, most US weapon systems have been more capable than their Soviet counterparts and thus able to compensate, in part, for Soviet numerical superiority. The US still holds an advantage, but the areas in which it leads are fewer than a decade ago.

### US-Soviet Comparisons

Soviet gains in the relative quality of weapons and other military systems may be attributed to at least three factors. First, the Soviets have displayed great determination to catch up and have invested heavily in basic and applied technology. Second, the US has tended to lag behind the Soviets in investment in these areas, partly because of the mistaken notion that the Soviet Union is interested only in fielding large numbers of relatively unsophisticated weapons. Third, the USSR has skillfully exploited the transfer of technology from the US and other industrially advanced countries.

The Soviet Union has become strongly competitive with the US in important areas of basic technology and gained significantly in many more. While the US was clearly superior in most areas of basic technology in 1970, it now faces a major challenge. Because several years usually elapse between the advent of a new technology and its application in the field, the full effect of Soviet advances in the 1970s has yet to be felt. Chart III-9 displays trends in relative levels of technology achieved in the most modern deployed US and Soviet systems. The Soviets have advanced most dramatically in the strategic arena, but have registered impressive gains in other areas as well. This chart does not tell the whole story, however. Not only have the Soviets generally increased the relative sophistication of their military equipment, but they have placed new systems in the field at a higher rate than has the US. Thus, on balance, the US technological lead is less than a comparison of the newest equipment would suggest.

**CHANGES SINCE 1970  
DEPLOYED WEAPON SYSTEMS**



## Maintaining US Leadership

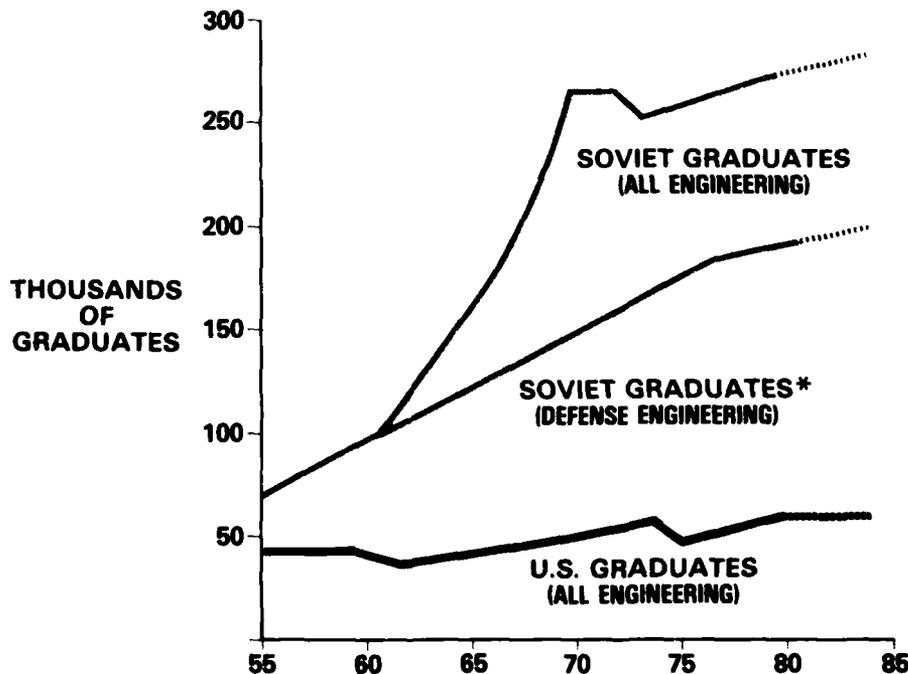
Because the Soviet Union gives no sign of relaxing its historic reliance on masses of men and equipment to prevail in war, the US must maintain a lead in military technology. Maintaining this lead will be difficult, however, since the USSR is making a determined and successful effort to reduce it. To keep the lead, and if possible to extend it, the US must do more than make judicious choices in military research and development. The US must also insure that its technological community remains the best in the world, that it can avoid excessive delays in fielding new technologies, and that it does not sacrifice hard won technological advantages except in cases that clearly serve the national interest.

### Technological Community

Technological leadership depends fundamentally on the quality and quantity of people committed to achiev-

ing it. Since World War II, the US scientific and engineering community devoted to national defense has been acknowledged the world's best. This situation is changing. Today, the United States has about 600,000 full-time scientists and engineers engaged in all types of R&D, the Soviet Union about 900,000. Although the productivity of the typical Soviet scientific worker may still be less than his US counterpart, there is a trend toward parity. More worrisome still, the US educational system is yielding only about 50,000 engineering graduates per year, and relatively few of them are moving into defense related work. The Soviet Union, on the other hand, graduates over 250,000 engineers per year, of which some 200,000 move into military oriented work. These trends, depicted in Chart III-10, could have a profound effect, over time, on the US ability to maintain its technological lead. Recognition of this challenge to the US R&D advantage is the first step toward strengthening a most basic aspect of US security.

## UNDERGRADUATE ENGINEERING U.S. AND SOVIET



\* COMPARABLE DATA FOR U.S. DOES NOT EXIST  
SOURCE: NATIONAL CENTER FOR EDUCATIONAL STATISTICS

AS OF 30 SEPTEMBER 1981

CHART III - 10

### Fielding New Technology

To maintain an effective technological lead, the US must insure that systems incorporating new technologies can be fielded in time to meet actual or anticipated threats. In recent years, shifting commitments and funding priorities have greatly hampered US development efforts. As a result, US industry has grown reluctant to invest significant research and capital in costly, sophisticated systems. Industry cannot be expected to assume such risks without assurance that its sole customer is committed to procurement of systems produced at logical and economical rates. Firm commitments and multi-year procurements can provide some of the needed assurances as well as reduced costs. In addition, the decision process for weapon system development and acquisition contributes to long lead times between concept definition and system deployment. Stable resource priorities must be set and balanced within the operating Service, Department of Defense, and Federal government as a whole. Research, development, and testing must provide decisionmakers with adequate confidence that systems will perform as designed and provide capabilities commensurate with investments. The prime determinant of military systems development remains the need to confront threats successfully when and where they emerge.

### Promising Technologies

The United States must devote whatever human and material resources are necessary to insure its security, but this requirement should not demand the US match Soviet expenditures of money and manpower in all areas of defense related technology. Rather, the US should concentrate its efforts on those technologies which promise to yield the most meaningful military advantage. Two such areas are microelectronics and lasers.

Microelectronics will continue to be a key element in the improvement of performance and reliability of US weapon and support systems. Advances in this field are proceeding rapidly and provide the US with its single greatest technological advantage over the USSR. The Very High Speed Integrated Circuits program now conducted by the Army, Navy, and Air Force will produce two more generations of very large scale integrated circuits. Studies have shown that these circuits will reduce the size and weight of electronic "black boxes" by a factor of five to ten, yield significant improvements in reliability, and greatly reduce acquisition and support costs. This new technology is crucial to technological competition, since it will permit the US to build digital processors of greatly increased speed and capacity. These processors, in turn, will lead to advances in weaponry; sensors; electronic warfare systems; and command, control and communications.

Lasers are perhaps second only to microelectronics in their promise of impact on military systems. The United States and the Soviet Union both are devoting much effort to this technology, and many important applications have reached the field. Lasers employed directly for military purposes may be divided into two categories: those used for data transmission, measurement, and improving the effectiveness of otherwise conventional weapons and those which use laser energy to damage or neutralize military targets. Operational applications to date fall into the first category and include range-finding for aerial and surface gunnery and target designation for bombs and other projectiles. One of the latest applications is the COPPERHEAD, an antiarmor, artillery-fired projectile that achieves great accuracy by riding a laser beam to its target. Other new military applications include coherent optical radar and high-capacity, highly jam-resistant communications. The most dramatic role for lasers, however, lies in the potential use of these devices as weapons in their own right. US programs have demonstrated already that lasers could achieve thermal kill of aircraft and airborne missiles.

The great impact of microelectronic and laser technology derives not only from the potential they hold for US capabilities, but for Soviet capabilities as well. The US clearly leads in the field of microelectronics and computers, but Soviet progress has been substantial. The Soviets have a growing computer industry and are steadily increasing the electronic sophistication of their military forces. Soviet progress in laser technology is even more impressive. The Soviets have worked in this field as long as the US and appear to possess expertise and resources at least equal to those in this country. The Soviet high-energy laser program is three to five times as extensive as the US effort and is tailored to the development of specific laser weapon systems.

### Technology Transfer

Soviet gains in technological capability have depended considerably on technology transfer from the West. In addition to being the source of much of the Soviet Union's electronic and computer technology and manufacturing know-how, the industrialized free world has supplied the Soviet Union in the past decade with billions of dollars worth of efficient machine tools, transfer lines, chemical plants, precision instrumentation, and associated technologies. These transfers have played a major role in the modernization and expansion of Soviet industry. Western equipment transferred for peaceful uses permits the Soviets to apply equal or better equipment to the military sector and, at the same time, relieve pressures arising from civilian consumers. The remaining Western advantage in technology imparts important leverage for translating limited re-

sources into military capability, and still provides a necessary offset of Soviet quantitative superiority. That advantage must not be lost.

## SECURITY ASSISTANCE

In the face of growing challenges and hostility, the US alone cannot provide all the military strength and resources to meet threats to its security interests and those of friends and allies. However, by assisting selected nations to acquire, use, and maintain the capability to defend themselves, the US can enhance collective security and the integration of US, allied, and friendly military forces in opposing common threats. The transfer of defense articles, services, and training to nations whose security objectives are compatible with US interests benefits both the US and the recipients.

Security assistance is a vital component of US national security and foreign policy. US security assistance programs serve as a means for sharing the burden of free world security and provide a tangible, visible relationship with countries of strategic importance to the United States. The international relationships that derive from security assistance can strengthen US military capabilities and improve the US global defense posture. Access to overseas bases and facilities by US forces, for example, frequently hinges on the US ability to provide reasonable levels of assistance to friends and allies. The transfer of military equipment and services and provision of low cost training help the US meet the security concerns of friends and allies and encourage stability which can lead to the peaceful resolution of disputes. Also, the long-term influence of security assistance programs can be considerable. Professional military training can enhance friendly force development and influence future military leaders of the recipi-

ent nations. Given the propensity of professional military officers to serve in positions of leadership in many of the nonaligned nations, foreign military training is a particularly cost effective instrument of US policy.

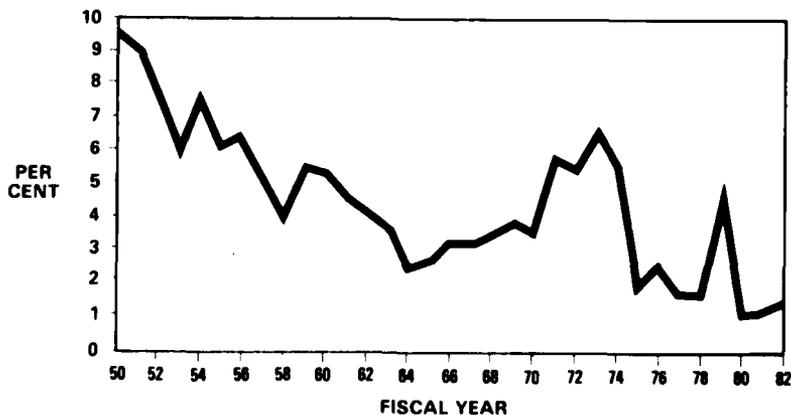
## The US Security Assistance Program

The US currently provides defense articles, services, and training on a cash sale, financing, or grant basis to 104 nations. Although the bulk of US security assistance is now in cash sales, there are three other major security assistance programs:

- The Foreign Military Sales Financing Program furnishes credit and loan repayment guarantees to enable eligible foreign governments to purchase defense articles, services, and training.
- The Military Assistance Program (MAP) provides defense articles and services, other than training, to eligible foreign governments on a grant basis.
- The International Military Education and Training (IMET) Program provides training in US schools to foreign military and related civilian personnel on a grant basis.

Although the dollar value of US military related exports has risen over the long term, the ratio of separately budgeted security assistance to the US defense budget has declined from a high of 9.5 percent in 1950 to under 2 percent today (Chart III-11). This reduction in the relative contribution of security assistance to overall US defense interests contrasts sharply with the continuing emphasis on coalition efforts for maintaining free world security. Chart III-12 depicts the long-term trends in grant military aid and foreign military sales (FMS). As shown on the chart, FMS increased sharply in the 1970s

**RATIO: SECURITY ASSISTANCE/DEFENSE BUDGET  
(CONSTANT FY 1982 DOLLARS)**



## GRANT\*/FMS\*\* PROGRAMS

FY 1950 - 1981  
(CONSTANT \$ - FY 1981)

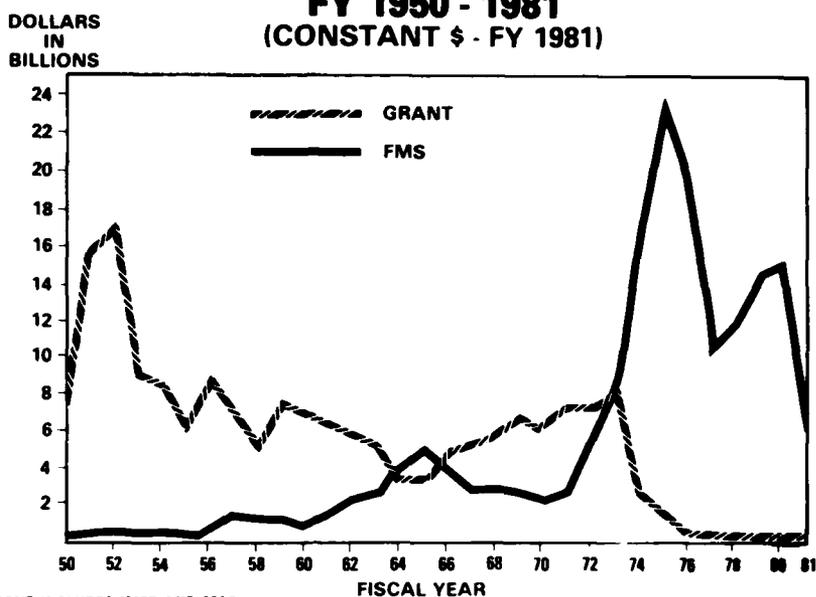


CHART III - 12

as reliance on MAP and IMET grants was severely reduced. Many recipients have had difficulty in adjusting to the shift from MAP to FMS, especially in view of higher energy prices, high interest rates, and the increased cost of military goods and associated services. Dollar value restrictions, selected prohibitions, and arms export restraints of the late 1970s also had a debilitating effect on US military assistance efforts.

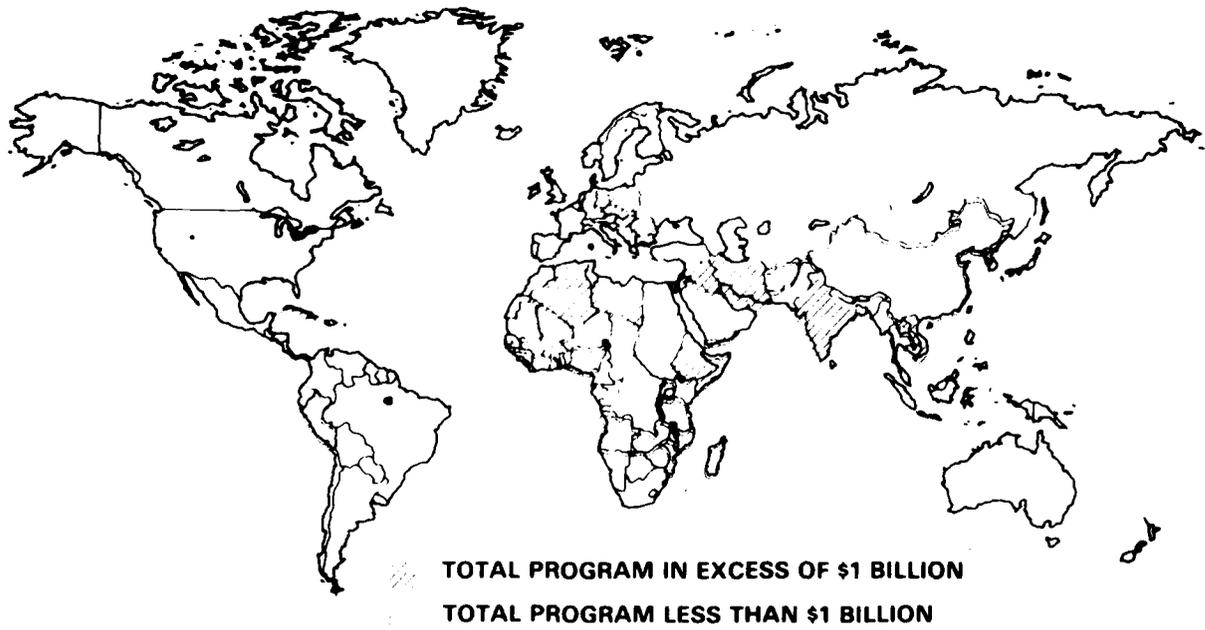
In recognition of the contributions of security assistance to important foreign policy and security objectives, the FY 1982 security assistance program has been increased substantially over previous levels, thus reversing recent adverse trends. Even though the FY 1983 program proposes further increases, additional steps need to be taken to enhance the effectiveness of security assistance as a means of achieving US objectives. In particular, the realities of high-cost defense technology, inflation, and pressing self-defense requirements dictate increased use of grant economic and military assistance and more liberal FMS credit terms and repayment periods. There is an increasingly critical need to reexamine security assistance provisions which limit the US ability to use the program with the flexibility demanded by security challenges of today and tomorrow. The restraints on the manning level and functions of overseas security assistance organizations is of continuing concern, since these elements are vitally important to the

management of assistance programs and dialogue on training, planning, operations, and host nation support. Additionally, expanded IMET funding levels would increase the training available to US allies and other friendly nations at a time when cooperative planning and combined approaches to mutual threats have become more critical to free world security. Finally, the value of US security assistance programs would be enhanced greatly by the extension of current legislative authority for incremental pricing of IMET to all FMS training. Such an extension would help offset the adverse effects of inflation and help correct the perception that the US charges what appears to be excessive prices for its training.

### The USSR and Security Assistance

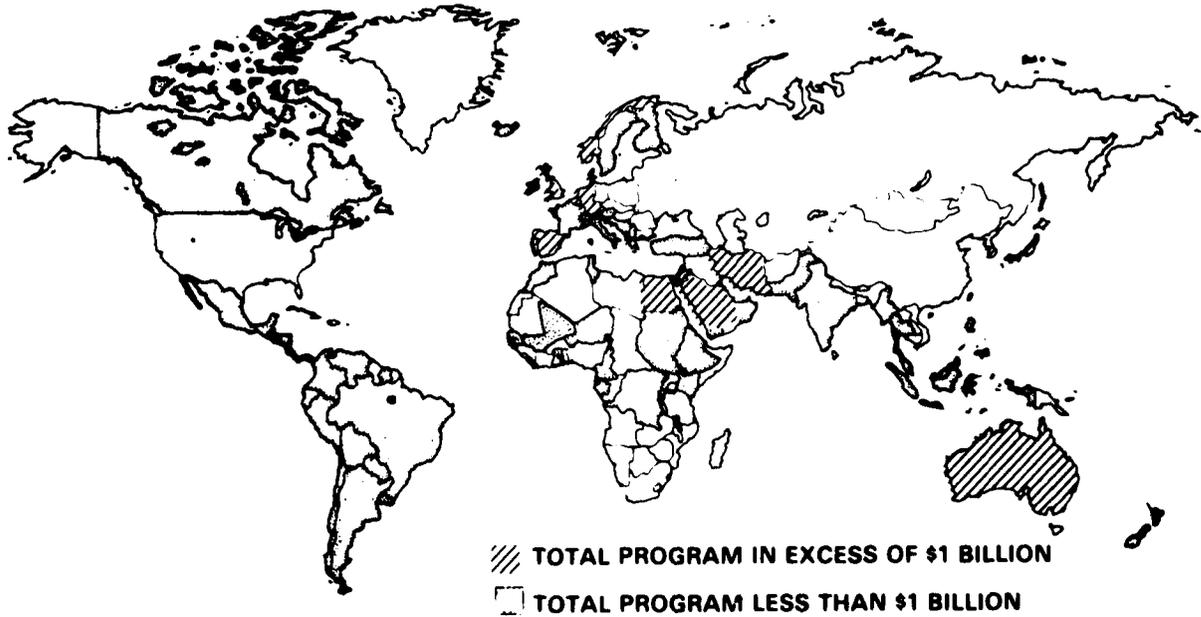
The value of security assistance across the entire range of political, economic, military, and social relationships has not been overlooked by the Soviet Union (Map III-1). In recognition of the role of security assistance as a low cost investment and instrument for achieving political objectives, the Soviet Union has substantially increased its assistance programs over the past decade. In 1980, the Soviets exceeded US arms sales (Map III-2) by at least an estimated \$4.5 billion and established a dominant lead in sales of major fighter, tank, and artillery weapon systems to the Third World. Soviet arms deliveries have kept pace with increasing

### USSR ARMS SALES 1974 - 1980



MAP III-1

### U.S. FOREIGN MILITARY SALES 1974 - 1980



MAP III-2

sales. In 1980, deliveries were the second highest on record as a result of sealift capability improvements, particularly the upgrading of cargo handling facilities at Nikolayev on the Black Sea.

As an adjunct to direct assistance efforts, Moscow uses its client states as conduits for arm transfers when deemed more appropriate to fulfill political objectives. Designed primarily to support guerrilla activity and influence areas such as Africa and Central America, the sales efforts of Soviet client states amounted to over \$2.0 billion in 1980. The Soviets are expected to continue to use direct and surrogate military assistance and arms sales to boost hard currency earnings and gain influence in Third World countries.

## **ARMS LIMITATION AGREEMENTS AND NEGOTIATIONS**

Equitable and verifiable arms control agreements can contribute to the achievement of security at reduced costs. While that goal remains the preferred outcome, the United States should operate from the principle that it can negotiate successfully with the Soviet Union only if it demonstrates clear and unmistakable evidence of national resolve to redress the military imbalance. It is important to stress for future negotiations that arms control is not a substitute for force modernization — arms control and other defense efforts should be mutually reinforcing.

### **Strategic Arms Reduction Talks**

The United States is reviewing its overall strategic arms policy in preparation for opening such talks in 1982. The Joint Chiefs of Staff believe that actions to redress the strategic imbalance through necessary force development should, where feasible, be complemented by equitable and verifiable arms limitations. Sound arms control measures could help bound the threat and render the costs of defense and the allocation of critical resources more manageable.

The Joint Chiefs of Staff are active participants in the review of US Strategic Arms Reduction Talks policy being conducted by the START Interagency Group. A significant portion of the study has been completed and the US has proposed to open negotiations as soon as possible in 1982.

### **Intermediate-Range Nuclear Forces Negotiations**

As part of NATO's 12 December 1979 Long-Range Theater Nuclear Forces Decision, the participating Ministers agreed to pursue a dual-track (force modernization coupled with arms control negotiations) to redress an imbalance that has continued to grow because

of increased Soviet deployment of intermediate-range nuclear missiles, particularly the SS-20. NATO modernization will consist of deployment in Europe of 108 PERSHING II missile launchers and 464 ground launched cruise missiles. Intermediate-Range Nuclear Forces arms control negotiations began between the US and the Soviet Union on 30 November 1981. In the context of these negotiations the United States has proposed to cancel plans to deploy PERSHING II and GLCM in exchange for dismantling and destruction of all Soviet SS-20, SS-4, and SS-5 missiles. The United States should continue to support full implementation of the dual-track NATO approach while recognizing that, in the absence of a meaningful arms control agreement, modernization is absolutely necessary to redress the growing imbalance.

### **Conference on Security and Cooperation in Europe**

The second review meeting of the Conference on Security and Cooperation in Europe (CSCE) convened in Madrid in late 1980 and extended through all of 1981. The US remains aligned with NATO's commitment to preserving a viable CSCE process in support of national security objectives and in the interest of improving regional stability in Europe. Agreement with the French proposed post-Madrid Conference on Disarmament in Europe (CDE) by the 35 CSCE signatories has coalesced around three of the four criteria established by the West, i.e., that Confidence and Security Building Measures (CSBMs) be politically binding, verifiable, and militarily significant. NATO has maintained that the fourth criterion, the application of CSBMs to the whole of Europe (including the USSR to the Urals) must be accepted by the Soviets prior to Western commitment to any post-Madrid conference. It remains in the US security interest to support the French proposal for a post-Madrid CDE if it embodies all four Western criteria and is specifically mandated by the Madrid meeting as part of an overall balanced, substantive concluding document.

### **Mutual and Balanced Force Reductions**

The Mutual and Balanced Force Reductions (MBFR) negotiations are alliance-to-alliance negotiations between NATO and Warsaw Pact. Our objective for these negotiations is to enhance stability through the reduction of military manpower in the central European reduction area to a common ceiling and the operation of Associated Measures designed to provide for the exchange of information necessary for verification of an agreement. The negotiations remain virtually stalemated. The principal negotiating issue is disagreement over manpower data for those forces present in the reductions area. The East maintains that it has fewer air ground personnel than Western estimates indicate. The

West believes that verification of any reductions and limitations is impossible without agreement on the base data.

### Multilateral Negotiations

The Joint Chiefs of Staff participate in numerous multilateral fora, including the Third United Nations (UN) Conference on the Law of the Sea (LOS) and UN and UN-related arms control and disarmament bodies. Throughout the Law of the Sea negotiations, the Department of Defense has stated its vital interest in preserving US navigational and overflight freedoms, including the right of unimpeded transit on, over, and under international straits overlapped by territorial seas and archipelagic waters.

The 40-nation Committee on Disarmament (CD) evolved from the smaller Conference of the Committee on Disarmament in 1978. Although its major focus has been on superpower competition and nuclear disarmament, the CD has involved itself with all aspects of arms control and disarmament, to include general and complete disarmament, nuclear nonuse assurances, radiological weapons, new weapons of mass destruction, nonuse of force, chemical weapons, and nuclear testing limitations such as the Comprehensive Test Ban (CTB). While the CTB negotiations between the UK, US, and USSR have been suspended pending US review, interest remains high among CD members for initiation of multilateral negotiations on a CTB.

### MULTINATIONAL FORCE AND OBSERVERS

The 1979 Egyptian-Israeli Peace Treaty (Camp David Accords) envisioned that the UN would extend the mandate for peacekeeping forces then in the Sinai to oversee the treaty's security provisions. Because of Soviet pressures the UN did not vote on the issue and the mandate of the peacekeeping force lapsed. In light of the inability of the UN to provide for the Sinai mission, a Protocol was added to the treaty which established the Multinational Force and Observers. This Protocol was signed by Egypt and Israel on 3 August 1981. When Israel returns the final portion of the Sinai to Egyptian control by 25 April 1982, the MFO will become operational. The MFO's mission will be to supervise implementation of the treaty annex on security arrangements and employ its best efforts to prevent violation of the terms.

The MFO is an international organization headed by

an American Director-General, who, with the approval of Egypt and Israel, appoints the military commander. The military commander is charged with the establishment of a headquarters in the Sinai and the exercise of operational control of the force and observers there. The United States will soon commit active military units to the MFO. Although all Services may be involved, it is anticipated that the Army will provide the majority of units and personnel involved with the MFO. Participation in the Sinai mission marks the first use of US military units as part of an international peacekeeping force.

To insure the broadest international participation, Egypt and Israel requested that the US recruit other participants for the MFO. Once a country agrees to participate (after being approved by Egypt and Israel), it becomes the responsibility of the MFO to negotiate the terms and conditions of participation.

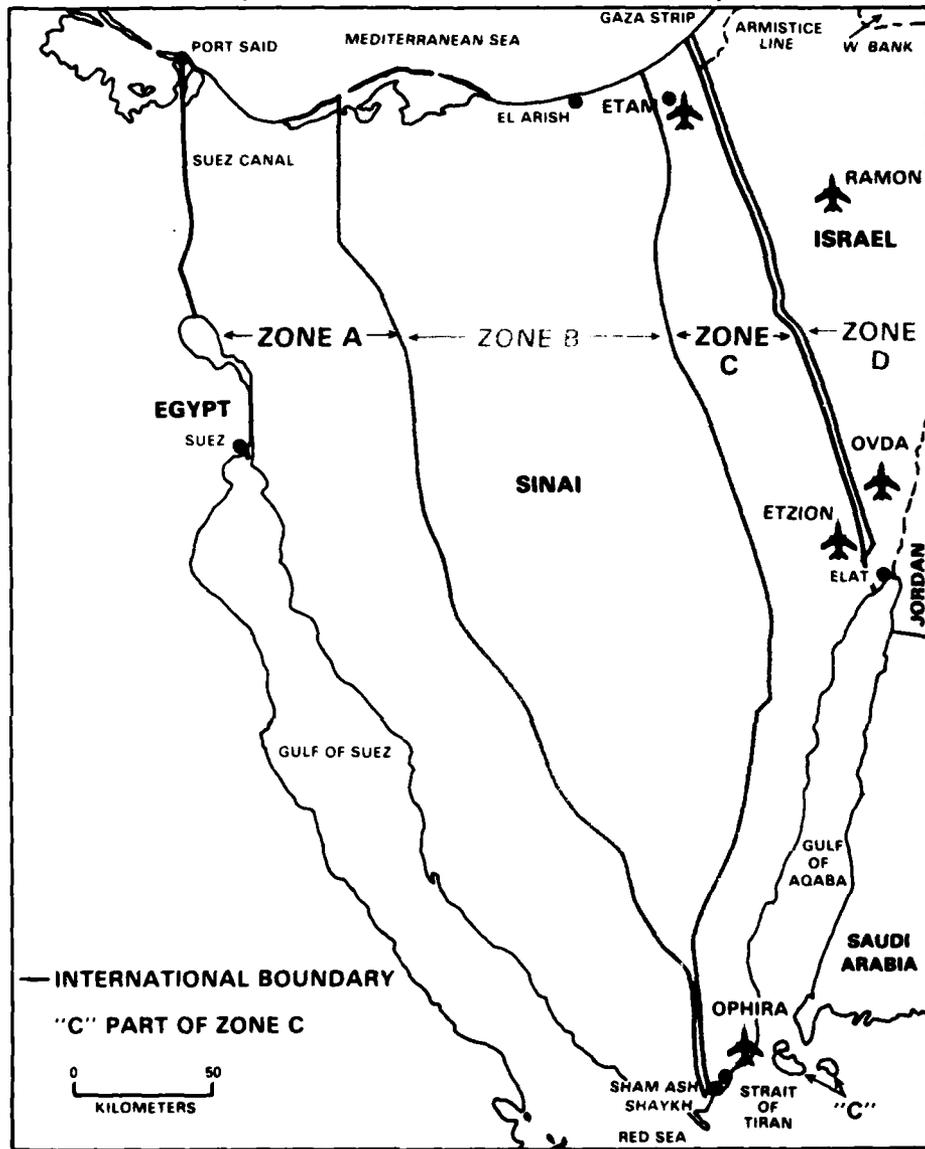
The MFO will be a 2,500-man force composed of three infantry battalions; logistical support, aviation, coastal patrol, and communications elements; and a group of civilian observers. Upon final agreement by Egypt and Israel, the composition of the MFO will be:

- United States:      Infantry battalion  
                                 Logistics support element  
                                 Civilian observers
- Fiji:                    Infantry battalion
- Colombia:            Infantry battalion
- Uruguay:             Transportation element

Other nations agreeing to participate in the MFO are Australia, France, Italy, New Zealand, The Netherlands, and the United Kingdom. Their contributions, currently being negotiated, are intended to round out the MFO with aviation, coastal patrol, communications, and headquarters elements.

The Protocol to the Egyptian/Israeli Treaty divided the Sinai into four zones (Map III-3). Egyptian forces and installations will be located in Zones A and B, while Israeli forces and installations will be located in Zone D. The MFO will establish checkpoints and observation posts throughout Zone C, conduct reconnaissance patrols in Zone C, insure freedom of navigation through the Strait of Tiran, and provide verification of authorized forces and installations in all zones. There is no termination date for the MFO as of this juncture.

# INTERNATIONAL BOUNDARY AND THE LINES AND ZONES IN THE SINAI PENINSULA (EFFECTIVE 26 MARCH 1982)



MAP III - 3

## APPENDIX A: UNITED STATES AND PRINCIPAL ALLIED FORCES

### INTRODUCTION

US strategic and general purpose forces provide diverse deterrent and warfighting capabilities for defense and furtherance of national interests. US strategic offensive forces consist of land-based ballistic missiles and bombers located principally in the United States and ballistic missile submarines at sea. A modest strategic defensive capability focuses primarily on warning to insure survival and responsiveness of strategic offensive forces and the NCA. General purpose forces, which possess both conventional and theater nuclear capabilities, are deployed overseas and in CONUS. Conventional forces are suited for employment in both limited contingencies and general war, and provide peacetime presence as well. Theater nuclear forces link conventional and strategic forces for deterrence across the spectrum of conflict.

While improving force readiness and sustainability, US forces must be equipped and modernized to keep pace with the threat and support national strategy. In FY 1983 and the following budget years, the security of the nation will require that balances be struck among strategic and general purpose force capabilities as well as modernization, force readiness, and force sustainability. Near- and mid-term threats demand US readiness and sustainability, while evolving technology and Soviet progress call for continued modernization to meet the foreseeable threat for the balance of this century.

### STRATEGIC NUCLEAR FORCES

US strategic nuclear forces are organized into a balanced TRIAD of complementary and independent systems. The TRIAD currently consists of 1,052 land-based ballistic missiles, 376 manned bombers carrying both air-to-surface missiles and gravity bombs, and 520 sea-based missiles in 32 submarines. These systems are complementary in that each element enhances the survivability and probability of success of the others and increases the capability for tailored retaliation. The independence of the elements helps hedge against emergence of a threat which could temporarily compromise a single element of the TRIAD.

#### Intercontinental Ballistic Missiles

ICBMs possess unique accuracy and responsiveness. They are highly reliable, readily retargeted, and virtually assured of penetration. For these reasons, ICBMs are suited for attack options which require time-urgent response, limited collateral damage, and high probability of success. As is the case with other legs of the

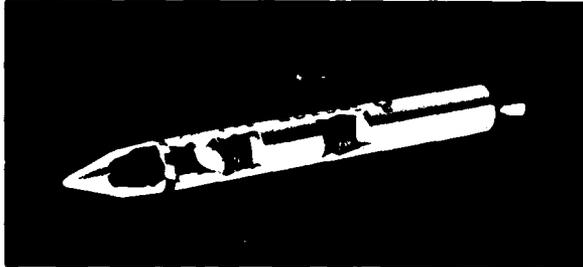
TRIAD, the ICBM component is capable of flexible employment. The US possesses 52 on-line TITAN, 450 MINUTEMAN II, and 550 MINUTEMAN III missiles (each of which carries three reentry vehicles in the only US land-based MIRVed system). Some MINUTEMAN II missiles are allocated to the Emergency Rocket Communications System for SIOP communications. In FY 1983 50 MINUTEMAN II missiles will be converted to MINUTEMAN III.

Over the years, ICBM upgrade modifications have resulted in alert rates well above 90 percent, redundant and secure communications, and comparatively low operations and maintenance costs. Three new or improved C<sup>3</sup> systems will be incorporated into MINUTEMAN launch control centers to improve existing communication links with higher command authorities: the Air Force Satellite Communications System (AFSATCOM), 616A Survivable Low Frequency Communication System, and Strategic Air Command Digital Network. These systems will reduce the transmission, receipt, and processing time for emergency action messages as well as the crew workload during time-urgent situations. Installation of the major part of the AFSATCOM and the 616A systems is scheduled for FY 1982, with installation and integration of the three systems into all MINUTEMAN launch control centers. In addition, the improved MK-12A RV, being installed on 300 MINUTEMAN III missiles, provides increased yield and fuzing options for greater hard-target kill capability.

The increasing vulnerability of the ICBM force to a Soviet first strike is the most serious problem facing US strategic nuclear forces. The recent decision to deploy the highly accurate ten-RV MX missile is an important step. While MX demonstrates US commitment to a long-term deterrent, aggressive research and development on more survivable basing modes must be sustained. The alternatives to be examined prior to reaching a long-term basing decision in 1983 include Deep Basing, Continuous Patrol Aircraft, and defense of MX with a BMD system. The Army and Air Force will work together on an integrated plan for the development of BMD as a long-term option for defense of ICBMs. Design and development work will focus on BMD approaches that are compatible with MX basing in silos as well as defended deceptive basing of MX.

Survivably based, MX will increase strategic stability by denying the Soviets the confidence to attempt a first-strike preemption of the ICBM leg of the TRIAD. The first of 100 programmed MX missiles will be operational

in 1986. The MX, which is planned to achieve full operational capability by the early 1990s, will help to redress US disadvantages in RVs, hard-target kill capability, and capability against time-urgent hard targets. A parallel



MX

program to phase out the 52 TITAN II missiles will be partially offset by the deployment of an additional 50 MINUTEMAN III missiles in MINUTEMAN II silos beginning in FY 1983. Forty MINUTEMAN III missiles replaced by initial deployments of MX will also be emplaced in MINUTEMAN II silos. Even with the TITAN II retirement, the deployment of MX and additional MINUTEMAN III missiles will arrest the downward trend in relative capability. These ICBM deployments cannot reverse the trend, however; other improvements are necessary.

### Sea-Based Missiles

The SLBM leg of the TRIAD is highly survivable and secure at sea and able to endure unsupported for extended periods. These qualities provide a high degree of deterrent stability, since for the foreseeable future the Soviet Union will be unable to neutralize US SLBMs in a first strike attack.

Forty-one nuclear powered ballistic missile submarines (SSBNs) were originally deployed with the POLARIS missile. In the 1970s, 31 of these ships were converted to carry the more capable POSEIDON missile. Of the remaining 10 POLARIS submarines, two have been deactivated and eight are in the process of conversion to attack submarines. The Navy's 31 active POSEIDON SSBNs are armed with the POSEIDON C-3 missile (19 ships) and the longer range TRIDENT I (C-4) missile (12 ships by early FY 1983). Each POSEIDON submarine has 16 SLBM launching tubes. The extended range of the TRIDENT I SLBM provides for larger submarine operating areas and shorter transit times from port to patrol areas. The TRIDENT I creates a greater ASW problem for the Soviets, allows faster positioning for a fully generated SSBN force, and provides the capability to attack the Soviet Union from all points of

the compass rather than on the fairly limited and predictable axes of attack from ICBM bases.



TRIDENT MISSILE

In 1982, OHIO, first submarine of the TRIDENT-class, will make its initial patrol and its sister ship, MICHIGAN, will begin sea trials. The TRIDENT submarine is designed for higher speeds and lower noise levels than its POLARIS and POSEIDON predecessors. Each TRIDENT submarine will have 24 SLBM tubes, initially



USS OHIO

armed with the TRIDENT I (C-4) missile. The TRIDENT SSBNs' shorter refit periods and lower overhaul requirements will increase patrol time of the SLBM element of the TRIAD. Ten TRIDENT SSBNs have been requested and nine fully funded through the FY 1982 Budget. The balance of funding for the tenth ship and funding for an eleventh have been requested in the FY 1983 Budget. The current strategic program would fund

15 TRIDENT SSBNs through FY 1987 at the rate of one per year. Multiyear procurement should result in a predictable, stable, and economical program.

The attributes of motion and submerged concealment, which account for SSBN survivability and endurance, have also limited the SLBM leg of the TRIAD. Motion and navigation of the SSBN have limited SLBM accuracy in the past, and submerged operations add uncertainty to NCA-to-fleet communications. Both limitations are addressed in the current strategic program.

A more accurate follow-on to the TRIDENT I (C-4) missile is in advanced development. The TRIDENT II (D-5) missile can provide accuracy sufficient to achieve hard-target kill and increase the effectiveness of SLBMs against the full spectrum of targets. The D-5 will be operational in 1989. To increase confidence in communications connectivity to the submarine force across the conflict spectrum, additional satellites will be procured for the fleet satellite communications program. These satellites will be hardened against electromagnetic pulse nuclear effects. EC-130 Take Charge and Move Out communications relay aircraft also will be EMP-hardened, and two more will be procured in 1982. In addition, a two-site extremely low frequency transmission capability will be installed in the north central United States by 1985. Accuracy of the TRIDENT II missile and enhanced communications to the SSBN force will ameliorate the most significant limitations of the sea-based leg of the TRIAD.

In addition, a nuclear sea launched cruise missile capability is to be deployed aboard submarines and selected surface ships beginning in FY 1984. The TOMAHAWK Land Attack Missile-Nuclear will achieve initial operational capability in that year. Some 400 are planned for deployment through the 1980s. Funds have been requested to back-fit LOS ANGELES-class SSN-688 and SURGEON-class SSN-637 attack submarines to fire SLCMs, initially through torpedo tubes and, in the 688-class, through an added vertical launch system as well.

### Strategic Bombers

While ICBMs provide time-urgent kill capability against even the hardest targets and SSBNs at sea feature great survivability, the manned bomber brings to the TRIAD flexibility beyond that of land-based and sea-based ballistic missiles. In addition, the bomber force shares certain advantages with missiles; it can challenge the hardest of targets and is highly survivable once airborne and outside terminal enemy defenses.

Part of the bomber's flexibility stems from the fact that crews can make directed target changes, choose

new flight routes, and accept responsibilities beyond the program capacity of missile computers. Alert bombers can be launched for survival, then executed, recalled, diverted, or dispersed as the situation unfolds and the NCA directs. Bombers provide the only strategic force capability to attack mobile, imprecisely located or otherwise transient targets. In some scenarios, bombers supported by in-flight refueling provide the only method of conducting heavy conventional bombardment in remote areas of the world within a day's time.

The current bomber force consists of 376 primary aircraft — 316 B-52s and 60 FB-111s. This force is supported by 36 training, backup, and test aircraft. Approximately 30 percent of the primary force is maintained on 15-minute alert, prepared to launch upon warning for force survival. B-52s and FB-111s both rely primarily on low altitude operations to penetrate enemy defenses. In a coordinated attack, defense suppression by ICBMs and SLBMs would aid bomber penetration.



FB-111



B-52 LAUNCHING ALCM

Historically, US strategic bombers have relied on a mix of highly accurate gravity bombs and somewhat less accurate short-range attack missiles to attack their targets. Beginning in September 1981, air-launched cruise missiles were delivered to Griffiss AFB, New York, to provide a B-52 capability. IOC will be achieved in FY 1983 when a full B-52 squadron is equipped with ALCM.

The extremely accurate ALCMs are able to destroy the hardest Soviet targets. The ALCM's 2,500km range enhances targeting and routing flexibility and can reduce bomber exposure to current and projected Soviet air defense systems. Approximately 3,000 ALCMs will be deployed by 1990. This force will increase the mass of an attack and severely stress the Soviet defensive system by forcing difficult low altitude intercepts and saturating it with large numbers of penetrators.

In the future, most Soviet interceptors are projected to have a look-down/shoot-down engagement capability. The B-52 presents a large target (compared to B-1B and ALCM), is more than 20 years old, and will have increasing difficulty in penetrating improving enemy defenses. In the near term, advanced offensive and defensive avionics are being installed in B-52 and FB-111 aircraft to counter enemy air defenses. In the mid- and far-terms, however, new penetrating bombers will be required to maintain the effectiveness of the bomber leg of the TRIAD.

To help redress the strategic imbalance and continue the capability for worldwide, rapid nonnuclear response, the US will deploy the first of 100 B-1B long-range combat aircraft by 1985, with IOC being attained in 1986. Primarily a penetrating bomber, the B-1B will have ALCM capability at IOC, less than one-one hundredth the radar reflectivity of the B-52 (less than that of the 1977 B-1A), and a more potent avionics and ECM capability. The B-1B will have lower maximum speeds than the B-1A due to redesign of the engine intakes and the swing wing. The B-1B (and B-52 also) will be hardened against EMP effects. In FY 1982, two FB-111 aircraft will be removed from the active inventory and all five squadrons of B-52Ds will be retired by the end of FY 1986. The near-term decrease in B-52s will be offset through deployment of ALCMs by FY 1985. Heavy conventional bombardment capability will be maintained by modifying B-52Gs to carry conventional weapons.



B-1

An aggressive research and development effort is in progress to reduce the risks associated with "stealth" technology in an Advanced Technology Bomber (ATB).

An early 1990s IOC is projected. With ATB deployed in significant numbers, the B-1B will be used more in a stand-off ALCM role as a replacement for the B-52. A sustained commitment to the bomber segment of the strategic program will insure the flexibility and effectiveness of the manned bomber into the next century.

## AERIAL REFUELING FORCES

The current force of 615 KC-135 aerial refueling tankers extends the range of US strategic bombers. SIOP support remains the primary tanker mission, and the force, which includes 128 aircraft operated by the Air National Guard and Air Force Reserve, is committed to that effort. With tanker support, US strategic bombers can respond rapidly to remote areas of conflict without reliance upon enroute ground refueling. These bombers can penetrate to their targets at low altitude for higher survivability, execute their missions, and, if required, exit at low altitude. Bombers can then recover at support bases and be retasked or held in reserve.



ANG KC-135 REFUELING F-4

Aerial refueling also supports general purpose operations, and can spell the difference between success and failure. US airlift support to Israel in the 1973 Mideast War, when many enroute bases and overflight rights were denied, vividly demonstrated the importance of having this capability. As a result, all US strategic airlift aircraft, virtually all fighter aircraft, and many reconnaissance and C<sup>3</sup> aircraft are in-flight refuelable and rely on tankers. Some KC-135s must be temporarily withdrawn from SIOP missions for support of other contingency operations.

In recognition of tanker requirements, two program enhancements are being pursued. First, 16 new KC-10 tankers will be delivered through 1983 and 40 more are programmed through 1986. These aircraft are tailored primarily for general purpose airlift and fighter deployment operations. The KC-10's increased cargo carrying capability will enhance the effectiveness of the airlift force. The KC-10 has a greater range and fuel off-load capability than the KC-135A, and thus enhances

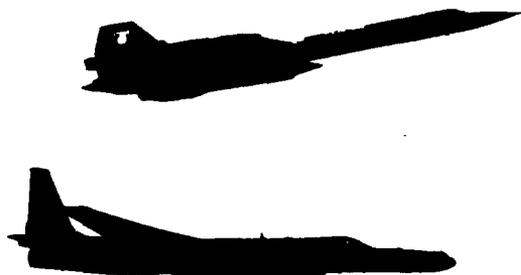
deployment of force packages to potential trouble spots. Second, a reengining program has been initiated for KC-135s. Modern engines, proven in commercial airlines, will increase the utility and survivability of the tanker force by permitting it to operate from shorter runways (approximately four times as many worldwide as at present), generate less noise and pollution, and increase overall tanker capability by 50 percent. Beginning in 1982, modification kits will be procured for 300 KC-135s over the next six years. This cost effective enhancement of equipment already in the Air Force inventory will extend KC-135 service life into the next century.



KC-10 REFUELING B-52

## RECONNAISSANCE FORCES

The US reconnaissance program consists of a unique blend of resources provided by each of the Services. These resources work in concert to provide strategic and tactical indications and warning data; assess foreign capabilities and intentions; develop and maintain data bases for planning; and support military operations in peacetime, crisis, and war. This complementary system provides the wide range of capabilities necessary to meet peacetime and wartime collection requirements. Reconnaissance resources consist of strategic and tactical standoff/penetration systems and other technical means. Strategic air-breathing reconnaissance systems include U-2R, SR-71, and RC-135 aircraft,



SR-71 AND TR-1

which carry a variety of sensors. These systems support reconnaissance requirements for national, strategic, and tactical users in peace and war.

Tactical aircraft standoff systems include Air Force and Marine Corps RF-4Cs; Army OV-1 and RV-1D MOHAWKS; Air Force C-130s, C-141s, and RC-135s; Navy EP-3s and EA-3Bs; and Army RU-21Hs. The primary existing ocean surveillance system is the P-3 aircraft. These aircraft respond to requirements for surveillance of foreign merchant vessels and surface/sub-surface combat units in all ocean areas of the world.

Planned improvements for airborne reconnaissance systems include additional TR-1, U-2R, and SR-71 aircraft; RF-4C SLAR enhancements; and RF-4C TEREK improvements. TR-1 aircraft will carry either the Advanced Synthetic Aperture Radar System and SIGINT sensors or the Precision Location Strike System which, although a strike system, is inherently capable of ELINT data collection. These sensors will be connected by data link to ground elements for near-real-time exploitation.

The six active and eight Air National Guard squadrons of RF-4Cs equipped with photo and infrared systems represent the majority of the penetrating assets currently available to support theater commanders directly. Three Air National Guard squadrons are designated as Rapid Reactor units and are equipped with infrared systems. The Marine Corps has a single squadron of RF-4Bs, and the Navy is procuring 48 photo and infrared pods for use on the F-14 fighter.



AIR NATIONAL GUARD RF-4Cs

## STRATEGIC DEFENSIVE SYSTEMS

Strategic defense entails both active and passive measures for defending the United States against air, ballistic missile, and space attack, and to protect US interests against hostile events in space. Active defense connotes the use of forces to engage and neutralize enemy air and space systems. Passive defense consists of the capability to warn of and otherwise mitigate the effects of attack; it includes such measures as warning and attack assessment, hardening and sheltering, and

other techniques to enhance the survivability of US forces, C<sup>3</sup>, and population. The United States and Canada share responsibilities for aerospace defense of the North American continent under terms of the North American Aerospace Defense Treaty.

### **Tactical Warning and Attack Assessment**

The United States maintains only a modest active defense capability, directed exclusively against air-breathing threats. Current US strategic defensive capabilities focus primarily on tactical warning that an attack has been initiated and on assessing or characterizing the magnitude, objectives, and timing of the attack. The prime objectives are to insure the survival of the NCA and forces, and provide the NCA with information necessary for selection and execution of an appropriate response.

To decrease the likelihood of sensor-generated false alarms and subsequent overreaction, ballistic missile warning requires the sensing of missile attack by two distinct technologies. Space-based infrared sensors aboard three satellites detect the launch of attacking missiles. The system covers SLBM and ICBM launch areas. Survivability is being enhanced through EMP hardening of satellites and deployment of mobile ground processing terminals. In addition, a successor is being developed for replacement of expended satellites. Radar is the second phenomenon for sensing ballistic missiles enroute. Ground-based radars provide confirming information, limited raid counts for attack sizing, and impact area prediction for attack assessment. Current radars include three Ballistic Missile Early Warning System (BMEWS) sites in Greenland, Alaska, and the United Kingdom; the Perimeter Acquisition Radar Attack Characterization System radar in North Dakota; Precision Acquisition of Vehicle Entry and Phase Array Warning System (PAVE PAWS) radars in Massachusetts and California; FPS-85 spacetrack radar in Florida; and one FSS-7 gap-filler in Florida. BMEWS radars are primarily focused on the ICBM threat, while the other systems are deployed primarily to detect SLBM launches. Two additional PAVE PAWS radars are included in the current program to cover southeast and southwest of CONUS.

Today the US has less tactical warning and attack assessment capability against an airbreathing threat than against ballistic missile or space attack. Since the emergence of a large ballistic missile threat in the mid-1960s, US efforts against the bomber threat have been relatively modest. US atmospheric surveillance systems have been configured primarily to control access to North America. Growing Soviet bomber and air-to-surface missile capabilities, however, require a reexamination of this approach. The Soviets are continuing to

deploy the intercontinental-range BACKFIRE bomber, have a new bomber under development, and are projected to deploy long-range cruise missiles. The Soviet SLCM also requires close monitoring, although it has a short range and is currently targeted primarily against surface ships.

The limitations of current US atmospheric warning systems provide exploitable opportunities for Soviet air attack. The Distant Early Warning line, located astride the most direct polar approach to CONUS, provides warning of aircraft attack at high or medium altitudes. These 31 radars, however, have gaps in low altitude coverage, are based on obsolete 1950s technology, and are increasingly difficult and costly to maintain. An upgraded DEW line of state-of-the-art microwave radars is proposed to rectify these deficiencies, with phased development beginning in 1983.

Looking primarily south and seaward, the Joint Surveillance System supports peacetime surveillance and control of CONUS airspace. Composed of 46 Federal Aviation Administration and military radars jointly used for economy, the system is limited to line-of-sight coverage, has large gaps at low and medium altitudes, and is unprotected against electronic countermeasures. These radars will feed information to seven new Region Operations Control Centers (ROCCs): four in CONUS, one in Alaska, and two in Canada. The ROCCs; however, provide only a peacetime airspace control capability and a means of training interceptor aircrews. They would not be survivable in nuclear conflict.

During crisis or wartime, command and control of air defense will be exercised by E-3A Airborne Warning and Control System aircraft. Thirty-four AWACS aircraft have been programmed and 32 aircraft have been funded through FY 1982 for general purpose support worldwide and CONUS air defense. To further improve CONUS defense, additional AWACS have been requested in the FY 1983 Budget. While AWACS aircraft can provide low altitude coverage, they are too few and too costly to operate as a full time tactical warning fence during peacetime. Also, overseas deployments reduce peacetime availability of AWACS for CONUS air defense. Improved alert postures, more effective operational basing, and random patrols are being evaluated as means to improve the CONUS defense capability of AWACS forces. The E-3A AWACS can provide survivable command and control for air defense forces during periods of increased alert.

The strategic defense program also includes procurement of over-the-horizon backscatter (OTH-B) radars, which would be able to look as far as 1,800 miles east, west, and south of CONUS. These OTH-B and other air

defense initiatives are designed to improve bomber and cruise missile warning capabilities while reducing annual operating costs.

### **Air Defense**

In 1981, the NORAD Treaty was renewed for five years. The current Canada-US policy on North American air defense affirms the need for a system to provide tactical warning and attack characterization, limit damage to strategic retaliatory forces and C<sup>3</sup> systems, and control access to continental airspace. An improved capability for active air defense is an essential component of such a system. Once surveillance systems indicate a potential threat, air defense aircraft must be launched to intercept, identify, and characterize the attack and, if directed, engage it.

Aircraft currently assigned to strategic defense include 153 F-106s, 90 F-4s, 36 F-101s, and 18 F-15s operated by Active Air Force and Air National Guard units. The F-101s operated by the Air National Guard will be replaced with F-4s in FY 1982. Most of the remaining aircraft are more than 20 years old and have range, fire control, communications, and armament limitations which reduce their effectiveness against a low altitude air attack. Interceptors assigned to strategic defense are augmented in crisis or war by other Air Force, Navy, and Marine Corps aircraft not committed elsewhere. F-15 aircraft will be assigned to a dual air defense/antisatellite role as an initial step toward interceptor force modernization. Additional squadrons of air defense F-15s will be assigned to improve US capabilities to deter atmospheric attack; active force F-106s will then be retired. New air defense and AWACS aircraft in adequate numbers would prevent delivery of a large portion of Soviet long-range bomber and cruise missile megatonnage.

### **Space Surveillance and Defense**

Space surveillance is maintained by a system of 29 dedicated, contributing, and collateral sensors. Space-track surveillance is directed toward space object identification and satellite attack warning and verification; in the future, it could assist in antisatellite targeting. A catalogue of the more than 4,000 man-made objects now in space is constantly updated in order to track the many satellites crucial to US warning and communications; those performing the same functions for the Soviet Union; and new objects in space, some of which could be elements of the Soviet ASAT capability.

Today the United States possesses no operational ASAT and trails the Soviet Union in development of a low altitude space interceptor. The US, however, is continuing to pursue an ASAT development program vigor-

ously. The program consists of miniature vehicles, launched from an F-15 interceptor and propelled by a two-stage Short-Range Attack Missile (SRAM). An operational system using F-15s is programmed for the mid-to-late 1980s. A US ASAT system will confront the Soviets with both a deterrent force and a counter-threat retaliatory system against their satellites.

While the Soviets have not yet demonstrated a high altitude ASAT capability, such a capability is forecast. US high altitude satellites currently face other threats, such as counter C<sup>3</sup>, ECM, and high altitude EMP.

### **Ballistic Missile Defense**

The US has had no deployed BMD system since the one SAFEGUARD site, permitted by the ABM Treaty, was closed in 1976. However, a vigorous BMD R&D program has been maintained. The selection of BMD as one of the three options to be considered in future ICBM deployment decisions has created increased interest in BMD capabilities. The BMD program acts as a hedge against Soviet treaty abrogation and unconstrained offensive threat growth.

The BMD program has emphasized the development of two concepts, Low Altitude Defense (LoAD) and overlay defense, plus advancement of the BMD technology base to support future system concepts. Both the LoAD and overlay defense have potential for improving US ICBM survivability and countering the Soviet threat.

The current strategic program directs the Army to provide a BMD option for defense of ICBMs to support a long-term MX deployment decision. The current LoAD preprototype development program is being accelerated within the constraints of the ABM Treaty.

### **Civil Defense**

Civil defense can play an important role in national security by enhancing the survivability of the American population and leadership in the event of attack and providing a basis for eventual national recovery. Civil defense is also an important factor affecting international perceptions of the US-Soviet strategic balance. Civil defense should provide for enhanced protection of population and essential industry.

The US civil defense program currently provides planning for protection of the civilian population in the event of a nuclear attack, to include warning, evacuation, sheltering, information, and radiological defense. The current program is modestly funded and designed to permit a measured acceleration of civil defense preparedness under crisis conditions. Near-term measures

include population relocation planning and development of a nationwide infrastructure capable of executing these plans

The Federal Emergency Management Agency is responsible for the US civil defense program. The Department of Defense exercises oversight of policies and programs to assist in achievement of national civil defense objectives. The integration of military and civil efforts is an essential feature of the civil defense program, and FEMA, along with other Federal agencies, participates in JCS exercises to test coordination plans.

## THEATER NUCLEAR FORCES

US theater nuclear forces make a significant contribution to deterrence on a worldwide basis, but play a particularly important role in Europe. NATO's deterrent strategy and warfighting capabilities hinge on the effectiveness of the NATO triad of conventional, theater nuclear, and strategic nuclear forces. Under this concept, theater nuclear forces provide direct defensive capability to supplement the contribution of conventional forces, permit deliberate escalation if needed to raise the costs and risks of aggression, and provide a credible link to the deterrent capability provided by strategic nuclear forces.

The United States and the Soviet Union, together with their NATO and Warsaw Pact allies, deploy land-based and maritime theater nuclear systems with a wide range of capabilities. Although US and NATO deployments have remained fairly stable over time — and in some instances have actually declined — the Soviet Union has continued to expand and modernize its TNF at a rapid pace. Soviet efforts have already turned the TNF balance in Europe to the Warsaw Pact's favor.

US forces are equipped with a mix of nuclear delivery systems, many of which are also capable of delivering conventional munitions. For battlefield targets, artillery-fired atomic projectiles (AFAPs) are available for 8-inch and 155mm howitzers. Targets beyond the immediate battle area can be struck with the LANCE missile and dual-capable aircraft such as the F-16, F-4, A-4, A-6, and A-7. Systems suitable for still more distant targets are the PERSHING IA missile and land-based F-111. The majority of these forces are committed to NATO. Nuclear defense systems, deployed primarily in support of NATO, include atomic demolition munitions and nuclear NIKE HERCULES.

The majority of the non-US medium-range TNF capability in NATO is provided by over 400 allied dual-capable tactical fighters and medium bombers, including coproduced F-104 and F-16 aircraft and European-built delivery systems such as the British VULCAN

bomber and JAGUAR fighter bomber and the multinational TORNADO fighter bomber.

NATO countries also provide other TNF capabilities, including nuclear-capable howitzers and short- and medium-range missiles. The Federal Republic of Germany (FRG) deploys the PERSHING IA missile, and the FRG and other NATO nations possess LANCE and the older HONEST JOHN. S-3 IRBMs and mobile PLUTON launchers give France a ballistic missile capability.

In addition, US and Allied theater nuclear systems deployed in Europe are supplemented by strategic forces. For example, US POSEIDON RVs are committed to the Supreme Allied Commander, Europe, for the NATO theater. The United Kingdom and France also maintain SLBM forces, but only the British missiles are committed to NATO. The UK force consists of 4 submarines, each carrying 16 POLARIS missiles. Beginning in the 1990s, the UK plans to deploy the TRIDENT submarine (constructed in the UK) and its SLBM system as a replacement for POLARIS. The French possess 5 SSBNs, each with 16 missiles; they will add a sixth submarine in 1985.

Although most US TNF are allocated to NATO, major capabilities are deployed outside that theater, primarily in a maritime role. Dual-capable systems on ships and naval aircraft provide nuclear capabilities for antiair, antisubmarine, and antisurface operations as well as strikes against land targets.

The US TNF capability in the Pacific has steadily eroded over the past 15 years despite a Soviet buildup. Increased Soviet deployments of nuclear-capable land, air, and naval forces pose a significant threat to US interests in the Pacific and Indian Ocean areas.

TERRIER SAM provides shipboard capability to conduct close-in nuclear antiair operations. TERRIER, however, has only limited effectiveness against Soviet BACKFIRE aircraft equipped with AS-4 antiship cruise missiles. The SM-2 nuclear missile is scheduled to begin replacing TERRIER in 1986. The SM-2 will provide an enhanced capability against the entire spectrum of air threats and have improved safety and command and control features.

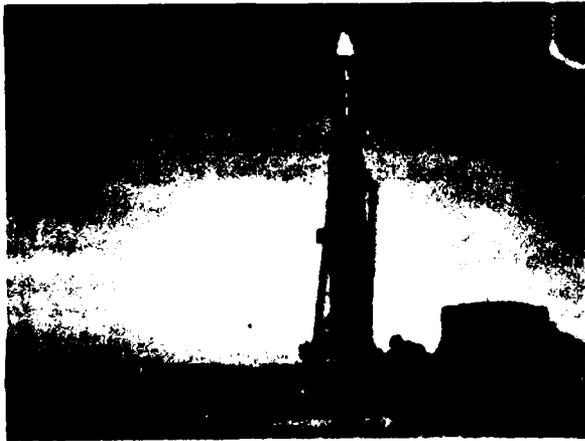
Weapons for nuclear ASW include rockets deployed on surface ships (ASROC), submarine-launched rockets (SUBROC) deployed on submarines, and B-57 nuclear depth bombs delivered by US S-3, P-3, and SH-3 aircraft and some allied helicopters and maritime patrol aircraft. SUBROC is technologically obsolete and programmed for phaseout. An ASW standoff weapon, designed for surface ship or submarine launch, is in the research and development phase.

A-4, A-6, and A-7 aircraft equipped with tactical bombs provide a nuclear capability against ships and, at present, the only naval theater nuclear capability to strike critical targets ashore. A-6 aircraft have an all-weather capability, and both A-6s and A-7s can operate at combat radii in excess of 1,000km with carrier-based tanker support. The effectiveness of both aircraft in carrying out their nuclear roles is high, but will decline as Soviet air defenses shipboard and ashore continue to improve. Introduction of the new dual-capable FA-18 as a replacement for the A-7 will modernize carrier-based capabilities for nuclear and conventional missions.

### TNF Modernization

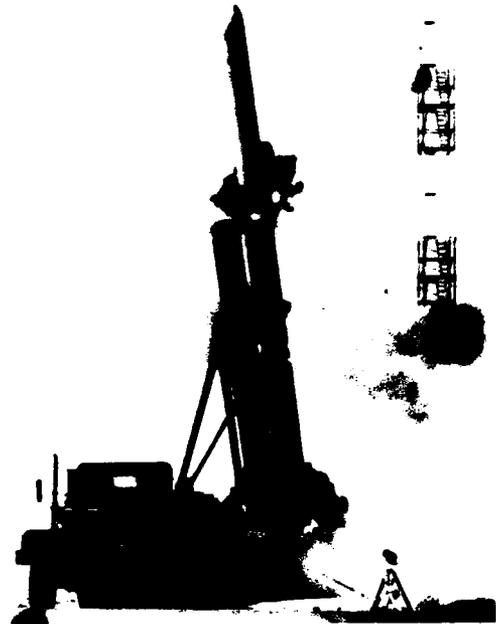
The continued modernization and strengthening of all Soviet theater nuclear and conventional forces require the modernization of NATO and worldwide US TNF. Soviet deployment of the SS-20 mobile missile in Europe has been particularly troubling to NATO and has caused the Alliance to focus on modernizing its own long-range theater nuclear capability (LRTNF) (longer-range INF). NATO modernization is not designed to match the Warsaw Pact system by system, but to provide a significant long-range capability that expands the possible responses to aggression.

In December 1979, NATO responded to the Soviet LRTNF buildup in Europe by endorsing the deployment of 108 US PERSHING II ballistic missile launchers to the Federal Republic of Germany and 464 US ground-launched cruise missiles to five European countries. This decision was reconfirmed by the Alliance in October 1981. The PERSHING II missile, which is scheduled to be deployed in FY 1984, will have improved accuracy as a result of using a maneuvering RV equipped with terminal guidance radar. GLCM will have an operational range of about 2,500km and accuracy sufficient to destroy the hardest enemy targets. GLCMs are suitable



PERSHING II

for attacking some fixed targets now covered by dual-capable aircraft, and thus may enable SACEUR to shift additional aircraft to conventional roles. The introduction of GLCM also will allow the use of more aircraft for nuclear strikes against mobile targets not suited to missile targeting. The IOC for the first GLCM flights in Europe is scheduled for early FY 1984 in the UK.



GLCM

The combined force of modern dual-capable aircraft, GLCM, and PERSHING II will help to meet NATO's near-term need for LRTNF. Supported by adequate C<sup>3</sup>, this combination will enhance force survivability, penetration, and tactical flexibility, and provide NATO attack options to meet aggression on whatever level is necessary, including attack on forces based in the western USSR. The US is improving TNF C<sup>3</sup> networks with an improved high frequency radio system and ultra high frequency (UHF) satellite ground terminals to insure responsiveness to US national and NATO requirements.

The Army is developing two new AFAPs, which have also been adopted by the Marine Corps. The new 8-inch AFAP (W-79) is in production and will have approximately twice the range of the old round (29 vice 14km), ballistic similitude with conventional rounds, improved accuracy, decreased preparation time, and enhanced safety and security features. The W-79 is an enhanced radiation (ER) weapon with increased effectiveness, particularly when attacking armor, which will allow it to be safely used closer to friendly troops and civilian popula-

tion centers. Initial deployment of the 8-inch AFAP will be limited to US territory.

The improved 155mm AFAP (W-82) is currently in engineering development. The new round will have approximately double the range (30 vice 14km); ballistic similitude with conventional rounds; and enhanced safety, security, and command and control.

The LANCE tactical surface-to-surface missile provides an all-weather capability for attacking high-value targets beyond the range of cannon artillery. LANCE currently has a fission warhead, however, a new warhead now in production incorporates an ER option. LANCE deployment provides a significant increase in military capability, safety, and security over the HONEST JOHN and SERGEANT weapons it replaced.

Much of the US theater nuclear capability is currently provided by aircraft which can be employed in both nuclear and conventional configurations. With the exception of 252 F-111s and 256 A-6s, these aircraft lack adequate low-level navigation and weapons delivery capabilities for operations at night and in adverse weather. These capabilities will improve as TORNADO and other NATO aircraft programs are fully implemented in the 1980s, and US F-16s and F/A-18s are equipped with improved attack sensors.

The TORNADO will have the capability to be employed in the nuclear strike role and will incorporate advanced systems to provide effective all-weather, low-level penetration. The strike radius of the TORNADO approximates that of the US F-16 and will be significantly greater than that of the F-104 fighter which stands nuclear alert in central Europe today. F-104s in several NATO air forces will be replaced in the 1980s by coproduced F-16s, providing improved capabilities against a range of fixed and mobile targets. F-16s will complement the TORNADO and existing nuclear-capable aircraft.

The A-4 and A-6 aircraft have provided the Marine Corps with a nuclear-capable delivery system during the past two decades. In the late 1980s, the AV-8B is scheduled to replace the A-4. Marine Corps A-6s will continue to provide low-level, all-weather, conventional and nuclear delivery capabilities. The number of Marine dual-capable aircraft will significantly increase when the F/A-18 fighter/light attack aircraft enters the inventory in FY 1983, replacing the nonnuclear-capable Marine F-4 force.

The TOMAHAWK nuclear land attack cruise missile is launched from either submarines or surface ships. The TLAM-N will provide a worldwide maritime nuclear capability and additional nuclear options in many

regions where US forces are not now deployed.

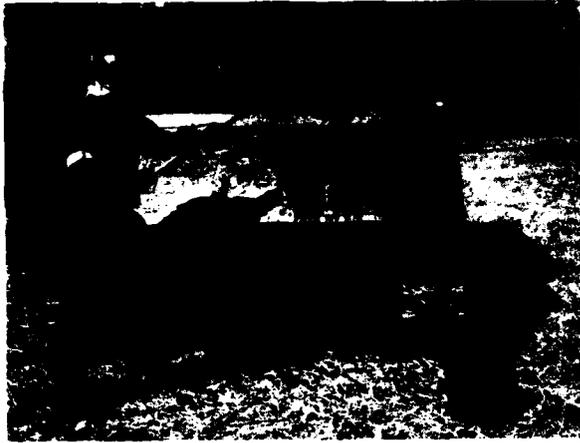
## **CHEMICAL WARFARE AND NUCLEAR/BIOLOGICAL/CHEMICAL DEFENSE**

US chemical warfare objectives are fourfold: to deter the use of chemical weapons against the US and its allies, and, should deterrence fail, retaliate with chemical weapons to encourage cessation of CW at the lowest possible level of intensity; to expedite modernization of the US deterrent retaliatory stockpile with binary chemical munitions, in order to establish credible and effective nonnuclear deterrence and gain leverage in the area of CW arms control; to be able to conduct sustained operations in a nuclear, biological, or chemical environment; and to support the eventual objective of concluding a verifiable arms control agreement prohibiting chemical weapons.

The US has attempted to conclude an effective chemical weapons arms control joint initiative with the Soviet Union, but little progress has been achieved. The Soviets have remained intransigent on the development of acceptable provisions for verification. The 1979 Sverdlovsk anthrax incident and recent US evidence indicating the use of mycotoxins in Southeast Asia have increased concerns over verifiability and compliance mechanisms of the Biological Weapons Convention (BWC). Continuing reports of extensive use of lethal CW/BW agents in Laos, Kampuchea, and Afghanistan are of major concern to the US and other parties to the 1925 Geneva Protocol and the BWC. The US is continuing to provide evidence to the UN and to other governments which may assist in further linking the Soviets to a breach of the BWC and Geneva Protocol.

In the absence of an effective international agreement to remove existing and future threats of CW, the US must acquire and maintain an effective CW deterrent retaliatory capability. A Soviet chemical attack would seriously degrade all aspects of US and allied combat operations. To deter such an attack, the US has moved toward CW retaliatory stockpile modernization by appropriating funds to construct and equip a binary production facility.

The binary munitions, which could be produced in the near term, are the 155mm artillery projectile and the BIGEYE spray bomb. Delivery systems, other than aircraft, which could provide US forces an added range capability are the Multiple Launch Rocket System, Corps Support Weapons System, and cruise missile. Production of binary munitions would enhance our deterrent capability.



CW DECONTAMINATION

The CW defensive posture of US forces has improved the last few years with the help of increased appropriations. The US has implemented a major procurement and R&D effort directed primarily to rapid improvement in US defensive capabilities. An extensive program for medical support is underway and efforts are continuing to improve individual/collective protection and decontamination capabilities.

Our NATO Allies are taking positive steps to improve their CW defense capabilities for tactical forces. In addition, the alliance must consider measures to defend against chemical attacks on C<sup>3</sup> nodes, ports, airfields, and logistics facilities.

### COMMAND, CONTROL, AND COMMUNICATIONS (C<sup>3</sup>)

To meet the requirements of deterrence and force employment, C<sup>3</sup> systems capabilities must be aligned with force capabilities. This requirement implies that C<sup>3</sup> systems must not only support an initial retaliatory response, but also survive and endure through a protracted period of conflict.

Because of the complexity in insuring that C<sup>3</sup> systems are developed in consonance with the forces they support, special planning will need to be conducted in cross-program, cross-Service, cross-command, and international systems. The Joint Chiefs of Staff will develop guidance for those programs.

C<sup>3</sup> systems are categorized as strategic, theater/tactical, and defense-wide. Strategic systems are designed to provide a secure and survivable means for directing strategic forces under nuclear conflict conditions. Theater/tactical communications should provide reconstitutable, secure, and interoperable systems for nonnuclear conflict. Defense-wide systems provide in-

formational, navigational, and long haul/bulk communication to all forces.

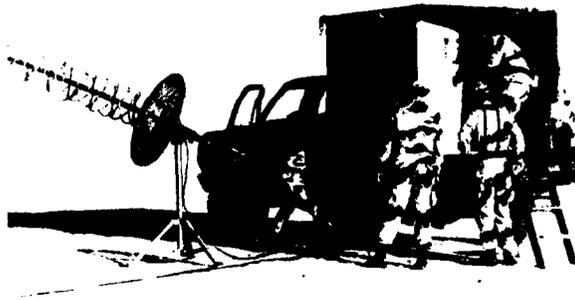
### Strategic C<sup>3</sup> Facilities

Strategic C<sup>3</sup> systems link the NCA and CINCs to forces in the field. Warning sensors and connectivity communications provide the means for detecting and forwarding attack information to command authorities. Command centers and connecting communications systems provide the means for decisionmaking and dissemination of decisions to operational forces. Many existing C<sup>3</sup> systems, including equipment used for warning, attack assessment, and NCA conferencing, are vulnerable to high altitude nuclear effects. To reduce communications uncertainties in trans- and post-attack periods, new systems must be incorporated into the C<sup>3</sup> program.

Survivability of the NCA during and after a nuclear attack must be guaranteed. While the National Emergency Airborne Command Post (NEACP) is the most survivable element of the National Military Command System, it must land for servicing after 72 hours of flight. Since the NEACP has limited airborne endurance, the Mobile Command Center (MCC) should be developed to provide the connectivity endurance necessary during a protracted nuclear conflict. The MCC would have the capability to support the NCA, including direction of the strategic forces. Funding has been requested in the FY 1983 Budget to develop a prototype MCC, which will be evaluated to insure that it can provide required connectivity and battle staff support. Additionally, a new communications satellite system, MILSTAR, is being designed for service in the 1980s. Operating at extremely high frequencies, MILSTAR will have improved performance against nuclear effects, better antijam performance, and increased physical survivability features. Strategic and tactical ultrahigh frequency continuity will be upgraded with the deployment of additional fleet communications satellites in FY 1985.

### Tactical and Mobile C<sup>3</sup> Systems

US and allied tactical C<sup>3</sup> systems must be as survivable as the forces they support and capable of assuring secure tactical connectivity during conventional, nuclear, chemical, and biological attack. These objectives can be achieved through the proper combination of hardening, redundancy, improved mobility, dispersal and chemical/ biological protection. C<sup>3</sup> systems which survive must also allow interoperability among tactical US systems, tactical US and allied systems, and US tactical and long haul/bulk communication systems. The modification of existing C<sup>3</sup> systems to achieve interoperability is expensive, but an interoperable network



SATELLITE COMMUNICATOR

of C<sup>3</sup> systems is essential for successful joint and combined operations. Additionally, there must be a continuing effort to upgrade and replace existing equipment with state-of-the-art, secure, jam-resistant, and low-probability-of-intercept communications systems.

A number of programs are underway to improve US tactical command and control (C<sup>2</sup>) systems. The Joint Interoperability of Tactical Command and Control System Program is developing the interface design standards for use by tactical command and control systems during joint and combined military operations. These efforts are being directed toward the development of standards compatible and interoperable with US systems, as well as those of NATO and other allied nations.

VHF/UHF tactical voice antijam communications must be upgraded to survive in a hostile electromagnetic environment and maintain joint interoperability. A program is being pursued to provide this interoperability through modification of Navy (AN/ARC-182 and AN/WSC-3) and Air Force (HAVE QUICK) radios.

The Air Force is procuring the German developed EIFEL/DISTEL system for tactical air offensive command and control. The installation of this system in US tactical operations centers in Europe will significantly improve interoperability with allied forces. Initial operation of this system began in 1981.

Single Channel Ground to Air Radio Set (SINCGARS) is an Army program to provide lighter, more reliable, secure, jam-resistant tactical radios, with a significant increase in available frequencies and new electronic counter-countermeasures (ECCM) to reduce the effects of enemy ECM. Funds have been requested in the FY 1983 Budget to support the developmental and operational testing of candidate radios. Initial production of this urgently needed radio is planned for FY 1983.

The Position Location Reporting System is a joint Army-Marine program to provide tactical commanders with a continuous picture of deployed forces on the battlefield. This is done automatically and on a near real-time basis regardless of weather, terrain, or geographical location. Initial operation is planned for the mid-1980s.

US forces need mobile/portable communications with an automatic trunking and switching capability. Acquisition of TRI-TAC equipment and continued development of the Theater Joint Multichannel Switching System will help resolve this problem. The Joint Crisis Management Capability will provide forward deployed, mobile, crisis/contingency communications equipment for field commanders.

Initiatives are underway to improve C<sup>3</sup> and intelligence integration. The Joint Tactical Fusion Program is an Army/Air Force effort to develop an automated system capable of correlating multi-source input from intelligence sensors to provide commanders an automated display of the battlefield. This system will allow a timely, meaningful exchange of data based on the tactical commander's priorities, and will be compatible with joint standards for interoperability.

### **National And Defense-Wide Support Systems**

Effective Defense-Wide communications systems are essential for the command and control of strategic and tactical/theater forces, as well as their logistic, intelligence, navigation/positioning, and meteorological support.

The fixed facilities and satellite systems of the Defense Communications Systems (DCS) are vulnerable to sabotage and conventional and nuclear attack. Ongoing improvement programs will enhance the survivability of DCS systems by providing increased redundancy and mobile restoration assets.

High frequency communications are being reemphasized for both the DCS and Service long-haul communications as adaptive and antijam technology offers improvements in capability and reliability. Logistically unsupportable equipment is being replaced in parallel with development of follow-on equipment.

Upgrades to nonsatellite digital systems have begun in southern Europe and will be extended throughout the world. The worldwide conversion from analog to digital transmission will result in improved reliability, quality, and security.

Satellites provide global communications for command and control of mobile forces and reliable theater communications unconstrained by terrain features. In particular, satellites provide the NCA with the capability for direct global communications to combat forces and real-time reports from executing forces. The development and employment of Defense Satellite Communications System Phase III (DSCS III) will reduce satellite vulnerability to those threats. The DSCS III will support increased user requirements, sustain satellite services through the 1980s, and provide service under jamming conditions.

## MILITARY SPACE ACTIVITIES

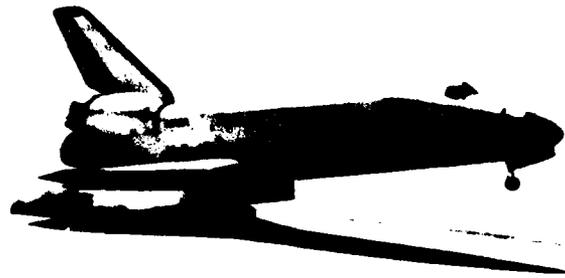
The US currently employs orbital systems for a wide range of military functions, including communications relay, navigation, environmental monitoring, mapping and geodesy, threat surveillance, and strategic and tactical warning. Because the use of space is critical to military operations, the US is developing a low altitude ASAT system which can be used to deter Soviet attacks on US satellites and, if necessary, deny the Soviets the wartime use of selected satellites.



ASAT

With the successful flights of the space shuttle Columbia in 1981, the US entered the era of reusable launch vehicles. The four programmed shuttle orbiters will provide an increased payload launch capability and, in the long-term, direct on-orbit access to previously deployed low altitude satellites. At present, sensor systems in low-earth orbit must be abandoned when maneuver fuel and other consumables are exhausted or the satellite malfunctions. By allowing replenishment, repair, or recovery and re-use of satellites, the shuttle will help to extend the operational life of these costly assets.

Although the shuttle is planned to replace expendable launch vehicles, program delays have required additional TITAN III booster production to meet launch re-



SPACE SHUTTLE

quirements during the transition period. In addition, DOD is reassessing the long-term requirement for expendable launch vehicles. A mixed fleet of shuttles and expendable boosters may be needed to provide an assured and responsive satellite launch capability. DOD planning includes the transition of all national security spacecraft launches to the shuttle by FY 1987.

## ELECTRONIC WARFARE/C<sup>3</sup> COUNTER-MEASURES

### Joint Perspective

Electronic warfare and command, control and communications countermeasures (C<sup>3</sup>CM) are receiving increasing emphasis within the Services and the unified and specified commands. This emphasis is in recognition of time and space compression brought about by modern weaponry and electronics and the increased dependence of commanders at all echelons on electronic means for commanding and controlling their forces. The Soviets have long recognized the criticality of the command and control function and its associated communications. The Soviet emphasis on the integrated use of firepower, jamming, and deception leaves no doubt that they are earnest in their belief that by destroying an enemy's electronic emitters they will eliminate him as an effective fighting force. In contrast with the Soviets' capabilities to destroy, degrade, or deceive an enemy's C<sup>3</sup> capability, the US approach, until recently, was essentially defensive and reactive.

In recognition of Soviet EW capabilities, the Secretary of Defense has provided detailed guidance to the Services and appropriate Defense Agencies for intelligence support to C<sup>3</sup>CM; integration of C<sup>3</sup>CM into operations plans and orders, operational tests, and exercises; and coordination of C<sup>3</sup>CM matters with allies and other friendly nations.

Benefits of this heightened emphasis are evident. EW and C<sup>3</sup>CM have begun to receive a larger share of Service funding, resulting in enhancement of systems procurement. In addition, most unified and specified com-

mands have established working groups to insure that C<sup>3</sup>CM is adequately addressed in operations plans and directives. A joint Army-Air Force C<sup>3</sup>CM concept has been developed and signed. Finally, the unified and specified commands and Rapid Deployment Joint Task Force have established C<sup>3</sup>CM operations cells and required their components to do the same.

The net result of all these actions is an aggressive EW and C<sup>3</sup>CM approach across the board — in policies, strategy, concepts, doctrine, tactics, training, and operations. EW and C<sup>3</sup>CM are included as major objectives in joint exercises such as TEAM SPIRIT, NORTHERN WEDDING, BOLD EAGLE, and GLOBAL SHIELD. These exercises provide opportunities to activate and exercise C<sup>3</sup>CM planning cells, resulting in enhanced training and the practical application and testing of concepts. The Joint Electronic Warfare Center, recently established under the auspices of the Joint Chiefs of Staff at Kelly Air Force Base, Texas, has begun a lessons-learned program for the exchange of EW and C<sup>3</sup>CM exercise-related information, initiated action to identify requirements for C<sup>3</sup>CM data bases, and is establishing a combat evaluation program which will aid commanders in understanding how EW affects the conduct of their operations.

The need for effective combined efforts, especially in Europe, makes it vitally important that the US and its allies practice essentially the same EW and C<sup>3</sup>CM doctrine, and that all are prepared in terms of organization, equipment, and training to conduct mutually supporting EW and C<sup>3</sup>CM operations. To this end, NATO has published a counter-C<sup>3</sup> policy to complement existing EW policy. EW measures in the NATO Long Term Defense Program are also being refined to make them more affordable and, therefore, more likely to be accomplished. Outside NATO, similar mutual support and interoperability considerations have been added to the US/Canada Basic Security Plan.

### Army

Army EW/C<sup>3</sup>CM capabilities are expanding with the formation of divisional combat electronic warfare and intelligence (CEWI) battalions and corps level CEWI groups. Ten battalions in the Active Army component were funded in the FY 1980-1981 Budgets. The FY 1982 Budget provides for four more battalions, two undersized groups, and three separate companies. In addition, sufficient manpower spaces have been authorized to bring CEWI units supporting the RDJTF up to the same strength as the combat units they support. The FY 1983 Budget provides for two Active component CEWI battalions, two more CEWI groups, an aerial exploitation battalion, and three more CEWI companies for separate

brigades and armored cavalry regiments. The FY 82 Budget also provides CEWI resources in the Reserve Component for the first time.

### Navy

The Navy has made significant strides in EW and C<sup>3</sup>CM in both investment and training. The AN/SLO-32 V(1) and V(2) will be installed on most combatants and auxiliaries in the surface Navy to provide an enhanced passive EW capability. Major combatants are also being fitted with an active EW capability to counter antiship missiles. Aircraft self-protection EW and C<sup>3</sup>CM systems are standard. The EA-6B, EP-3E, and EA-3B provide dedicated airborne EW or SIGINT capabilities. In addition, passive electronic detection systems integral to the E-2C and S-3A aircraft provide the means to correlate and cross reference some threat signals. The EA-6B, which provides both active and passive capabilities in a platform capable of accompanying the strike forces, has



E-2

progressed through a series of upgrades. The next generation to be introduced into the fleet will feature a greatly enhanced capability to jam priority threats. Ongoing modernization of the EP-3 passive electronic reconnaissance aircraft will provide an improved capability to exploit the signal environment.

### Air Force

In FY 1981, the Air Force developed the Electronic Combat Action Plan, focusing investment and acquisition priorities to correct electronic combat (EC) shortfalls. This 15-year investment strategy is designed to allow the transition from a defensive to an offensive EC capability. The Air Force has also developed an EC operational concept called CONSTANT LIGHT, which integrates EC assets for suppression of enemy air defenses (SEAD), EW, and C<sup>3</sup>M.

Of particular concern to the Air Force is the dense and sophisticated electronic environment expected in

central Europe, where self-protection may not be adequate to insure the survivability and effectiveness of US and allied weapon systems. To enhance systems survivability, the FY 1983 Budget continues procurement and development of complementary lethal and electronic systems to suppress enemy air defenses. For example, modifications to the WILD WEASEL F-4G have been completed on 116 Air Force F-4 aircraft. These F-4G SEAD weapon systems will be equipped with the US high-speed antiradiation missile in FY 1984. In addition, the Precision Location Strike System (PLSS) is scheduled for an IOC in the mid 1980s; PLSS is an all-weather weapons system designed to locate, identify, and guide strikes against enemy air defense emitters. COMPASS CALL (EC-130) and EF-111 airborne systems are programmed for IOC in the early 1980s. These complementary jamming systems will be capable of working with deployed Navy and Army forces to disrupt Soviet integrated air defense radar and communication networks. Expendable harassment vehicles, now planned, will have lethal and electronic capabilities against enemy radars and communication systems. The Air Force has also requested funds in the FY 1983 Budget to provide ground-mobile systems capable of attacking enemy C<sup>3</sup> during wartime and providing training for friendly forces during peacetime.

To insure mission accomplishment when exposed to jamming, a jam-resistant UHF communications capability is funded in FY 1982 for the continued development of HAVE QUICK equipped radios, as well as the SEEK TALK program for Air Force aircraft and ground systems. Additionally, jam resistance in the VHF band is being addressed by continued development of SINGARS V for Army and Air Force ground use.

### **ARMY GENERAL PURPOSE FORCES**

The Soviet Union has developed a quantitatively superior Army which is striving to achieve a qualitative advantage over the US and its allies. To counter this threat, US strategy requires a flexible, highly deployable, qualitatively superior Army. The most demanding challenge confronting the Army is the requirement to develop the capability to respond to multiple threats worldwide without compromising vital interests in Europe.

To meet these requirements during 1983, the Army will apply its resources to equip Active and Reserve forces more fully, modernize existing forces, and improve force sustainability and training levels. In support of these objectives, the Army is lightening the force and exploiting technology, while adding combat and support structure and increasing the role and readiness of Reserve Components. The Army's FY 1983-1987 pro-

gram will provide a force with increased strategic deployability, tactical mobility, and combat capability.

In FY 1983, Active Army forces will remain at 16 divisions; 4 of with 2 Active brigades and 1 Reserve Component (RC) roundout brigade; and 1 division with 1 Active brigade and 1 RC roundout brigade. A significant portion of the Active forces are forward deployed: 4 divisions, 2 divisional brigades (parent divisions based in the CONUS), and 2 armored cavalry regiments in Europe; a division in Korea; and theater defense brigades in Berlin, Alaska, and Panama. The 11 remaining Active divisions (10 in CONUS, 1 in Hawaii) are available for worldwide employment, with priority to NATO. Many of these CONUS-based divisions are tasked to respond to contingencies in the Pacific, Southwest Asia, or elsewhere. Most units are tasked in multiple contingency plans, some of which may be required to be executed simultaneously. Current Army force levels are inadequate to meet all requirements of our national strategy.

Also in 1983, the Army will begin its first major reorganization in nearly 20 years, a program called Army 90. The new organization, which will derive maximum benefit from the capabilities of modern equipment and doctrine, is designed to enable Army units to defeat a sophisticated enemy on the battlefield in nuclear, chemical, or conventional warfare. The Army 90 structure will contain a mix of redesigned heavy and light divisions. The reorganized heavy division, designed primarily for use on the NATO battlefield, is to be equipped with a new generation of materiel systems, all with an IOC of 1986 or sooner. It will be organized for continuous — night and day — combat operations, employing single-weapon companies smaller than the current ground force company. The new light division will be designed for rapid strategic deployment and sustained operations in distant areas with relatively austere logistic support. By exploiting new technology, the Army seeks to give the new light divisions much of the firepower and survivability of current heavy divisions. Thus, the new light division will be effective on NATO battlefields as well as in a wider range of contingencies outside of Europe.

The Army faces the recurring challenge of recruiting soldiers to man the force. During the past fiscal year, the Army was able to meet its recruiting goals and significantly increase the quality of accessions. The Army plans to exceed past performances by maintaining the same high level of quality in its FY 1983 accessions which should have a significant positive impact on personnel readiness. The decline of the 17 to 21 year old recruiting population confronts recruiters with an imposing challenge. Serious considerations, therefore,

must be given to a comprehensive package of educational and enlistment incentives to attract quality soldiers.

In response to concerns about the effects of personnel turbulence on combat readiness, the Army has developed a concept called the New Manning System. The objective of this program is to keep soldiers in their units longer so they and their leaders can train and serve together for improved combat readiness. Since a major portion of the Army is deployed overseas, the system will use unit movement (rotation and/or replacement) to meet commitments and return the unit to a stateside home base. These features of the concept (stabilization, unit movement, home basing) will operate within the framework of an American Regimental System designed to create an environment that fosters cohesion and commitment.

Another matter of concern is the shortage of war reserve stocks (WRS). While the Army has made some progress in improving the posture of war reserve stocks, shortfalls continue to exist in the pre-positioning of major items of equipment, ammunition, and secondary items.

Efforts to improve Army capabilities to reinforce Europe are receiving increased attention. Recent actions have increased the fill level of pre-positioning of materiel configured to unit sets (POMCUS) to the highest level ever. The current POMCUS program provides for the eventual storage of six division sets of equipment.

The Army's capability to fight effectively depends upon effective logistics support and strong Reserve Components. Since approximately 65 percent of the Army's combat service support (CSS) capability is in the RC, these units must be provided modern equipment and trained on it to sustain the Army's combat capability. The Army has begun upgrading RC CSS units. Under the CAPSTONE and Affiliation programs, RC units train with the major Active and Reserve units they will support upon mobilization and deployment.

The Army's program reflects the need for stronger RC forces. By 1983 additional Active divisions will have RC roundout brigades. New RC divisions will be formed from existing separate Army National Guard brigades. Active force structure expansion has been deferred in favor of greatly increased readiness of existing forces.

### **Army Modernization**

The pace of modernization will quicken over previous years as a result of the growth in funding permitted by the FY 1981 Supplemental and FY 1982 Amended Budgets. Greater efficiency in development and produc-

tion, leading to earlier fielding of critical equipment, is the primary result of the increased funding. It is essential that adequate funding levels be continued.

### **Armored Vehicles**

Procurement of 1,686 new M60A3 tanks was completed in FY 1981. In addition, the Army plans to convert 5,661 M60A1 tanks to the M60A3 configuration, which includes a new tank thermal sight, laser range finder, and solid state ballistic computer. These features give the M60A3 an improved day and night firing capability.

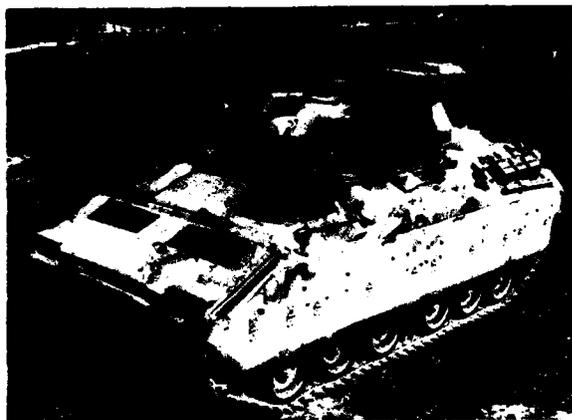
M1 main battle tanks were sent to field units in CONUS in 1981 and will be distributed to field units in Europe in 1982. When available in quantity, the M1, one of the most advanced tanks in the world, will provide US forces with improved mobility, survivability, and firepower. The Army plans to field a total of 7,058 M1s. A maximum production rate of 60 tanks per month will be achieved in 1982; by 1985 that rate will increase to 90 tanks per month. In late FY 1985, the M1 will begin to be produced with the German-designed 120mm main gun system, which will be interoperable with the German LEOPARD 2 tank gun.



M-1

The M2 and M3 BRADLEY Fighting Vehicles are being procured to modernize Army mechanized forces. Both vehicles mount automatic 25mm cannons, with 7.62mm coaxial machineguns and the tube-launched, optically-tracked, wire-guided (TOW) antitank system as secondary weapons. The M2 has six firing port weapons fired from within the crew compartment. The M2 and M3 are identical except for internal stowage and seating differences and the absence of firing port weapons in the M3. With their tremendous improvements in mobility, firepower, and armor protection, these vehicles give mechanized infantry a true mounted combat capability and improve the ability of armored reconnaissance elements to perform their scouting and security missions.

The first vehicle was delivered to the Army in 1981. To date, 1,100 vehicles have been funded.



BRADLEY FIGHTING VEHICLE

#### Antitank Weapons

The infantry has a family of weapons to combat the armor threat. Current members of that family are the TOW (long-range), DRAGON (medium-range), and light antitank weapon (LAW) (short-range).

The TOW, which can be fired from the ground or mounted on helicopters, tracked vehicles, and tactical wheeled vehicles, is the main guided antitank weapon of the Army. Improved warheads and guidance systems are beginning to enter the force, increasing TOW's capability against new Soviet armor and improving its ability to operate in conditions of poor visibility. Conversion of some existing missiles to improved configurations and procurement of approximately 9,000 to 12,000 improved missiles each year is programmed through 1985.

The Army is examining the need to replace the DRAGON with a more capable man-portable antiarmor system. This conceptual system, to be named RATTLER, is also intended to replace the European MILAN in accordance with a tentative US, UK, French, and German agreement to divide responsibility for development of the next generation of antiarmor weapons development.

VIPER, a shoulder-fired antitank weapon, will replace the LAW. The VIPER has greater range, accuracy, and lethality than the LAW. Procurement of VIPER has begun; the Army plans to purchase approximately 150,000 through FY 1983.

#### Helicopters

By 1987, the Army is scheduled to have 1,390 combat attack helicopters. Almost two-thirds of these will be the AH-1S COBRA TOW. Fifty percent of the AH-1S

force will be upgraded by adding a 20mm gun, TOW missile management subsystem, fire control system, and survivability equipment.

By 1987, the Army is also scheduled to have 4,111 trooplift helicopters for combat support — 706 new UH-60As and 3,405 UH-1Hs. The UH-60 is more survivable, reliable, and maintainable than the UH-1H, and can carry more combat troops. The UH-60A is replacing the older UH-1H in selected combat aviation companies, air cavalry, and medical evacuation units. Plans for the UH-1H include a service life extension program, since the Army will continue to rely heavily on it for command and control, medical evacuation, liaison, transport, and electronic warfare until the year 2000.



UH-60

The Army's fleet of over 440 CH-47 transport helicopters will be rebuilt over the next several years. The reconstructed helicopters, designated CH-47D, will have significantly increased payload, performance, and improved maintainability. The CH-47D will have the expected service life of new helicopters, but cost considerably less than completely new airframes.

The Army's AH-64 advanced attack helicopter is completing full-scale engineering development and is scheduled to enter production in 1982. Delivery will begin in 1984 and IOC is planned for 1985. The AH-64 will have the HELLFIRE antitank missile, also entering



AH-64

production in 1982, plus a 30mm automatic gun and 2.75mm rockets.

### Air Defense Weapons

STINGER is a man-portable air defense missile system developed to replace the REDEYE. The STINGER's improved infrared-seeker guidance system makes it much less vulnerable than REDEYE to countermeasures. STINGER became operational with some units in 1981 and will eventually be standard equipment for Army teams, RC Army teams and Marine Corps units.

Two new systems, PATRIOT and Division Air Defense (DIVAD) Gun, will greatly increase the Army's air defense capabilities against a variety of aircraft approaching at different altitudes. PATRIOT will replace NIKE HERCULES and the Improved HAWK as the principal weapon for defense against aircraft at high or medium altitudes. The US plans to deploy PATRIOT battalions in Europe and CONUS; each battalion will consist of six batteries equipped with eight four-tube launchers — a total of 192 missile tubes.



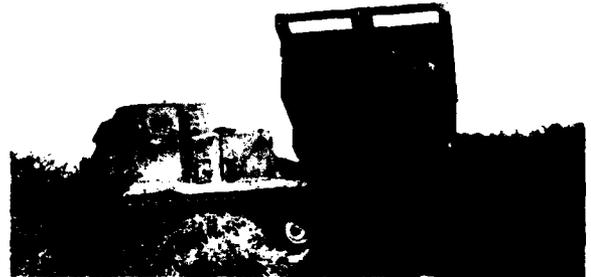
PATRIOT

The DIVAD Gun will give the Army a more mobile, longer-range weapon to accompany and protect mechanized units in combat, and is intended to replace the VULCAN system, which can operate only in fair weather and daylight. The Army plans to convert VULCAN batteries to DIVAD. Each battalion will consist of 36 DIVAD fire units (3 batteries) and 24 CHAPARRAL fire units (2 batteries).

The introduction of ROLAND on a limited scale will provide an all-weather short-range air defense missile capability for terminal defense of critical assets.

### Artillery

Procurement of the Multiple-Launch Rocket System (MLRS) began in 1980. Germany, France, and the UK are partners with the US in this program. The MLRS will give the ground forces enhanced fire power to suppress enemy artillery and air defenses, and introduce a new capability to interdict enemy operations beyond cannon range. The MLRS may also incorporate a chemical warhead and terminal guidance warheads capable of killing tanks and other armored vehicles. Procurement of 333 self-propelled launchers is programmed.



MLRS

Procurement of the COPPERHEAD 155mm laser-guided projectile began in 1980; the projectiles will significantly improve the antiarmor capability of existing US artillery.

### High Technology Test Bed

The Army intends to exploit technological opportunities to create an improved infantry division. Currently the 9th Infantry Division at Fort Lewis, Washington, is serving as the test bed. Tests and experiments are being directed toward development of a division which is more rapidly deployable and meets requirements for lean, hard-hitting forces. The improved capabilities of this division will substantially improve the US capability to respond to contingencies throughout the world.

### NAVY GENERAL PURPOSE FORCES

US national interests require the US Navy to have a clear margin of maritime superiority over the Soviet Union. The continuing buildup of Soviet naval strength, coupled with the decline in US force levels, has not only eroded the favorable balance which has existed since the Second World War, but also led to a situation where the US Navy is unable to meet all of its peacetime commitments adequately. The need to meet a three-ocean

requirement has resulted in ship operating tempos exceeding those reached during the height of the Vietnam war.

By the end of FY 1983, Active Navy general purpose forces will total 464 ships, 13 carrier air wings, and 24 maritime patrol squadrons. The ships will include 13 deployable aircraft carriers, 205 surface combatants, 99 attack submarines and 60 amphibious ships — an increase of one carrier air wing and 16 ships above the FY 1982 levels. Battle forces of the Navy will consist of 536 ships plus carrier air wing and maritime patrol aircraft. The capabilities of these forces are improving, the average age of the fleet is decreasing, and the quality of the force is being upgraded by the introduction of new systems.

Intelligence projections forecast a slight decrease in the number of Soviet submarine forces, but a substantial improvement in their sophistication. The Navy continues to maintain balanced and effective ASW capabilities to counter this threat, but the growing capability of Soviet submarines and clear improvement in their tactical employment and coordination have highlighted several areas in which there is still risk for the US.

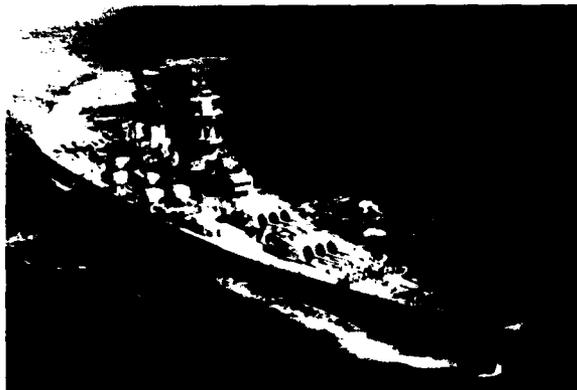
Amphibious warfare capabilities remain substantial, but require modernization. The US Navy has the aggregate lift capability in modern 20-knot ships to project the assault echelon of one Marine Amphibious Force (MAF). Due to scheduled retirements of LSD-28-class ships and negligible procurement in recent years, amphibious force levels will remain constant.

The US mine countermeasures force consists of 25 obsolete ocean minesweepers, 22 of which are in the Active Reserve fleet, and three airborne MCM squadrons equipped with 23 RH-53 helicopters. These forces are limited in their ability to counter an unopposed mining effort by the Soviets, who possess the largest stockpile of naval mines in the world. A major program is underway to upgrade US MCM capabilities; new MCM ships are planned. The US will continue to rely heavily on the NATO Allies to provide MCM forces.

US dependence on the seas and security commitments to approximately 40 nations overseas require a Navy capable of maintaining the security of SLOCs and projecting global offensive striking power, even within the combat radii of land-based Soviet air power, submarine, and surface forces. Major priorities of the Navy program include:

- Shipbuilding and conversion, with emphasis on ships having long-range offensive striking power.

The FY 1982 Budget calls for a total of 28 ships — 17 new construction ships and 11 conversions — at a cost of about \$8.9 billion. This program includes reactivation of the battleship NEW JERSEY as a platform to launch TOMAHAWK and HARPOON cruise missiles and to provide major caliber guns for naval gunfire support.



BATTLESHIP, USS IOWA

- Procurement of aircraft at rates sufficient to exceed attrition. This objective requires at least 330 aircraft per year. In FY 1982, the Navy will procure 283 aircraft at a cost of \$9.3 billion. While this number is below that required to meet attrition, it is well above levels procured in recent years. The Navy will build up to 400 aircraft each year by 1985 and maintain that rate through the 1980s.
- Service life extension and conversion of selected aircraft and ships to continue operations with hardware and systems in the inventory and in some cases, provide a dramatic increase in performance with newly available technology.
- Recruitment and retention of trained manpower. Although this remains critical, there have been recent improvements. The pay raises and special incentive payments approved in FY 1981 and FY 1982 were essential in reducing further aggravation of the Navy's critical shortages of mid-grade petty officers and officers. These shortages (over 22,000 petty officers) will be eliminated only with years of exceptional retention spurred by competitive compensation. Retention rates for both first-term and career personnel were higher in 1981 than 1980. The Navy also met its recruiting goals for 1981, and the increased quality of these recruits was reflected by both the improved percentage of high school diplomas and scores on the Armed Forces Qualification Test.

## Navy Modernization

To support the objective of rebuilding a Navy capable of achieving an essential margin of maritime superiority, there must be an appropriate balance between new construction and force improvements. Several ongoing and planned major programs which support that objective are discussed below.

### Aircraft Carriers

The US currently has 12 deployable aircraft carriers. The VINSON, now under construction, will join the fleet in 1982 as the thirteenth. The CORAL SEA, which was to be reduced to the status of a training carrier, will be kept in deployable status because of the increased requirements placed on the carrier force by events in Southwest Asia and the Indian Ocean. The eight conventional carriers of the FORRESTAL- and KITTY HAWK-classes are in the last five years of their 30-year service lives and are being rotated through a service life extension program. This major overhaul will add about 15 years to their lives. Current plans call for the delivery of a nuclear-powered aircraft carrier in late 1986. The Navy has requested authorization and full funding in the FY 1983 Budget for two more nuclear-powered aircraft carriers. Efforts will be made to establish delivery dates of early 1990 and early 1991.

### Cruisers

The TICONDEROGA, a guided missile cruiser, was launched in April 1981. Four ships of the TICONDEROGA-class are under contract; 3 more have been authorized by Congress and the Navy proposes to fund construction of 17 more between FY 1983 and FY 1987. The TICONDEROGA will be the first ship equipped with the US Navy AAW weapon system (AEGIS). AEGIS, a computerized battle management fire control system coupled to a phased-array air search radar, will permit TICONDEROGA-class cruisers to engage multiple attacking aircraft and the most advanced Soviet antiship cruise missiles in the face of heavy electronic countermeasures. AEGIS can control a number of anti-air weapon systems and has the potential for coordinating the fire of several ships.

### Amphibious Ships

The keel of WHIDBEY ISLAND, first of the new LSD-41-class of amphibious assault ships, was laid in August 1981. This class will replace the LSD-28 amphibious ships, which are reaching the end of their service lives. The LSD-41 will be able to operate with either conventional landing craft or the new 50-knot air-cushion landing craft. Six air-cushion landing craft will be delivered to the fleet by 1986.



LSD-41 WITH AIR-CUSHION LANDING CRAFT

### Mobile Logistic Support Force

The first two ships of a new class of five fleet oilers, CIMARRON and MONONGAHELA, were commissioned in 1981. The remaining three ships will join the fleet in 1982 and 1983. These ships have improved underway replenishment equipment and communications systems, and antiship missile defense combat systems. The ACADIA, second of a new class of six surface combatant tenders, was delivered in 1981. Delivery of the third and fourth tenders is scheduled for 1982 and 1983. These mobile repair facilities are equipped to service modern cruisers (including nuclear ships), destroyers, and frigates.

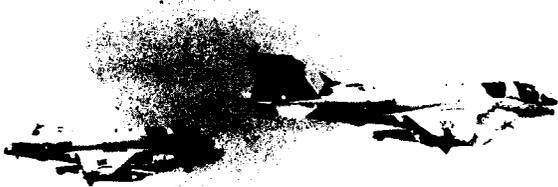


FLEET OILER, USS CIMARRON

### Air Defense

The threat posed by Soviet aircraft and antiship cruise missiles is growing steadily with the continuing introduction of improved delivery platforms; weapons systems; ECM equipment; surveillance, tracking, and targeting systems; and command and control equipment. This threat demands highly effective anti-air warfare (AAW) systems to provide defense in depth. The introduction of TICONDEROGA-class AEGIS cruisers and ongoing deployment of the E-2C early warning aircraft, PHOENIX missile-equipped F-14 fighters, and EA-6B electronic warfare aircraft will significantly strengthen

battle group AAW defenses. Additionally, 26 surface ships have been equipped with PHALANX, an automatic, self-contained weapon with a 20mm gun, radar, and digital fire control system. The PHALANX provides a fast-reaction terminal defense against low-flying high-speed antiship missiles. The Navy has scheduled more PHALANX installations for the coming year.



EA-6B

### Cruise Missiles

The HARPOON antiship cruise missile has been fitted on about 120 surface combatants of various classes and about 80 more will have it by 1986. Seventy-six P-3 land-based patrol aircraft are equipped for the HARPOON; the Navy plans to equip 300 P-3 aircraft by 1985. Carrier-based A-6 attack aircraft are also being modified to carry HARPOON. The TOMAHAWK cruise missile, which will be operational in 1982, will add to the Navy's long-range offensive capability. TOMAHAWK variants are designed for use against surface ships or land targets. The TOMAHAWK is to be carried by several classes of submarines, cruisers, and destroyers and the IOWA-class battleships that are to be reactivated.

### Aircraft

The F-14, designed for fleet air defense and offensive air-to-air combat, is the Navy's best operational air superiority fighter. Procurement of 539 aircraft will be completed in 1984. Eight of the Navy's 13 aircraft carriers already operate F-14s and more will receive them in 1982. The F/A-18 aircraft, which will replace the F-4 and the A-7 in the Navy and Marine Corps, is to have both



F-14

air-to-air and air-to-ground capabilities. The Navy plans to procure more than 1,300 F/A-18s. The AV-8B, a variant of the AV-8A HARRIER incorporating significant improvements in vertical takeoff and landing performance, is being procured as a replacement for Marine light attack aircraft.

### Submarines

By March 1982, eight POLARIS-class SSBNs will have had their ballistic missiles removed and been redesignated SSNs. Seventeen LOS ANGELES-class nuclear-powered attack submarines (688-class SSNs) have been commissioned and 22 others authorized. These quiet submarines have a high submerged speed and improved sensor and weapon systems to counter new classes of Soviet submarines.

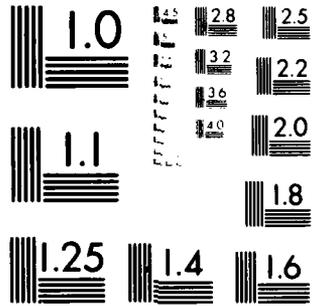
Thirty-six nuclear-powered attack submarines are equipped with HARPOON antiship cruise missiles. The Navy plans ultimately to equip all nuclear-powered attack submarines with fire control systems for launching cruise missiles and to arm them all with HARPOON and long-range TOMAHAWK cruise missiles. The Navy also plans to increase the firepower of LOS ANGELES-class SSNs by incorporating an external vertical-launch capability. Design is proceeding on a new bow, which will house 12 TOMAHAWKS (both land-attack and antiship versions). By 1985, new-construction submarines will have this external launch capability; previously delivered LOS ANGELES-class hulls are to be retrofitted.

The MK-48 torpedo, principal weapon for all US attack submarines, is being modified. The guidance system will be upgraded to track enemy submarines better and operate against sophisticated electronic countermeasures. These modifications are designed to enable the MK-48 to counter any existing Soviet submarine as well as those expected to enter the Soviet inventory. The modified MK-48 will begin to enter the fleet in 1986.

### Communications

Secure, survivable, and interoperable C<sup>3</sup> capabilities are essential for effective employment of naval forces. The Navy is pursuing a number of programs to improve these capabilities: the multi-Service TRI-TAC program will provide a common family of communications equipment. Jamming protection will be provided by Jam-Resistant Secure Communications at Navy facilities for critical NCA communications links to operational commanders. The Single Channel Ground Air Radio System will replace fleet radios to insure interoperability with other Services. The Joint Tactical Information Distribution System will provide a secure jam-resistant means of passing tactical voice and digital data in an EW environment.





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

## AIR FORCE TACTICAL FORCES

Air Force tactical air forces must be able to deploy worldwide and conduct prompt, sustained air operations at any level of conflict. Most tactical aircraft are designed to conduct one or more of the fundamental missions of offensive and defensive counterair, close air support, and interdiction. Supporting these missions are assets which provide capabilities for force projection, defense suppression, logistics, and reconnaissance. Special operations forces also contribute to theater war-fighting capabilities. Deficiencies in readiness, deployability, and sustainability would limit the effectiveness of tactical forces in carrying out national strategy, particularly if it were necessary to operate in multiple theaters simultaneously. In addition, vastly improved Soviet tactical warfare forces and defensive systems have eroded the qualitative advantages US tactical air forces have enjoyed in previous years.

The tactical fighter force consists of 24 Active and 12 Air Reserve Force wing equivalents. The force consists of a variety of aircraft with varying capabilities. The A-10, designed solely for close support of friendly ground forces, is at the low end of the performance spectrum. Active and reserve units in the United States, Europe, and Korea are equipped with 444 of these aircraft. At the center of the performance spectrum, 276 F-16s provide a multimission capability, combining high performance, versatility, and excellent sortie rate generation in the air-to-air and air-to-surface arenas. The F-15 performs at the high end of the performance spectrum, primarily as an air superiority weapons system. Tactical units in the United States, Europe, and the Pacific are equipped with 396 of these all-weather fighters. Accompanying this force are 240 F-111s providing long-range, night, and all-weather interdiction capability; 792 multirole F-4s, which have long been the mainstay of USAF fighter forces; and 324 A-7s for use primarily in the air-to-ground role. All tactical fighters are capable of in-flight refueling.

Tactical reconnaissance is provided by 252 RF-4s, organized into 6 Active and 8 Air National Guard squadrons. These aircraft collect timely and accurate information on enemy forces and activities for battle management and targeting. To combat the dense and sophisticated electromagnetic threat environment facing US tactical forces, 84 F-4Gs and 5 EF-111s provide defense suppression in all theaters. Additional support is provided by 25 E-3A Airborne Warning and Control Systems; 7 EC-130 Airborne Command, Control, and Communications aircraft; 239 OV-10, O-2, and OA-37 Tactical Air Control Systems; and special operations forces consisting of 13 MC-130Es, 10 AC-130As, 10 AC-130Hs, and 9 HH-53H, 10 UH-1N, and 6 CH-3E helicopters.



MC-130E

National strategy requires that tactical air forces be capable of deploying rapidly to Europe and other areas of the world, perhaps simultaneously. Air Force power projection capabilities are limited by deficiencies in logistics, air refueling, airlift support, and transportable C<sup>3</sup> systems.

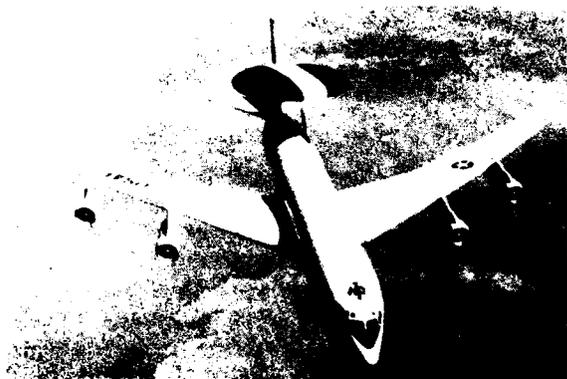
Airbase survivability and recovery are crucial for generating enough aircraft sorties over a sustained period to achieve military objectives. US tactical air forces are currently constrained by limited capabilities to defend and recover airbases from an enemy attack. Improvements are needed in the areas of ground defense, point air defense, chemical defense, passive defense, explosive ordnance disposal, rapid runway repair, alternate launch and recovery surfaces, casualty care, and short take-off and landing facilities. Additionally, construction of aircraft shelters, CW protective facilities, POL and munitions storage, and dispersed aircraft parking is required in a number of regions.

Force employment at night and in adverse weather is constrained by the inability of tactical forces to operate effectively in these conditions. In all regions, the Air Force will confront opposing air, sea, and ground forces which possess improving capabilities for continuous combat. The F-111 is the only tactical fighter which can attack deep interdiction targets at night and in poor weather conditions.

The lack of an adequate defense suppression capability increases the vulnerability of tactical forces in today's threat environment. A complementary mix of lethal and non-lethal defense suppression capabilities is needed. Expanded reconnaissance and command and control capabilities are necessary to assure the effective use of airpower.

The previously planned procurement of 34 E-3As has been increased to permit more extensive North American air defense coverage to better deter a Soviet covert

bomber attack on our strategic C<sup>3</sup> and other time-sensitive targets. Additionally, funds are being added to increase AWACS flight operations over North America in the near-term to deal with the Soviet covert bomber attack threat.



AWACS

Efforts are underway to improve the readiness, deployability, and sustainability of tactical forces. The recent procurement of spare parts for aircraft and support systems, which have been seriously underfunded in the past, will improve the mission capability of fighters and allow them to fly at increased sortie rates. Conformal fuel tanks for F-15s (which give them the ability to fly non-stop to Europe); increased airlift capacity by modification of civil DC-10s and 747s, and increased military airlift utilization rates will enhance force deployability. The programmed purchase of additional munitions in FY 1982 and subsequent years will allow tactical forces to sustain combat operations in more than one theater.

Retention and recruitment of quality personnel has been improved by the increased benefits and career incentive programs instituted recently. Improved training programs have been initiated to prepare individuals for skill requirements demanded by the sophisticated weapons systems of the tactical air forces.

A small force growth has been planned to counter qualitative and quantitative improvements to general purpose forces fielded by the Soviet Union, its allies, and surrogates. Continued procurement of F-15 and F-16 aircraft will insure that this force is equipped with improved fighting systems in greater quantity.

### Air Force Modernization

Planned tactical force modernization includes procurement of new aircraft and munitions which will enable the USAF to counter the future threat effectively.



F-15



F-16

Emphasis is being placed on modernizing Reserve as well as Active forces. Enhanced versions of today's fighters, which are currently in development, will improve combat capabilities and allow operations in a wider range of environments than is now possible. Increased procurement will allow retirement of older, less capable aircraft, with a corresponding decrease in the average age of the fighter force. Planned munitions enhancements are designed to offset deficiencies, particularly in the areas of heavy armor kill and airfield attack.

### Fighter and Attack Aircraft

Tactical fighter and attack forces are being modernized through procurement of new aircraft and modification of older systems. Though A-10 production will end in FY 1983, F-15 and F-16 production will continue into



A-10

the 1990s. These aircraft will replace less modern active aircraft which, in turn, will replace still older systems in the reserves. In the 1980s, A-10s and F-16s will be used to equip some Air National Guard and Air Force Reserve units. Continuing reserve aircraft modernization is necessary since 34 percent of the tactical air forces are assigned to the Air Reserve Forces. F-15 and F-16 variants, enhanced for night and adverse weather capability and extended range operations, are being developed. These fighters will improve the capability of US forces to fight in all environments and augment the aging F-111 force by their ability to attack distant targets in adverse flying conditions.

#### **Special Operations Aircraft**

Special operations aircraft are being modernized by the addition of 10 MC-130H COMBAT TALON aircraft. This version of the MC-130E will provide better range; payload; and improved C<sup>3</sup>, ECM, and avionics systems. Procurement of the AH-X special purpose helicopter in FY 1986 will overcome shortfalls in medium lift capability.

#### **Munitions**

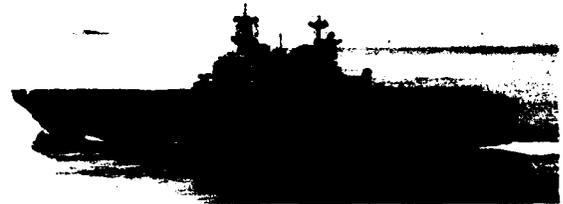
Significant improvements have been made to the AIM-7 (radar) and the AIM-9 (infrared) air-to-air missiles, enhancing their kill potential and allowing them to operate more effectively in the expanded performance envelope dictated by today's modern fighters. The advanced medium range air-to-air missile (AMRAAM) will provide the aerial combat capability necessary to meet the projected threat of enemy air-to-air weapons through the end of this century. AMRAAM will provide a beyond-visual-range capability for the F-16, and launch-and-leave capability for both the F-15 and F-16.

Several air-to-surface munitions now entering production will significantly improve weapon effectiveness and expand the scope of battlefield targets that can be attacked by US attack aircraft. GBU-15 and low level laser-guided bombs provide pinpoint accuracy, while allowing the delivery aircraft to maneuver freely and release weapons outside the effective range of defensive fire. GATOR mines will provide a capability to disrupt and delay the movement of armor and support vehicles, and antiarmor cluster munitions will provide multi-vehicle kills of massed armor on the battlefield or in staging areas. The DURANDAL airfield attack weapon will provide runway cratering and shelter penetration of reinforced concrete structures. Infrared imaging MAVERICK air-to-surface missiles will improve the ability of US ground attack forces to kill targets at night. The high speed antiradiation missile will provide an effective weapon for the F-4G active defense suppression platform, enabling it to counter threats in the mid-80s and beyond.

## **MARINE CORPS GENERAL PURPOSE FORCES**

US global interests require that naval and air forces keep sea lines of communication open and project power ashore. Amphibious task forces have the means to seize, occupy, and defend areas critical to the preservation of the SLOCs. Marine Corps forces offer a wide range of employment capabilities, foremost of which is their ability to conduct forcible entry on a hostile shore.

Although Marine Corps forces, active and reserve, are structured primarily to conduct amphibious operations, Marine Air Ground Task Forces provide an inherent flexibility to respond rapidly by airlift or sealift to a wide variety of contingencies. During FY 1983, the Marine Corps will maintain three Marine Amphibious Forces within its active structure, one in the Western Pacific and one on each coast of the United States. The Marine Corps Reserve, the 4th Marine Division/Wing Team, will continue to be sized and structured to augment and reinforce selectively the three active MAFs under mobilization conditions.



**AMPHIBIOUS ASSAULT SHIP, USS TARAWA**

The capability to conduct two simultaneous MAF amphibious assaults is essential to execute the amphibious requirements of the national strategy with an acceptable degree of risk. The present inventory, however, provides only one MAF lift for one MAF assault echelon. The attainment of two amphibious lift capabilities for two MAFs will require a substantial increase in the amphibious ship building rate over that currently programmed.

Combat service support will be substantially improved by the Field Logistics System. This system, which includes the procurement of motor transport; engineer, materials handling, water purification, and utilities distribution equipment; shelters; and containers, represents a much needed increase in logistics capability. The Field Logistics System family of equipment will give

the Marine Corps an added dimension in combat service support and enhance logistics support capabilities to the Active Fleet Marine Forces.

Although the Marine Corps is not programming a major force structure expansion, a balanced, evolutionary program of structural modification is underway. A restructured infantry battalion, with a 10 percent manpower reduction, will have significantly increased firepower and mobility as a result of the introduction of new and improved weapon systems. Manpower savings realized from restructuring will allow the formation of new light armored vehicle battalions and an increase in the number of artillery battalions. Light antiaircraft missile battalions are being reorganized to provide increased air defense capabilities. Additionally, Forward Area Air Defense (REDEYE/STINGER) units will increase from one to four platoons in each of the active aircraft wings. Other changes include restoring communications battalions to full strength and increasing Reserve combat service support structure.

The Marine Corps is involved in two innovative pre-positioning programs which will contribute substantially to rapid deployment and sustainability. First, the Marine Corps is planning to pre-position equipment and supplies to support a Marine Amphibious Brigade in Norway. The program objective is to pre-position selected additive items of unit equipment and heavyweight/high-volume material to reduce airlift requirements and improve closure time for forces earmarked for the rapid reinforcement of NATO. Second, the Marine Corps, in concert with the Navy, will maintain the Near-Term Pre-positioning Force Program while the Maritime Pre-positioning Ships Program is being implemented. The ships, stationed at Diego Garcia in the Indian Ocean, would steam when directed to a designated developed port in the crisis area for offload and marry up with Marines arriving via airlift. The NTPF provides a capability to introduce or rapidly surge a Marine Corps force into a permissive environment and significantly improve the US capability to meet Southwest Asia contingency requirements.

Regional pre-positioning initiatives complement the Marine Corps' capability for global commitment. This pre-positioned material must continue to remain additive and not detract from the logistic support already available to Marine forces. While pre-positioning, both ashore and afloat, enhances strategic mobility for selected scenarios, the timeliness and mode of committing Marine forces must remain free of pre-positioning constraints. Pre-positioning must be developed as an adjunct to — and not as a substitute for — adequate amphibious lift.

Manpower initiatives are targeted at fuller manning for the existing structure both in the ground and air components. Although the Marine Corps anticipates no difficulty in achieving an FY 1983 active end-strength of approximately 194,000, continued emphasis will be placed on programs to attract and retain adequate numbers of qualified personnel. Additionally, current programming provides for sufficient personnel to bring Reserve units to full wartime strength by FY 1986. Recognizing that readiness is directly affected by the degree to which the needs of a Marine and his family are satisfied, the Marine Corps will continue to support efforts to maintain military pay at competitive levels and improve quality of life.

### Marine Corps Modernization

A program of selective weapons modernization will significantly enhance Marine Corps capabilities in the 1980s. Emphasis in Marine Corps ground forces will be placed upon increasing and improving tactical mobility and firepower, while modernization of the aviation component will focus on the replacement of aging aircraft and improvements in command and control systems.

### Ground Elements

In FY 1983, the Marine Corps will increase firepower in both the infantry and artillery, provide for a greater antitank capability, and improve tactical mobility. The modernization of weapons systems within the infantry battalion will significantly enhance the capabilities of Marine Corps ground combat forces. Improvements in the M-16 rifle, the basic infantry weapon; the introduction of the Squad Automatic Weapon; and incorporation of the .50 caliber heavy machinegun into the infantry battalion will provide increased firepower at greater ranges against personnel and light armored vehicles. A new 40mm heavy machinegun will provide the infantry battalion a heavy automatic weapon capable of defeating infantry and penetrating armored assault vehicles at ranges up to 2,200 meters. The improved 81mm mortar, to be introduced in 1984, will provide additional range even though 17 pounds lighter than the present mortar.



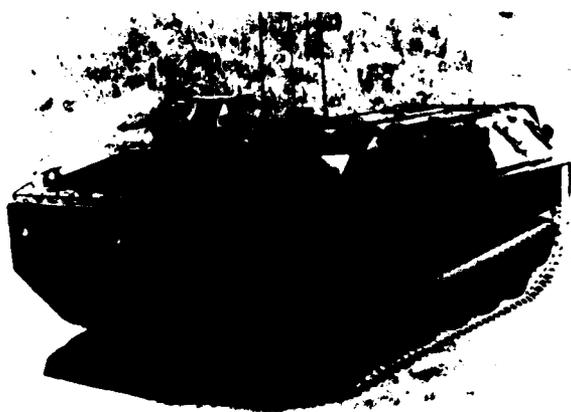
MARINE LANDING EXERCISE

Antimechanized capabilities will be enhanced by replacement of the current light antitank weapon with an improved version of the same weapon, the addition of eight antitank DRAGON teams to each infantry battalion for a total of 32, and the introduction of a TOW platoon with 24 teams at the regimental level. Addition of the TOW platoons will double the antimechanized capability of each division.

Artillery battalions will possess significantly increased flexibility, lethality, and range with the introduction of the M198, a 155mm towed howitzer, scheduled to replace both the 105mm howitzer and the current 155mm howitzer. With the formation of three target acquisition batteries by FY 1988, artillery counterbattery fire will be significantly improved.

The landing vehicle tracked (LVT), which provides ship-to-shore capability in an amphibious operation and armored mobility for subsequent operations ashore, will be modernized commencing in FY 1982. Major improvements include a new engine, nonintegral fuel tank, and an electric weapons station. Service life of the LVT will be extended into the 1990s. In addition, 329 LVTs are being purchased for the maritime pre-positioning ships (MPS). Introduction of the Light Armored Vehicle in FY 1983, with its superior mobility and firepower, will provide the Marine Corps with enhanced capabilities against enemy ground forces.

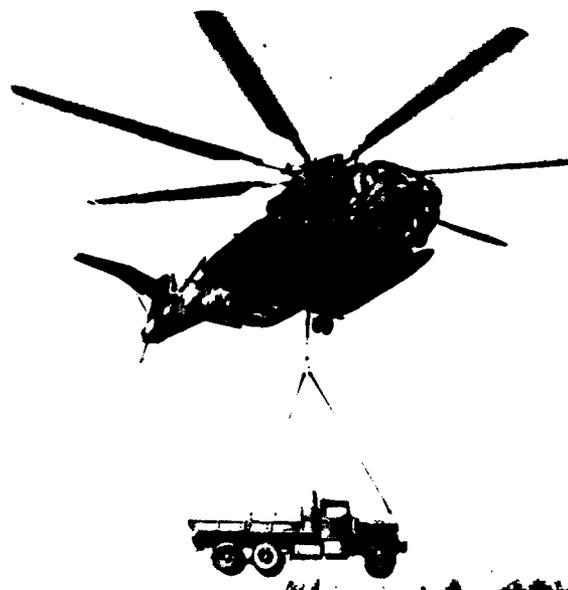
The Marine Corps also continues to work with the Army on development of the Mobile Protected Gun System (MPGS), a lightweight, highly mobile, well protected, and lethal direct fire weapons system. Transportable by CH-53 helicopter, the MPGS is expected to be in the inventory by FY 1988. The MPGS will not replace existing systems, but will provide the helicopter-borne force with a direct fire support weapon capable of defeating projected Soviet armored vehicles, material, and personnel in the 1990s.



LVT

## Aviation

Marine Corps Aviation is focusing its modernization efforts on the CH-53E, F/A-18, and AV-8B. The CH-53E helicopter, with its 16-ton lift capacity, will be capable of moving 90 percent of the items in the Marine Corps equipment inventory. The aircraft is currently entering the fleet; the first two squadrons will become operational during FY 1983.



CH-53

Marine Corps fighter/attack capabilities will improve significantly in FY 1983 when the first three squadrons complete transition from the F-4 to the F/A-18. The internal configuration of the F/A-18, both in terms of hardware and software, is identical for fighter and attack missions. The F/A-18 incorporates advanced technology and can deliver air-to-ground ordnance with about four times the accuracy of the F-4. The F/A-18, which carries SIDEWINDER and SPARROW missiles, is a highly maneuverable and formidable fighter aircraft. The AV-8B is scheduled to be operational by FY 1985, with the transition of eight active light attack squadrons



AV-8

completed by FY 1989. Planning will also continue for modernization of the Marine Air Reserve to alleviate severe aircraft shortages and fleet obsolescence and to insure compatibility with the active force.

#### Command and Control

Marine Corps efforts to advance command and control capabilities for both ground and air components will continue during FY 1983. The Intelligence Analysis Center, which is scheduled for IOC in FY 1983, will automate intelligence activities at the MAF level.

An assortment of new tactical communications equipment will be operational in the Fleet Marine Force by FY 1983. The AN/PRC-104 family of HF radios, VINSON and PARKHILL COMSEC equipment, AN/GXC-7A facsimile equipment, AN/UGC-74 teletypewriter equipment, AN/TSC-96 satellite terminal, and a new portable UHF ground-to-air radio will significantly enhance the reliability and operational effectiveness of the Marine Corps tactical communications system. Additionally, the Marine Corps will continue procurement of the revolutionary hand-held Digital Communications Terminal (DCT). Beginning in FY 1984, the DCT will greatly enhance the speed, reliability, and security of tactical radio transmissions.

#### MOBILITY FORCES

The capability to deploy and sustain combat ready military forces anywhere in the world is dependent upon airlift and sealift forces. Demands for increased lift and resultant shortfalls have necessitated increased investments in US mobility forces.

#### Airlift

Airlift resources assigned to the Military Airlift Command (MAC) and committed to the Civil Reserve Air Fleet for intratheater and intertheater movement of cargo and passengers are shown in Chart A-1. In addition, some NATO countries have committed long-range cargo aircraft to transport US reinforcements to Europe in the event of war. Similar commitments by other countries are being pursued.



C-5

Efforts are underway to enhance US military airlift capabilities. The C-141 fuselage stretch/air refueling modification program will be completed in mid-1982, increasing cargo carrying volume by 30 percent and extending the nonstop range. At present, the C-5 is the only US aircraft capable of carrying outside cargo such

### AIRLIFT FORCES

<u>MAC</u>		<u>CRAF</u>	
<u>TYPE</u>	<u>NUMBER</u> (ACTIVE / RESERVE)	<u>TYPE</u>	<u>NUMBER**</u>
C-5	70 / 0*	DOMESTIC	44
C-141	234 / 0*	ALASKAN	12
C-130	218 / 294	SHORT-RANGE INTERNATIONAL	28
C-7	0 / 16	LONG-RANGE INTERNATIONAL (PASSENGERS)	215
		LONG-RANGE INTERNATIONAL (CARGO)	188

\* C-5 AND C-141 AIRCRAFT ARE JOINTLY OPERATED BY ACTIVE AND ASSOCIATE RESERVE UNITS.  
\*\* THE CRAF CONSISTS OF THREE STAGES. NUMBERS SHOWN ARE CRAF STAGE III.

AS OF 1 DECEMBER 1981

CHART A - 1

as self-propelled howitzers, fighting vehicles, and attack helicopters. To preserve this capability, the C-5 force is undergoing a wing structure modification to extend aircraft service life by 30,000 hours. The FY 1983 Budget request also contains funding for C-5/C-141 spare parts which will enable the force to attain objective wartime utilization rates by FY 1986.

Effective use of airlift aircraft requires adequate aerial port manpower and materiel handling capabilities. Current funding will increase manpower and materiel handling equipment to balance aircraft and aerial port capability by FY 1985. Initiatives include the acquisition of wide-body aircraft handling equipment and other aerial port support equipment required for conducting airlift operations in remote areas.

### Sealift

The strategic sealift force consists primarily of those ships listed in Chart A-2. During a crisis requiring increased sealift assets, the Military Sealift Command controlled fleet, augmented by chartered ships from private industry, would be the first sealift force available. Ready Reserve Force (RRF) ships would next become available. The RRF, a component of the National Defense Reserve Fleet (NDRF), is a joint Navy-Maritime Administration program designed to have inactive reserve ships manned and ready for receiving cargo in 5 to 10 days. Next, the approximately 200 US Merchant Marine (USMM) ships enrolled in the Sealift Readiness

be activated within 21 to 60 days; they have less capability than those in either the USMM or the RRF. In a NATO emergency, the European NATO Allies could provide over 400 ships for the reinforcement of Europe.

Efforts are being made to improve sealift responsiveness in support of contingency planning for both NATO and Southwest Asia. These efforts involve increased planning and coordination with the Maritime Administration (MARAD). The objective is to insure that ships can be marshalled in a timely fashion from the USMM to augment MSC peacetime organic sealift. The RRF is also being upgraded and is programmed to grow to over 40 modern and capable cargo vessels by FY 1985.

In a Southwest Asia emergency, the US may only have the use of its own sealift capability. The difficulties associated with quickly transporting military equipment vast distances to potential crisis areas dictate that some ships be pre-positioned near the Southwest Asia littoral. To meet this requirement, seven near-term pre-positioning ships (NTPS) have been moored at Diego Garcia in the Indian Ocean since August 1980. These ships carry unit equipment; supplies; petroleum, oils, and lubricants (POL); and water for 15 days support for one Marine Amphibious Brigade, as well as ammunition, POL, and water for early deploying Army and Air Force units. These seven original NTPS ships have been augmented by six additional vessels to increase selected combat unit support to 30 days. Under the Maritime Pre-positioning Ships Program, part of this 13-ship Near-Term Pre-positioning Force will eventually be replaced by commercial ships that will carry pre-positioned equipment for three MABs.

### SEALIFT FORCES

	DRY CARGO	TANKERS
MSC CONTROLLED FLEET	12	19
U.S. MERCHANT MARINE	158	119
READY RESERVE FORCE	31	8
NATIONAL DEFENSE RESERVE FLEET*	142	8
NATO POOL**	400	0

\* ALSO INCLUDES 17 PASSENGER SHIPS AND 6 LANDING SHIPS TANK  
 \*\* 400 OUT OF A POOL OF OVER 800 COULD BE MADE AVAILABLE FOR NATO REINFORCEMENT

AS OF 30 SEPTEMBER 1981

CHART A 2

Program (SRP) could be called up. The SRP provides time-phased delivery of USMM ships for defense purposes in situations where ship requisitioning has not been authorized. Following a Presidential declaration of national emergency, the remainder of the USMM and selected US owned foreign flag ships could be requisitioned under the Merchant Marine Act of 1936. Finally, the remainder of the NDRF could be activated under the authority of the Merchant Marine Act of 1936. Most NDRF ships are World War II Victory Ships which could



USNS MERCURY, N.T.P.S.

The Navy has acquired six high-speed, high-capacity SL-7 container ships and plans to acquire two more in FY 1982. These 33-knot vessels require conversion from container to roll-on/roll-off configuration to load and offload Army unit equipment rapidly for transport to Europe or elsewhere.

Since a deployment of US forces into Southwest Asia may have to rely upon underdeveloped, damaged, or nonexistent port complexes, various cargo handling

facilities and support systems are being developed and procured. These systems include Army logistics-over-the-shore equipment, such as the Lighter Air Cushion Vehicle and bulk POL Tactical Marine Terminal and Navy Amphibious Logistic System equipment. The latter includes the Container Off-Loading and Transfer System and the Offshore Bulk Fuel System. A barge-carrying ship is also required to carry outsize temporary port facility equipment.

## **SPECIAL OPERATIONS FORCES**

US special operations forces have great potential to bridge the gap in our national strategy at the pre-crisis and low-intensity end of the conflict spectrum, as well as complement other forces in times of war. Such forces have broad applicability to deterrence and defense requirements at all levels of conflict. In particular, special operations forces help deter Soviet and surrogate initiatives in the Third World by their capability to project US power where a larger conventional US military response may be inappropriate, infeasible, or premature. The utility of these forces, a function of their rapid deployability, flexibility, acceptability, and relatively low cost, helps to broaden national policy choices. Special operations forces in the structure today include the following Active and Reserve Component elements: Army — Special Forces, psychological operations units, counterterrorist and civil affairs units; Air Force — Special Operations Forces; and Navy — unconventional warfare units (Naval Special Warfare Groups, SEAL Teams, Special Boat Units, and Underwater Demolition Teams).



**ARMY SPECIAL FORCES**

To insure that special operations forces are capable of performing the demanding missions which might be assigned them, the procurement of modern mission-unique equipment must continue. Special emphasis

should be placed upon the development of a system for procuring off-the-shelf items, enhancement of USAF special operations aircraft, modernization of equipment to support military psychological operations, and R&D support of special operations requirements.

The current special operations forces levels reflect a serious shortfall in the number and types of units to meet requirements now and in the remainder of the decade. To offset this critical shortfall, a measured expansion of special operations forces is required.

## **LOGISTICS**

Logistic support of dispersed forces continues to be a major constraint on the ability to meet US military objectives. Force modernization and peacetime readiness are of little value without the ability to sustain those forces in wartime. The current DOD priority for the improvement of the logistics support posture is encouraging. It is essential that these positive trends continue in order to achieve a healthy worldwide logistic base in the foreseeable future. Additionally, the trend toward increasing centralization and consolidation of Service logistics functions in pursuit of peacetime economies must be balanced with its impact on the capability of forces.

### **Southwest Asia**

The United States must be capable of deploying and supporting military forces in this region in order to protect US and allied interests and sources of energy. The requirement to support a force deployed to Southwest Asia represents a significant logistics task, since the force would be distant from CONUS bases and established supply channels. Long lines of supply, the harsh environment, and lack of existing support within the region are formidable obstacles that must be overcome to support a force operating in Southwest Asia. Both near- and long-term actions will be required to insure US forces receive the necessary levels of support.

Although pre-positioning requirements have been met partially through afloat storage, the US must establish a network of land-based storage and transportation facilities to resupply combat and support forces. Host nation support agreements must be negotiated to provide facilities and rights of access, and military construction efforts must be continued. Completion of the current program and additional planned construction will provide facilities for pre-positioning of POL and munitions, and for other logistic support of the RDJTF.

### **Material Resources**

Pre-positioned War Reserve Materiel Stocks (PWRMS) are essential to sustain combat forces world-

wide. Although PWRMS realized a slow but steady improvement in FY 1981, a continuing effort by the US and its allies is required to achieve desired levels of theater war reserve stocks. Gradual improvements in ammunition stocks parallel those of PWRMS; however, a sustained program of improvement is required in this area as well.

#### **Petroleum**

An ambitious inventory buildup program has brought the Defense Logistics Agency (DLA) wholesale fuel inventory to over 84 percent of the DLA wholesale fuel requirement. Further, increases in peacetime operating stocks and war reserves are planned for the budget and program years.

DLA has taken several steps to provide an assured supply for DOD mobility fuel requirements. Improved contracting procedures have been instituted and a Department of Energy commitment of 38,000 barrels per day of Naval Petroleum Reserve crude oil, with a potential increase of 100,000 barrels per day in April 1982, will provide 28 percent supply source assurance. Initiatives which enhance our POL posture and reduce dependence on foreign oil deserve continuing support.

#### **Medical Support**

Peacetime medical care continues to improve, but wartime capabilities remain inadequate. In the event of a major conflict, the US would be critically short of hospital beds and surgical operating rooms, and would experience difficulty in meeting medical logistics requirements. The staffing of theater medical units would require a significant drawdown of CONUS medical personnel, who would have to be replaced by civilian health care specialists. FY 1982 Service initiatives, when combined with FY 1983-1987 programs, are encouraging. Major medical programs which will improve multi-theater and RDJTF support include an increased hospital capability both ashore and afloat, additional host nation support, and the DOD-initiated Civilian Military Contingency Hospital System. The ability to enhance peace-



**MEDICAL UNIT SELF-CONTAINED TRANSPORTABLE**

time medical services and meet wartime medical requirements depends on the support for approved current and outyear programs.

#### **Construction**

While the FY 1981 and FY 1982 Budgets reversed underfunding trends of previous years and provided increased support for construction of necessary new facilities, funding for the modernization and replacement of existing facilities, particularly overseas, still lags far behind the requirement. The living and working conditions of personnel continue to be substandard in many locations, exacerbating retention and readiness problems. Additionally, the ability to mobilize rapidly is being degraded as World War II facilities become unusable or are deleted from the inventory.

Facility requirements can be met only through military construction (MILCON), host nation support, or the NATO Infrastructure Program. Host nations have been responsive to US needs and provided facilities throughout Europe and in the Far East. Land has been provided for infrastructure projects such as pre-positioning of materiel configured to unit sets (POMCUS), ammunition, and war reserve materiel storage. At a number of locations, joint use agreements have been concluded for Collocated Operating Bases (COBs). While there has been some success in obtaining facilities from its allies, the US is continuing to press for additional facilities to implement the master restationing plan and provide adequate family housing for US personnel.



**POMCUS**

The NATO Infrastructure Program only provides for the minimum military requirement, carefully spelled out in NATO criteria and standards. NATO is providing facilities for new systems such as PATRIOT, ground-launched cruise missiles, and PERSHING II, and is continuing to support minimum essential requirements for COBs, POL, and restoration of existing NATO facilities. The US is taking the initiative to convince the Allies of its needs and the requirement to increase funding for

support of new initiatives as well as previously approved but unfunded projects.

MILCON appropriations are required for those facilities not provided by host nations or through the NATO Infrastructure Program. The MILCON program, which addresses US requirements, demonstrates US resolve and provides bargaining power for more host nation construction.

## EXERCISE PROGRAMS

Joint and combined exercises are a primary means of evaluating and insuring total force readiness. Exercises test the US ability to respond to contingencies with appropriate levels of force and provide valuable experience in logistic and tactical force employment, including operations under unfamiliar environmental and geographic conditions. Joint exercises are essential for testing operation plans, improving C<sup>3</sup> interoperability, and meeting joint readiness and training objectives. Combined exercises serve the same purpose, in addition to evaluating defense arrangements with US allies. These exercises are directed or coordinated under JCS guidance to preclude redundancy in exercise objectives and over-commitment of forces. In FY 1981, 17 joint/combined exercises were directed by the JCS; 69 required scheduling coordination by the JCS; and numerous others were conducted by the commanders of unified and specified commands.

Exercise OCEAN VENTURE 81, the largest US maritime exercise in recent years, took place in the waters of the South Atlantic, Caribbean, North Atlantic, and Baltic Sea from August through October 1981. More than 120,000 personnel, 250 ships, and 1,000 aircraft from 14 countries participated in the exercise, which was designed to demonstrate and improve the capability of US and Western maritime forces to protect and maintain free use of sea lines of communication. While OCEAN VENTURE 81 was primarily a maritime exercise, units from all the Services and the Coast Guard participated. The exercise addressed all aspects of maritime operations, including naval battle group, maritime air, Marine amphibious, and sea surveillance operations. In addition, exercise events included Army airborne and air assault operations, and Air Force airlift and tactical air operations.

In Exercise TEAM SPIRIT 81, US Army, Navy, Air Force, and Marine Corps units joined with Republic of Korea counterparts for joint/combined maneuvers involving over 100,000 troops. The exercise involved forces currently stationed in Korea, other locations within the Pacific Command, and CONUS. The purpose of TEAM SPIRIT was to exercise deployment, reception

and employment of ROK and US forces responding to possible contingencies on the Korean Peninsula. US participants included forces stationed in Korea, Army elements from Hawaii and CONUS, Seventh Fleet units, to include a Navy/Marine Amphibious Task Force, and Air Force tactical fighter units from the Pacific and CONUS.



TEAM SPIRIT

In Exercises REFORGER 81 and CRESTED CAP 81, nearly 20,000 soldiers and airmen and 27,000 tons of equipment were sent from the US to Europe, where they joined 30,000 European counterparts in a demonstration of wartime reinforcement. REFORGER 81, the thirteenth in the series, was a strategic mobility exercise designed to test and evaluate plans, capabilities, and support agreements between military and civilian transportation agencies in both the US and Europe. REFORGER also tested the ability of Europe-based units to link the reinforcing units up quickly with their deployed or pre-positioned equipment. In CRESTED CAP 81, the Air Force tested plans, agreements, and procedures for rapidly receiving and employing dual-based tactical fighter units in Germany. After arriving in Europe, both the REFORGER and CRESTED CAP units participated in the annual NATO series of ground and air exercises, AUTUMN FORGE.



REFORGER

**BRIGHT STAR 82**, conducted in Southwest Asia in November and December 1981, continued the testing of the RDJTF in an exercise involving five countries (US, Egypt, Somalia, Sudan, and Oman) (Map A-1). The purpose of **BRIGHT STAR 82** was to exercise RDJTF headquarters command and control of a deployed joint task force, provide an interface between senior US and host nation officials, familiarize the RDJTF with environmental and operational characteristics of the region, evaluate logistics and communications concepts, and provide a highly visible display of US resolve and ability to protect vital interests in Southwest Asia.



**BRIGHT STAR**

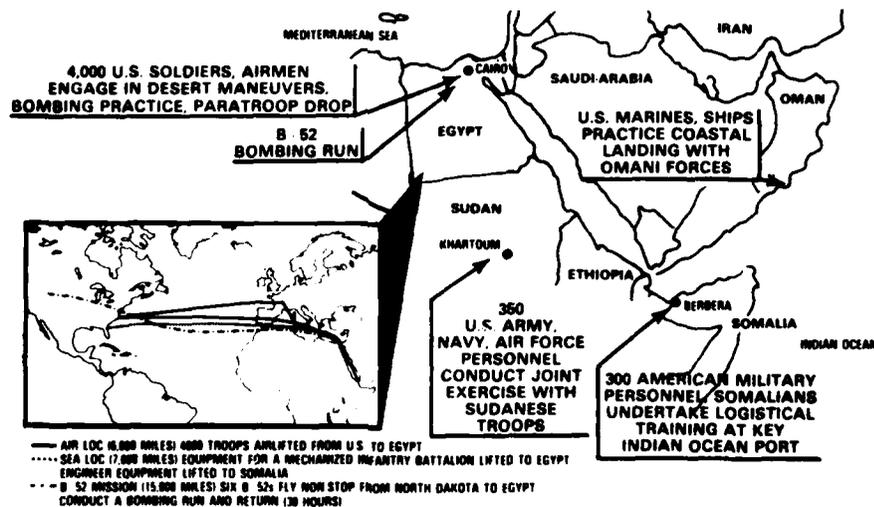
In addition to joint and combined exercises, **FUELEX-81**, a politico-military simulation designed to test the US Government's ability to identify and resolve defense fuel needs in an energy crisis short of war, was conducted during November 1981. The simulated crisis, which posed a crude oil interruption of some 2.3 million barrels a day to the US, was addressed by senior level players from interested government agencies in Washington, industry, and the academic community. While the current approach of allowing the free market to react to a shortfall with minimum government intervention was reaffirmed, the need for a better organization to handle the energy security problem on a government-wide basis was recognized.

Twenty-one JCS-directed and 45 JCS-coordinated exercises are scheduled for FY 1982. These exercises will complement the FY 1981 program, increase emphasis on the RDJTF, build upon Service training, and support military strategy and national policy for FY 1982.

**ALLIED FORCE CONTRIBUTIONS**

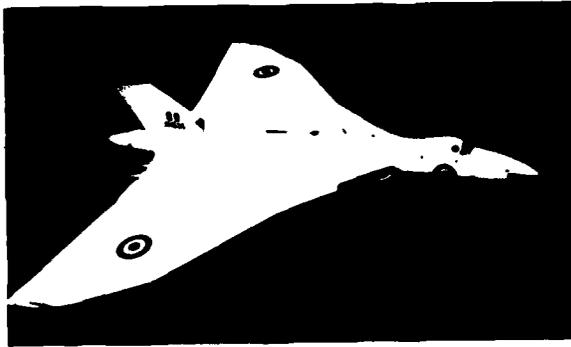
Wherever possible, the US combines its military resources with those of its friends and allies to take collective action to defend mutual interests. US allies, particularly those in NATO, contribute significant forces, bases, and host nation support for the defense of the free world.

**OPERATION BRIGHT STAR**



**MAP A-1**

The United Kingdom and France are the only allies possessing strategic nuclear weapons. The British possess strategic bombers and SSBNs; France possesses its own TRIAD consisting of intermediate-range ballistic missiles (IRBMs), strategic bombers, and SSBNs. While French strategic forces remain under national control, British nuclear forces are committed to NATO.



VULCAN BOMBER

The NATO allies contribute approximately 1,600,000 active duty ground force personnel. In addition, there are approximately 2,100,000 reserve force personnel. These figures do not include French forces, which consist of 325,000 active ground troops and 215,000 reserves. Within Allied Command Europe, the forces in the Central Region are of the highest quality. The Northern Region has the smallest troop density and is most dependent on mobilization and outside assistance. The Southern Region has a large troop density, but its forces field large amounts of obsolete equipment. Improvements are needed by the Allies in the areas of air defense; protection against nuclear, biological, and chemical weapons; and electronic warfare capabilities.

Non-US NATO navies are generally not designed to project offensive power, but play an important role in ASW and mine countermeasure operations. Non-US NATO navies contribute over 500 naval principal combatants, patrol, mine, and amphibious warfare ships. While overall numbers of principal surface combatants, attack submarines, and amphibious ships have remained fairly constant, total numbers of hulls and total fleet tonnage are decreasing. Technological improvements will offset the numerical decline in some cases, but not all.

NATO's European members contribute approximately 3,000 tactical aircraft to the Alliance. This contribution is being improved qualitatively as many NATO members acquire new aircraft and weapons systems. The European F-16 and TORNADO aircraft programs have shown that the European members of NATO are willing and capable of improving their capabilities

through cooperation. Consortium efforts have reduced production and development costs, allowing member countries to acquire modern aircraft in an era of rapidly escalating weapons costs.

NATO's overall capabilities are improving as a result of equipment modernization; however, there is still a need for member countries to procure the sophisticated weapons required to counter improved Warsaw Pact aircraft. Many of NATO's interceptor aircraft are not capable of operating in bad weather conditions owing to the lack of air intercept radar and radar-guided missiles. There is also an unfilled requirement to procure those systems necessary to operate in a dense electronic warfare environment.

On the other side of the world, Australia and New Zealand, although possessing small armed forces, contribute significantly to US objectives in East Asia and the Pacific. Their contributions are direct, through commitments to the Five Power Defense Arrangement (FPDA) and ANZUS Alliance, and indirect, through political, economic, and defense cooperation with ASEAN and the Pacific Island states. Under the aegis of the FPDA, two Australian tactical fighter squadrons are stationed in Malaysia and New Zealand's only fully operational combat battalion is deployed to Singapore. Withdrawal of both groups is planned for the late 1980s. This withdrawal does not indicate decreased commitment, and will be balanced by increased multinational exercises involving air, ground, and naval forces. In response to the Soviet invasion of Afghanistan, Australia has taken several military initiatives under the auspices of the ANZUS Alliance. Australia has increased its Air Force maritime patrols and Navy Indian Ocean deployments; offered to increase US Navy use of Australian facilities, including consideration of USN homeport facilities in Perth, Australia; and agreed to overflights and stop-over privileges for US Air Force B-52s conducting Indian Ocean surveillance missions. Australia and New Zealand contribute significant amounts of defense cooperation and economic aid to other nations in the region. This aid provides a valuable avenue for influence among nonaligned nations and serves as an alternative to Soviet/East Bloc support. Australia and New Zealand possess the best capability for assisting US power projection into the Pacific Islands in response to crises there.

The Japanese Self-Defense Force (JSDF) is regarded as a strictly defensive force and is not permitted to develop or maintain strategic offensive weapons such as long-or medium-range ballistic missiles, attack carriers, or long-range bombers. Japan also adheres to three principles with respect to nuclear weapons: not to possess them, manufacture them, or allow their entry into the country.

The Republic of Korea is allied with the United States under the 1954 Mutual Defense Treaty, which declares that an attack on the ROK would constitute a danger to US peace and safety. A ROK/US Combined Forces Command (CFC) was established in 1978. The Commander in Chief, UN Command, is the Commander in Chief of the CFC (CINCCFC); the CFC staff is composed of approximately 50 percent US and 50 percent ROK personnel. During peacetime, the CINCCFC exercises operational control over designated combat forces through component commanders.

While the strength of the ROK Army declined during the past decade, firepower, mobility, and communications have improved. Firepower has been upgraded through the acquisition of upgraded tanks, M-16 rifles, field artillery pieces, antitank guided missiles, anti-aircraft guns and missiles, and HONEST JOHN rocket launchers. As a result of a reduction in the combat-to-support ratio, the number of field artillery battalions has nearly doubled. Mobility has gradually improved, with increases in wheeled and tracked vehicles. Communications have improved significantly as the result of emphasis within security assistance programs and ROK domestic production of some military radios.

The ROK Navy has gradually increased its inventory over the last 5 years. Coastal patrol capabilities have



REPUBLIC OF KOREA AIRBORNE TROOPS

been upgraded by the acquisition of patrol boats from the US and indigenous construction. Planned improvements will correct many present deficiencies, but the ROKN will continue to be plagued by aging ships and equipment.

The ROK Air Force's overall air defense and ground attack capabilities have improved steadily since the inception of a modernization program in 1971. Introduction of F-4Ds in 1970 and of F-5Es beginning in 1975 has resulted in an increasingly sophisticated fighter force.

## APPENDIX B: OTHER MAJOR FORCES AND ISSUES

### INTRODUCTION

The primary purpose of this appendix is to provide additional details on the military forces of the Soviet Union, the major threat to US security interests. This appendix also provides an expanded discussion of Cuban military capabilities and activities, international terrorism, and Chinese armed forces.

### SOVIET UNION

#### Important Soviet Military Concepts

##### Combined Arms Warfare

The Soviet concept of combined arms operations involves *more than the joint use of weapon systems and forces*. It is meant to insure that all required systems and forces are brought to bear in a unified, effective manner at Front, theater, and national levels of command. The concept, particularly at Front or theater levels, is broader and more structured organizationally than the Western concept, which envisions joint and cooperative employment of ground, air, and naval forces to achieve an objective.

The Front is the largest field formation in wartime. It is a tactical and administrative unit the size and composition of which may vary, depending upon the situation. A Front could be composed of three to five combined arms armies and one or two tank armies, as well as aviation, airborne, air assault, naval formations, and other combat and support forces. Combined power is



AIRBORNE TROOPS IN TRAINING

applied in accordance with a fully integrated plan. To insure control, the Front commander is responsible for carrying out missions approved by the General Staff. He is responsible for overseeing and coordinating the operations of his units and those of other Services subordinated to his command.

One Front or as many as five may exist in a Theater of Military Operations (TVD). The High Command of

Forces in a TVD is commanded by at least a three star general directly responsible to the Soviet General Staff. The commander is supported by a combined arms staff with the responsibility for overseeing and coordinating activities of the various strategic formations.

At the national level, the General Staff controls the operations of the five Services. The individual Service chiefs are responsible in peacetime for the training and support of troops, development of tactics, and acquisition of weapon systems. In wartime, the same responsibilities would apply, but the General Staff would act as executive agent of the national leadership and adopt plans for control of the forces. Thus, the Soviets have structured their forces to form a unified command under the General Staff. This highly controlled command arrangement allows them to apply all elements of their military power when needed.

##### Projection of Power

The Soviets view the projection of power as the application of foreign policy in a much more comprehensive way than commonly understood in the West. The occupation of Afghanistan stands out as a clear demonstration of Soviet power projection in peripheral areas. Beyond this, approximately 12,000 Soviet military personnel are stationed in 24 countries (excluding Afghanistan, Cuba, Laos, and Vietnam), where they play a central role in organizing, training, and penetrating the clients' armed forces. In the first instance, Soviet power projection involves the capability and willingness to deploy operational military forces beyond Soviet borders. More



BMD IN AFGHANISTAN

importantly, Soviet power projection also allows development of surrogates and friendly governments. Subversive operations of Cuban and Nicaraguan insurgents in Central America pose new challenges for Western nations. About 35,000 Cuban military personnel, some 20 percent of Cuba's regular forces, are stationed as Soviet proxies in nearly 20 countries.

The Soviets project power through other integrated elements: traditional state-to-state activities; military aid; treaties and legal ties; support for terrorists and pro-

Soviet guerrilla groups; military sales and economic aid; cultural, media, and educational diplomacy; Committee for State Security of the USSR (KGB) and Soviet General Staff Intelligence Unit (GRU) operations; and the use of disinformation, propaganda, and forgery. The coordinated use of these tools allows Moscow to develop an infrastructure of influence in a country, react rapidly to changing situations, and penetrate areas normally beyond the reach of military forces.

The Soviets also reap advantages from other nations whose interests coincide with Moscow's. The Soviet Union has signed twelve treaties of friendship and cooperation since 1971, ten of which remain in force. Signatories of these treaties have received substantial Soviet military and economic assistance. Several East European countries have extended the Soviet Bloc's influence by signing similar accords with Angola, Ethiopia, Mozambique, and South Yemen.

### Strategic Offensive Nuclear Forces

For the past two decades, the Soviet Union has devoted substantial resources to the development and deployment of ICBM and SLBM forces, and to a lesser extent, deployment of an intercontinental bomber force. As a result of these efforts, the Soviet Union has moved from a position of relative inferiority in the strategic nuclear field to a position of equivalence, or superiority, in many weapon systems.

### Intercontinental Ballistic Missiles

The Soviet Union has nearly completed the deployment of fourth generation ICBMs (SS-17, SS-18, SS-19) (Chart B-1, Map B-1), with approximately half of the 1,398 deployed launchers now containing new missiles. New missile silos are considerably harder than earlier versions, and thus potentially less vulnerable. The re-

#### SOVIET ICBM FORCE

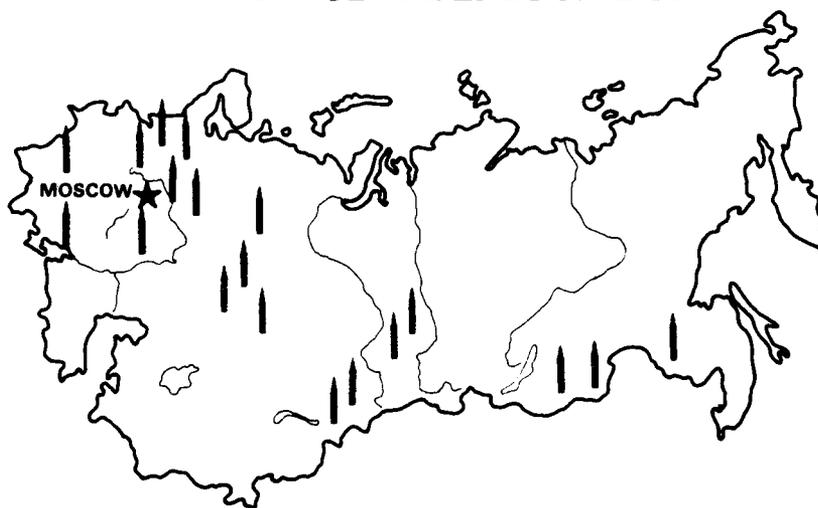
SYSTEM	INVENTORY
SS - 11	580
SS - 13	60
SS - 17	150
SS - 18	308
SS - 19	300
	<u>1,398</u>

AS OF 1 JANUARY 1982

CHART B - 1

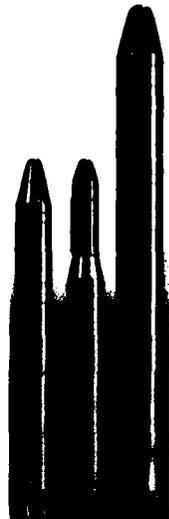
mainder of the force consists of older generation SS-11s and SS-13s. Most of the RVs are on the fourth generation ICBMs, of which certain versions of the SS-18 and SS-19 have significantly improved accuracies. Also, the Soviets are apparently ready to begin flight testing of two new solid propellant ICBMs; either or both could reach IOC by the mid-1980s.

### SOVIET ICBM DEPLOYMENT



AS OF 1 JANUARY 1982

MAP B - 1



**DRAWING OF SS-19/17/18**

Conversion of all SS-9 launchers to the SS-18 configuration has been completed.

The retrofit of SALT II-accountable MIRVed launcher silos associated with the SS-19 is underway. The program to convert silos from SS-11 to SS-19 Mod 3 configuration will probably require several years to complete. There were little or no changes in the deployment of the SS-13 and SS-17. The majority of the 150 SS-17 launchers contain the four-RV MIRVed missiles.

According to accumulating evidence, the Strategic Rocket Forces may have plans to reconstitute and reload at least a portion of their silo-based ICBMs during a protracted nuclear conflict. Contingency plans for reloading and refiring of silos probably have been developed. The cold-launched SS-17 and SS-18 are well suited for refiring. Additional evidence supports the hypothesis that the hot-launch systems also have a reload and refire capability.

**Submarine-Launched Ballistic Missiles**

The Soviet Union has 70 modern SSBNs with 950 SLBM launchers. Of these, 62 SSBNs were accountable under SALT II. YANKEE-class SSBNs are routinely on station in the western Atlantic, or in transit; overlap may raise the number of units on patrol temporarily. DELTA-class SSBNs are normally on patrol in the Greenland, Norwegian, and Barents Seas.

The Soviets normally maintain YANKEEs in the eastern Pacific patrol area, with an additional unit in transit. DELTA I/III SSBNs are routinely on patrol in the Pacific. Both the SS-N-8, carried on DELTA I/II SSBNs, and the SS-N-18, carried on the DELTA III, can strike targets in



**DELTA SUB**

the United States from adjacent Soviet waters or even home ports. Readiness of the Soviet SSBN force is assessed as high.

The TYPHOON, latest class of Soviet SSBNs, commenced sea trials in 1981. The SS-NX-20 missile, which is to be carried by the TYPHOON, has been test fired. The TYPHOON will likely soon finish sea trials, but the complete weapon system probably will not be operational until the mid-1980s.

**Soviet Air Force Strategic Bombers**

The strategic bomber force consists of over 880 aircraft (Chart B-2). Bombers form the core of the force for strategic air operations in the European and Asian theaters. Three-fourths of the bombers remain poised

**SOVIET AIR FORCE BOMBER INVENTORY**

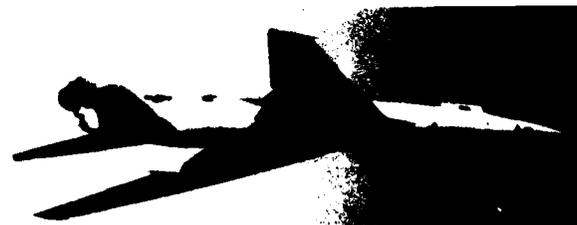
BEAR	100
BISON	75
BACKFIRE	70+
BADGER/BLINDER	600
	880+

AS OF 1 JANUARY 1982

CHART B 2

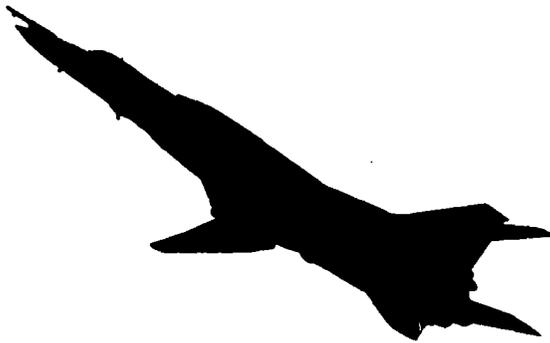
opposite NATO, while the remainder are located along the Chinese border.

BADGER, BLINDER, and BACKFIRE aircraft assigned to the Soviet Air Force strategic bomber force would carry out missions primarily against Europe and Asia.



**BLINDER**

BEAR and BISON bombers could perform theater roles as well, but are primarily reserved for strategic maritime



BACKFIRE



BEAR

or intercontinental missions. Age is a major limiting factor in the theater bomber force. About 75 percent of the bombers are over 10 years old.

Evidence would indicate that the Soviets are in the process of developing a new long-range bomber and probably a strategic cruise missile carrier. Additionally, the Soviets are developing a tanker version of their IL-76/CANDID transport aircraft.

The Soviets are also working on a program to develop long-range cruise missiles.

### Theater Nuclear Forces

The Soviet Union continues to expand and modernize its theater nuclear forces at a rapid pace. The Soviets view TNF assets in both strategic and tactical contexts, with some forces serving a dual function. In particular, TNF provide a layered threat to Europe, allowing concentrations of theater forces to exist independently of Soviet strategic forces. Soviet TNF doctrine stresses mobility and readiness.

Soviet and Warsaw Pact nuclear and nuclear-capable conventional force modernization programs continue. For every ground-launched missile or rocket system which existed prior to 1976, the Soviets have fielded or are in the process of deploying a replacement system with a new level of accuracy. Chart B-3 shows older Soviet theater systems on the left and replacement systems on the right.

The number of long-range TNF (longer-range INF) ballistic missile launchers has remained relatively stable over the years. The Soviets have deployed well over 260 SS-20 launchers since 1977 and deactivated over 200 SS-4 and SS-5 launchers.

In 1981, the Soviets initiated construction of additional new SS-20 bases, from which missiles are capable of striking NATO Europe. The remaining SS-20 deployments likely will be located in the western Soviet Union. The number of launchers probably will be less than SS-4 and SS-5 levels, but the number of RVs will be considerably greater because of the three-MIRV payloads (Chart B-4). If one refire is allocated each missile, the number of IRBM RVs have more than doubled between 1977 and 1982.

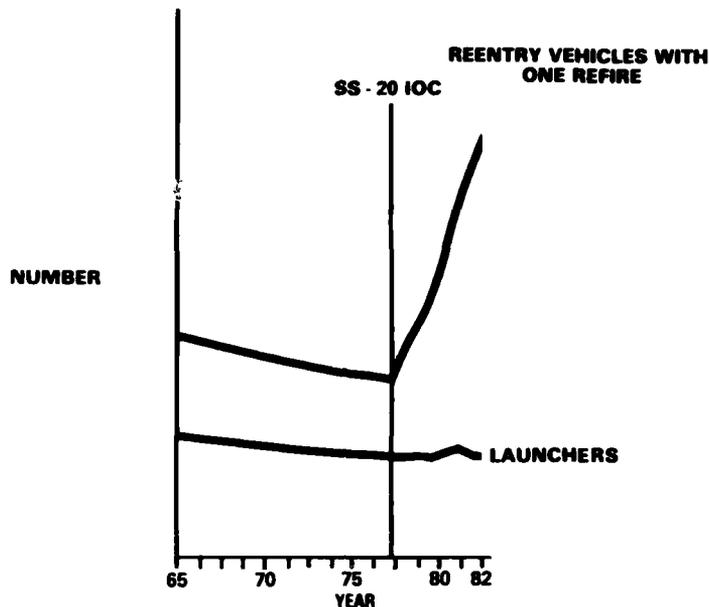
The wider deployment pattern of the SS-20 and its increased range capability over the SS-4 and SS-5 have

## MAJOR SOVIET THEATER MISSILES AND ROCKETS

<u>SYSTEM</u>	<u>RANGE</u>	<u>REPLACEMENT SYSTEM</u>	<u>RANGE</u>
SS-4	2900KM	SS-20	5000KM
SS-5	4100KM		
FROG	70KM	SS-21	120KM
SCUD B	300KM	SS-23	500KM
SS-12	900KM	SS-22	900KM

CHART B - 3

## SOVIET LONG-RANGE TNF (LONGER-RANGE INF) BALLISTIC MISSILE WARHEADS 1965-1982



NOTE: THE SYSTEMS INCLUDED IN THIS CHART INCLUDE THE SS-4, SS-5 AND THE SS-20. THE TOTAL NUMBER OF LAUNCHERS HAS REMAINED CONSTANT WITH THE INTRODUCTION OF THE SS-20 DUE TO A DRAW DOWN IN THE NUMBERS OF SS-4s AND SS-5s.

AS OF 1 JANUARY 1982

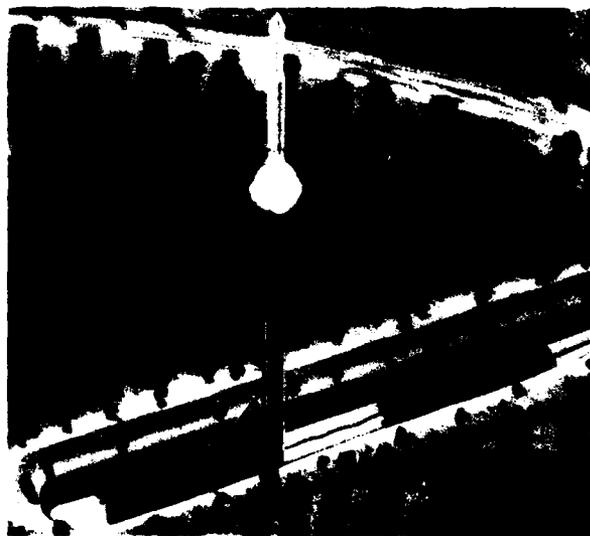
CHART B-4

enabled the Soviets to extend their LRTNF capability to the Middle East, Southwest Asia, and East Asia.

The growth in the number of Soviet short-range ballistic missile launchers and free-rockets-over-ground (FROGs) has also continued. There is currently no indication that the Soviets will draw down these older systems to counterbalance the introduction of newer systems.

### Strategic Defensive Forces

The Soviets have deployed the most extensive strategic air defense system in the world. This force poses a significant threat to penetrators of Soviet air space. Modification of existing systems, along with the development and deployment of new weapons, assure that the force capability will continue to improve.



SS-20

### Radar Surveillance and Detection

The Soviet air defense network has good detection and tracking capabilities under all-weather conditions against aircraft at medium-to-high altitudes. Radars with improved low altitude acquisition capabilities are not yet fully operational.

A major improvement in Soviet detection and tracking capability is expected from the deployment of an Airborne Warning and Control System. The system will extend detection over land and water and improve interceptor control capabilities.

### Surface-to-Air Missiles

The Soviets have about 10,000 SAM strategic launchers deployed at about 1,000 sites. The SA-1 system continues to provide primary air defense for Moscow from sites deployed in two rings around the city. Throughout the Soviet Union, the long-term drawdown of the SA-2 may resume due to replacement with the more capable SA-10. Meanwhile, SA-5 deployment has increased slightly, and the SA-3 force continues to convert from the two-rail to the four-rail launcher. Over half of the SA-3 sites now have four-rail launchers. Tactical SAMs, with better low altitude capabilities, would be expected to augment strategic defenses.

### Interceptors

Modernization of Soviet air defense aviation continues with the first operational deployment of the Modified MiG-25/FOXBAT and new deployments of the MiG-23/FLOGGER and MiG-25/FOXBAT. Older model



FLOGGER

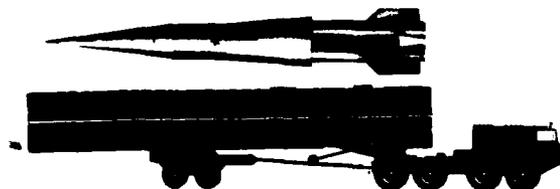


FOXBAT

SU-9/FISHPOT, MiG-17/FRESCO, and MiG-19/FARMER interceptors have been phased out of the active inventory. The Soviets have resumed modernizing regiments equipped with the YAK-28/FIREBAR.

### Ballistic Missile Defense

The program for upgrading ballistic missile defenses in the Moscow area continues. These defenses once consisted of four antiballistic missile (ABM) complexes with 64 ABM-1b/GALOSH above-ground launchers, but in late 1979, 32 of the launchers were dismantled. The Soviets could build to the 100 ABM launcher limit allowed by the 1972 ABM Treaty.



ANTI-BALLISTIC MISSILE

A new large phased-array radar is being constructed near Moscow. This radar probably will serve in a battle management role for the upgraded Moscow system, augmenting or possibly replacing existing DOG HOUSE and CAT HOUSE systems.

Other ballistic missile defense system components include the TRY ADD engagement radars at the Moscow complexes, peripherally located HEN HOUSE early warning radars, and new large phased-array early warning radars which are not yet fully operational. Phased array radars are superior to the HEN HOUSE network and probably are designed to close existing gaps in coverage.

### General Purpose Forces

#### Ground Forces

The Soviet Union maintains the world's most powerful ground force, totaling some 1.85 million personnel. Major formations include combined arms and tank armies, 10 corps, and over 180 active maneuver divisions. Some 30 divisions have been added since 1967.

The Soviets have developed and are now fielding new families of compatible and complementary weapons in all areas of their ground forces. A divisional reorganiza-

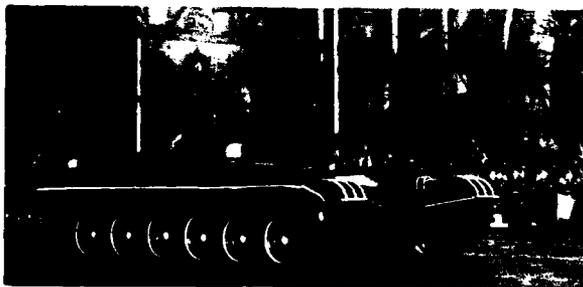


ARMORED PERSONNEL CARRIERS

tion program, which is now being implemented on a force-wide basis, provides a better balance of arms, es-

pecially in tank divisions. These developments provide the equipment and organization necessary for the type of combined arms combat the Soviets envision in a future war.

The Soviet Union still places primary emphasis on the tank. Deployment of the latest model main battle tanks, the T-64 and T-72, is continuing; these tanks now number approximately 10,000 or 20 percent of the active inventory. The follow-on tank, the T-80, which incorpo-



T-72

rates major advances in armor protection, mobility, and fire control, will be deployed to troop units in the near future.

A major expansion has occurred in ground support helicopter capabilities, based in large part on experience gained in Afghanistan. New units have been formed and existing units expanded. New models of helicopters include the HIND D/E, one of the world's most heavily armed ground attack helicopters.

The Soviet Union maintains the world's largest airborne force, currently seven divisions. The number of airborne amphibious combat vehicles (BMDs) in most of these divisions has increased. The operational characteristics and armament of the BMDs give the Soviet airborne forces an unprecedented capability for firepower and mobility compared to airborne forces of other nations, as well as the capability to conduct limited operations as mechanized formations. The Soviet Union continues to believe that large scale airborne operations are feasible and are best served by combining parachute and air-landing techniques.

The Soviet Union has formed a number of air assault brigades since 1979 at key locations in the Soviet Union, East Europe, and Afghanistan. These units, assessed to be Front or possible army level assets for special assault roles, can be either parachuted or air-landed on an objective.

A new 152mm artillery system was deployed in 1981. A towed gun is replacing older 130mm guns in some artillery units. Artillery battalions continue to be introduced into tank regiments, and self-propelled



152MM SELF-PROPELLED ARTILLERY

howitzers are beginning to replace towed versions in some regiments in East Germany.

Over 85 Soviet divisions are oriented against NATO. Twenty-five tank and motorized rifle divisions, including several in Afghanistan, are oriented toward Southwest/



ARMORED PERSONNEL CARRIER

South Asia; while over 45 are located in the Far East, the majority are oriented toward the Sino-Soviet border. The remaining tank, motorized rifle, and airborne divisions are considered a strategic reserve force. The non-Soviet Warsaw Pact has 53 divisions.

#### Air Forces

Soviet tactical air forces contain about 4,800 fixed-wing combat aircraft, excluding a significant number of combat trainers. A large percentage are located in East Germany, Poland, Czechoslovakia, and Hungary.

Continued deployment of FENCER and the new deployment of other ground support aircraft will significantly improve ground attack/interdiction capabilities.

#### Naval Forces

Operational forces are organized and distributed into four distinct fleets (Northern, Baltic, Black Sea, and Pacific) and the Caspian Sea Flotilla. Only the Northern and Pacific Fleets have direct access to the open ocean. It is to these two fleets that the Soviet Navy has allocated the majority of its general purpose submarine



**FORGERS**

force, including its nuclear-powered submarines and long-range reconnaissance and ASW aircraft.

By contrast, the Baltic and Black Sea Fleets are nearly landlocked, with access to both seas controlled by non-communist nations. While the primary tasks of these fleets include support of army operations on the flanks, some fleet forces, especially naval air bombers, have primary tasks beyond the flanks in the North and Mediterranean Seas.



**SOVREMENYY**

The Soviet Navy maintains a Mediterranean force averaging eight surface combatants, about 30 supporting auxiliaries, and a number of submarines. These units operate from and are supported by auxiliaries at anchorages in international waters. Additionally, repair facilities for Soviet naval units are available in Yugoslavia and Tunisia. Soviet repair ships provide limited support in Syria and Tunisia.

The Soviet Navy maintains a continuous presence in the Indian Ocean with a varying force level. Naval activity is concentrated in the southern Red Sea near the available repair facility at Dahalek Island; in the Gulf of Aden between the port of Aden, South Yemen, and anchorages near Socotra Island; and in the Arabian Sea, where units are deployed to monitor Western naval forces. The current force level, which includes four to six surface combatants, 20-25 auxiliaries and a number of submarines, is 15 percent below the highest level of 1980.

Since early 1979 the Pacific Fleet has conducted periodic deployments of surface combatants, auxiliaries,



**KIEV**

and frequently submarines in the South China Sea. These units, supported by facilities at Cam Ranh Bay and Da Nang, Vietnam, are well located to monitor US forces operating in or transiting the area. Soviet Naval Aviation (SNA) deploys maritime reconnaissance and ASW aircraft at Cam Ranh Bay and Aden, and also at Asmara, Ethiopia. Long-range reconnaissance aircraft also are deployed periodically to Cuba and Angola. In mid-1981 SNA deployed BADGER reconnaissance aircraft and MAY ASW aircraft to Syria for a joint naval exercise. These were the first SNA operational aircraft



**MAY**

to be deployed on the Mediterranean littoral since the Soviets were expelled from Egypt in 1972. Two MAY aircraft also deployed to a former US airfield at Tripoli, Libya, for operations over the Mediterranean Sea.

The Soviet Navy continues to rely heavily on missile systems for standoff antiship attack and fleet air defense. The long-range cruise missile deployed on the KIROV-class guided missile cruiser and OSCAR-class SSGN is intended for antiship attack. A naval version of the SA-10, is also carried by the KIROV. This long-range missile is the first Soviet naval SAM to offer a simultaneous, multiple target tracking and engagement capability.

## Special Capabilities

### Electronic Warfare

Electronic warfare is part of established Soviet military doctrine which the West has labeled radio electronic combat. Soviet REC is aimed at systematically disrupting vital enemy electronic control at critical times through the integrated use of firepower, jamming, and deception. The Soviets intend to attack targets based on the degree of threat each poses to Soviet forces.

The Soviets continue to improve their capability to implement this doctrine through investments in equipment and training. Technological advancements have been made in ECM equipment and electronic support measures used by air, ground, and naval forces.

The Soviets dedicate numerous aircraft to EW as ground support or escort and standoff jammer platforms. Since 1979 the Soviets have increased their emphasis on offensive, penetrating air forces equipped with ECM and accompanied by aircraft dedicated to jamming. They have made a massive investment in electronic counter-countermeasures, as well as lethal and nonlethal countermeasures. The Soviet Navy is the world's best equipped in the field of EW and supports a worldwide SIGINT collection program. Ground forces continue to introduce new jammers and a new series of improved SIGINT vehicles. Fixed jammers are located strategically throughout the Soviet Union.

### Chemical Warfare

The Armed Forces of the Soviet Union (and the Warsaw Pact in general) are better equipped, organized, and trained than any other military forces in the world to conduct chemical warfare operations. Soviet doctrine



TROOPS OUTFITTED FOR CW OPERATIONS

calls for the use of toxic CW agents in both offensive and defensive situations. Chemical weapons are to be used in close coordination with high explosive and nuclear strikes, and may be used independently when their special effects can provide a tactical advantage.

Warsaw Pact nations have an extensive and well developed chemical processing industry. CW materiel is stockpiled in major depots throughout the Warsaw Pact area. Research underway in CW includes development of agents, delivery system evaluation, and technology to improve CW effectiveness.

For the last five years the Soviet Union has used chemical warfare agents, either directly or through surrogates, in Southwest Asia and Southeast Asia. In Afghanistan Soviet forces and Afghan forces loyal to the Soviet-backed regime are believed to have made chemical attacks using riot control agents. In addition, an incapacitant that induces short periods of unconsciousness with no apparent aftereffect and lethal chemical agents have been reportedly used there. In Laos and Kampuchea, the use of riot control agents and possibly lethal chemicals has been reported. Lethal mycotoxins have been used in Kampuchea by forces who are clearly supported by the Soviets.

The Soviets emphasize unit as well as individual NBC protective training; division-size units have their own training areas. The objective is to prepare personnel psychologically and cause them to experience some stress while learning the technical skills needed to operate in NBC environments. Up-to-date instruction materials are widely available and defensive training is comprehensive and realistic. The occasional use of live lethal chemicals adds realism and confirms a high standard of preparedness. The Soviets also conduct training for handling mass casualties.

Warsaw Pact troops have a variety of equipment designed to provide NBC protection. Individual items are adequate to provide protection from contamination for hours, days, or longer, depending on the nature and concentration of the contaminant. Antidotes are available to protect personnel against the effects of their own agents as well as those of NATO. The continued deployment of combat and support vehicles with collective chemical, biological, radiological (CBR) protection systems reflects Soviet concern for maintaining combat effectiveness in a toxic environment.

### Space Systems

The Soviet Union operates space satellite systems which support photo reconnaissance, ELINT reconnaissance, ocean reconnaissance, antisatellite functions,

missile launch detection, communications, meteorology, and navigation.

The Soviets have an operational antisatellite system deployed. The system has the potential to destroy satellites in high orbits. The Soviet Union has no operational space-based weapon systems.

#### Mobilization

The Soviet Union has created a mobilization system which integrates government agencies, the economic sector, the general population, and transportation systems. While geared for a rapid buildup and wartime commitment of military units and other resources to achieve a quick victory, the system is designed to accommodate extended and selective mobilization of all types of military and civilian resources.

Manpower policies require universal military service, which consists of active and reserve duty. Virtually all physically and mentally fit males between the ages of 18 and 50 are either on active duty or subject to reserve service. As a consequence, the Soviet Union has established a reserve pool numbering in the tens of millions. More than eight million men have been discharged within the last five years, a number which substantially exceeds requirements to fill understrength active units and meet other known expansion plans (Chart B-5). The mo-

#### PERSONNEL DISCHARGED FROM SOVIET MILITARY, 1976 - 1981

FUNCTIONAL GROUPING	PERSONNEL
COMMAND AND GENERAL SUPPORT	2,702,000
GROUND FORCES	3,210,000
GENERAL PURPOSE NAVAL FORCES	446,000
AIR FORCES	567,000
STRATEGIC ATTACK FORCES	549,000
STRATEGIC DEFENSE FORCES	914,000
	8,388,000

AS OF 1 JANUARY 1982

CHART B 5

bilization system can provide manpower and materiel to the military on a regional or local basis, or in the context of a general, country-wide mobilization.

The Soviet Union has established sizeable stockpiles of consumable supplies and war reserve equipment. The top priority supply items are ammunition and POL. Large dispersed stocks of these two items are maintained in depots and facilities under the control of tactical units, operational commands, military districts, groups

of forces, and Ministry of Defense. There are also plans to use civilian POL facilities to support military operations.

Major end items are designated principally as mobilization or strategic reserves. The former comprise materiel stocks intended to create new units or to serve as replacements. Strategic reserves consist of materiel stockpiles (or military contingents) under the control of the Ministry of Defense or Supreme High Command for use as supplementary resources. All Soviet force com-



IL-76/CANDID HEAVY TRANSPORT

ponents maintain materiel designated as war reserves. The most substantial reserves have been identified in the ground forces. In addition, there are identified mobilization equipment bases which contain sets of equipment suitable for division-size units; these assets represent a principal means of creating new divisions, but also could be used as replacement items.

Soviet doctrine calls for the maintenance of materiel reserves in quantities sufficient to support military operations until industry can increase production to levels adequate to sustain the armed forces. The extensive military materiel stockpiling effort is clearly aimed at this goal. The use of stocks from the strategic reserve and use of civilian POL would sustain operations longer. Substantial numbers of recently discharged reservists would be available to create new units or serve as replacements. The military manpower base greatly exceeds force expansion requirements.

#### Special Operations Forces

The Soviets maintain numerous special purpose forces for a variety of sensitive missions in both peace and war. These forces include KGB special security troops, Ministry of Internal Affairs Troops, Internal Troops, KGB sabotage teams, select Guards Airborne units under KGB control for contingency missions, and GRU special purpose troops (SPETSNAZ) organized in brigades and attached to military districts, groups of forces, and fleets. All these forces are capable of deploying outside the Soviet Union, although the principal

sabotage and direct action threat to NATO and CONUS is posed by KGB and GRU special purpose forces.

In wartime, KGB sabotage teams and GRU special purpose troops are intended to operate at great depth behind enemy lines, independent of regular forces, and conduct actions against key political, military, and economic targets.

The KGB is assessed to have responsibility for operational planning, coordination, and political control of all special purpose forces operating abroad in peacetime. Wartime missions of GRU special purpose troops are planned under the direction of the General Staff.

GRU special purpose troops are capable of operating in any theater of military operations. These forces are intended to support Front or fleet operations.

Soviet employment of special purpose forces in the period immediately preceding and during Warsaw Pact hostilities against NATO will not by itself prove decisive to the outcome of a theater war or larger conflict. However, these forces can seriously cripple or forestall an effective NATO military response and greatly contribute to the success of a Warsaw Pact theater offensive.

## CUBA

Cuba provides a unique threat to US interests in the Western Hemisphere because of its close ties with the Soviet Union and aggressive foreign policy. Cuba has the independent capability to project limited, but significant, military power in the Caribbean region. Havana has the capability of interdicting nearby sea and air LOCs. Additionally, over 12,000 Soviet personnel are stationed on the island, including the Soviet "brigade."

### Support of Revolution

Cuba has been active in exporting revolution for the past two decades; in all, the Castro regime has been involved with insurgents in at least 13 Latin American countries (five in Central America, four in the Caribbean, and four in South America). However, Cuban strategy has changed since the removal of President Somoza in Nicaragua in 1979. A new approach calling for uniting leftist groups in the region, training and equipping insurgents, and taking aim at existing governments is being orchestrated by Cuba, with the advice and support of the Soviet Union.

Havana has focused its aid on Nicaragua as well as increased its support to revolutionaries elsewhere in the hemisphere, including El Salvador, Guatemala, Honduras, and Colombia. In the last few years, Cuba has trained more than 2,000 Latin American insurgents.



OSA-1 BOAT

Cuba and the Soviet Union have provided ammunition, equipment training, limited funding, and advice to the insurgents.

### Conventional Forces

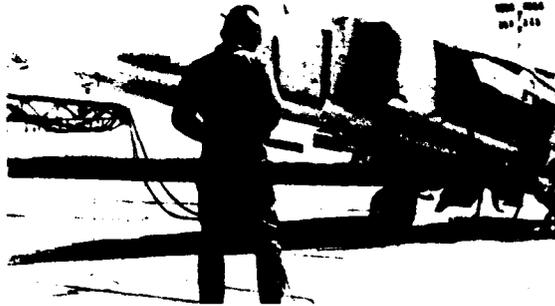
Cuba has the highest percentage of population in the military of any Latin American country; it can mobilize almost one million people out of a total population of just under ten million. The Cuban military has an active duty strength of about 130,000 personnel, plus about 100,000 ready reservists who can be mobilized on short notice. Cuba has secondary reservists who can be mobilized, less well-trained Territorial Militia, and personnel in the Civil Defense who would come under the military in wartime.

*Combat experience in Africa, intensive training at home, and the large volume of equipment deliveries from the Soviet Union have contributed to improved combat capabilities during the past few years. Elite special force units, the Ministry of Interior Special Troops and the Revolutionary Armed Forces Assault and Landing Brigade, could be used to project a rapid Cuban military buildup in the Caribbean Basin and therefore are potentially threatening to small countries in the region.*

The Cuban Army is the second largest in Latin America. Over 34,000 Cuban Army personnel are serving overseas. During the past few years the ground forces have undergone a reorganization which has placed great importance on mechanization and improved Cuba's ability to activate reservists for active duty.

The Cuban Air and Air Defense Force is primarily defense oriented, but has the capability to have a major impact in the Caribbean region. Approximately 200 MiGs are the backbone of this force. If Cuban fighters were to stage out of Central American or Caribbean airfields and those in Cuba, they could strike all of Central America, the Caribbean islands, parts of the southeastern US, and oil fields located in Mexico (Vera Cruz) and Venezuela. Cuba lacks long-range aircraft, but

its commercial airline provides excellent support for troop movement overseas. While considered short



MIG-23

range, Cuba's AN-26 transports could airdrop troops in Central America and in the western Caribbean islands. Some 2,000 air and air defense personnel are serving in Africa.

The Cuban Navy has recently acquired the ships needed to project force in a limited way beyond its traditional areas of coastal defense. Two FOXTROT-class submarines and one KONI-class frigate allow the Cubans to operate in the Caribbean, Gulf of Mexico, and North Atlantic.

## INTERNATIONAL TERRORISM

The increase in international terrorism the past 10 to 15 years reflects the efficacy of terrorism as a method of achieving political goals. Whether used as the primary means, as with such groups as the Red Brigades, or as one of many tactics, terrorism is widely used today to create instability in the industrialized West and Third World nations governed by pro-Western or anti-socialist regimes. Only occasionally is terrorism a problem in the Soviet Union and Eastern Europe; thus it must be seen as a threat mainly affecting the West and its sources of raw materials.

Terrorism can be viewed as an act undertaken by an individual or group whose cause is relatively well defined, or as a part of a larger international network with international backing. International terrorism affects national, regional, and even global affairs, and gives rise to increasing concern for the future. While the usual terrorist methods, such as hijacking, kidnapping, assassination, and bombing, are expected to continue, attacks against nuclear power or weapons storage facilities become more likely as the technology and training available to terrorists improves. Further, the possibility of terrorist acquisition and use of chemical weapons or materials, even in very crude form, should be given serious consideration.

## Soviet Involvement

While international terrorism is not confined to a particular country or region, it is evident that much support for this cause comes from the Soviet Union. Terrorism has been a central element of Soviet domestic control and support for external revolution since the earliest days of the Bolshevik movement. As a frequent component of armed subversion or national liberation, terrorism has become increasingly important to the Soviet Union since the advent of nuclear weapons. Because the usefulness of terrorism would be lessened should the Soviet role become known, Soviet proxies and the clandestine assets of the KGB, GRU, and East Bloc intelligence and security services are used to allow the Soviet Union to plausibly deny involvement.

Soviet supported terrorism is tailored for the area in which it is applied. In the West, this has usually meant use of a wide variety of groups which have the basic purpose of discrediting governmental efforts to protect the populace from terrorist activities. In the Third World, Soviet objectives are broader and may include revolution. The ability of Third World governments to react to terrorism is more economically constrained and available security forces are less sophisticated. Additionally, Western governments are usually unwilling to provide assistance beyond weapons and equipment sales.

By providing covert support to terrorist groups attempting the overthrow of pro-Western or anti-socialist governments, the Soviet Union has managed to exploit efforts of politically, ethnically, and racially diverse groups and to subordinate their goals to those of Soviet foreign policy. This use of power has strengthened Soviet influence in the Third World and correspondingly threatened Western, especially US, political and economic access. In Western Europe, the social intolerance of terrorist acts has necessitated increased security force presence and activity and a consequent reduction of public freedom. These factors have been exploited by the Soviets in carefully contrived campaigns against the US presence in Europe, the NATO Alliance, and conservative European political parties and figures. Soviet support of terrorism is never haphazard, and the Soviet Union is careful to conceal its involvement in terrorism through use of proxies.

## PEOPLE'S REPUBLIC OF CHINA

China continues to view the Soviet Union as the main threat to its security. About half its ground forces are arrayed in the four northern military regions bordering the Soviet Union and Mongolia. The Chinese recognize their inability to engage the Soviets successfully in com-

bat on open terrain and have thoroughly prepared for defense in favorable mountainous terrain. The effectiveness of Soviet mobility and firepower would be reduced on such terrain, while the Chinese could capitalize on their huge manpower assets to engage in close-quarter combat and night fighting.

China views its strategic missile force as an effective nuclear deterrent because its deployment strategy of mobility, hardening, and concealment poses targeting problems for any potential aggressor. This strategy enhances the survivability of some portion of the missile force for a significant retaliatory strike.

China's leaders disavow the first use of nuclear weapons. The small size of the missile force, limitations on accuracy, inflexibility of command and control systems, and overwhelming superiority of superpower strategic and tactical nuclear forces argue against a Chinese first use of nuclear weapons.

### **Strategic Offensive Nuclear Forces**

Most of China's deployed missiles are the CSS-1 and CSS-2 MR/IRBMs. The majority of the mobile MR/IRBM launch units will likely be dispersed to take advantage of terrain and camouflage and remain concealed during an enemy's first strike. China has deployed a limited number of limited-range CSS-3 and full-range CSS-4 ICBMs. Only the CSS-4 can reach targets throughout the US. The CSS-3 can reach targets throughout Asia, Eastern Europe, and portions of Alaska.

### **Strategic Defensive Forces**

The strategic defensive forces consist of interceptors, surface-to-air missiles, antiaircraft artillery, and a network of radars. The force is large, but its effectiveness is limited by a lack of sophisticated equipment and vulnerability to air attack. Only a small percentage of the interceptors have an all-weather capability, and air-to-air missile deployment is limited. China's radar coverage provides good early warning against aircraft flying at medium-to-high altitudes, but is limited against low-altitude targets.

### **General Purpose Forces**

The Army, with over four million men, is essentially a defensive, infantry-oriented force; it is supported by an armed militia of ten million men. About half of the

ground forces are assigned to main-force tactical maneuver units capable of engaging in operations anywhere in China. The remaining force is assigned to garrison, border defense, and internal defense units, which are neither equipped nor trained for major offensive operations. Major weapons and equipment deficiencies include limited antiarmor capabilities, poor tactical mobility, limited organic air defense, and poor logistical capabilities for large scale out-of-country operations.

Fighter bombers and medium-range bombers support ground forces by interdiction and ground attack. Other aircraft provide reconnaissance and airlift support. Some of the aircraft have a limited radar bombing capability. The airlift capability is hampered by the shortage of medium- and long-range transport aircraft. China's



**CHINESE IL-28 BOMBERS**

overall ability to conduct tactical air operations is limited by deficiencies in armament and communications.

China's naval power lies in the numerical strength of its 1,200 fighting units, including some 100 submarines deployed along the entire coastline. Land-based and seaborne naval assets are integrated into a coastal defense network. The main weakness of the naval forces is equipment obsolescence.

### **Force Modernization**

The threat posed by the technological superiority of Soviet weapon systems will determine China's military requirements for the 1980s. Until new equipment can be introduced, the Chinese will continue to rely on the essentials of People's War, combined with plans for a tenacious position defense of vital areas.

## GLOSSARY

AAA	— anti-aircraft artillery
AAW	— anti-air warfare
ABM	— anti-ballistic missile
AEGIS	— US Navy AAW weapon system
AFAP	— artillery-fired atomic projectiles
AFSATCOM	— Air Force Satellite Communications System
ALCM	— air-launched cruise missile
ALCS	— airborne launch control system
AMRAAM	— advanced medium-range air-to-air missile
ASAT	— anti-satellite
ASM	— air-to-surface missile
ASRAAM	— advanced short-range air-to-air missile (US)
AN/FPS-85	— long-range phased-array radar
AN/FSS-7	— SLBM detection and warning radar
ANMCC	— Alternate National Military Command Center
ASEAN	— Association of South East Asian Nations
ASROC	— ASW rocket
ASW	— anti-submarine warfare
AT	— anti-tank
ATB	— advanced technology bomber
AVF	— All Volunteer Force
AWACS	— Airborne Warning and Control System
BMD	— ballistic missile defense
BMD	— Soviet airborne amphibious combat vehicle
BMEWS	— Ballistic Missile Early Warning System
BWC	— Biological Weapons Convention
C <sup>2</sup>	— command and control
C <sup>3</sup>	— command, control, and communications
C <sup>3</sup> CM	— command, control, and communications countermeasures
CAS	— close air support
CBR	— chemical, biological, radiological
CD	— Committee On Disarmament
CDE	— Conference on Disarmament in Europe
CEWI	— combat electronic warfare and intelligence
CFC	— Combined Forces Command
CGS	— CONUS ground station
CHAMPUS	— Civilian Health and Medical Program of the Uniformed Services
CINCCFC	— Commander in Chief, Combined Forces Command
CINCPAC	— Commander in Chief, Pacific
CMMS	— Congressionally Mandated Mobility Study
COB	— collocated operating base
COBRA	— AH-1 attack helicopter
COMINT	— communications intelligence
CONUS	— continental United States
CRAF	— Civil Reserve Air Fleet
CSBM	— confidence and security building measures
CSCE	— Conference on Security and Cooperation in Europe
CSS	— combat service support
CTB	— comprehensive test ban
CVBG	— carrier battle group
CW	— chemical warfare
CY	— calendar year
DCS	— Defense Communications System

DCT	- Digital Communications Terminal
DEW	- distant early warning
DIVAD	- Division Air Defense
DLA	- Defense Logistics Agency
DMZ	- Demilitarized Zone (Korea)
DOD	- Department of Defense
DPRK	- Democratic People's Republic of Korea
DSB	- Defense Science Board
DSCS	- Defense Satellite Communications System Phase
DSP	- Defense Support Program
EC	- electronic combat
ECCM	- electronic counter-countermeasures
ECM	- electronic countermeasures
EHF	- extremely high frequency
ELINT	- electronic intelligence
EMP	- electromagnetic pulse
ER	- enhanced radiation
ERCS	- Emergency Rocket Communication System
EUR	- Europe Area
EW	- electronic warfare
FEMA	- Federal Emergency Management Agency
FIS	- foreign instrumentation signals
FMS	- foreign military sales
FPDA	- Five Power Defense Arrangement
FRG	- Federal Republic of Germany
FROG	- Soviet free-rocket-over-ground
FY	- fiscal year
GIUK	- Greenland, Iceland, United Kingdom
GLCM	- ground-launched cruise missile
GNP	- gross national product
GPF	- general purpose forces
GRU	- Soviet General Staff Intelligence Unit
ICBM	- intercontinental ballistic missile
IMET	- international military education and training
IMINT	- imagery intelligence
INF	- intermediate-range nuclear forces
IOC	- initial operational capability
IRBM	- intermediate-range ballistic missile
IRR	- individual ready reserve
JCS	- Joint Chiefs of Staff
JSDF	- Japanese Self-Defense Forces
KGB	- Committee for State Security of the USSR
km	- kilometer
kt	- kiloton
LANT	- Atlantic Area
LAW	- light antitank weapon
LOC	- line of communication
LOS	- law of the sea
LRTNF	- long-range theater nuclear forces
LUA	- launch under attack
LVT	- Landing Vehicle Tracked
MAB	- Marine Amphibious Brigade
MAC	- Military Airlift Command

MAF	– Marine Amphibious Force
MAP	– Military Assistance Program
MARAD	– Maritime Administration
MASINT	– measure and signature intelligence
MBFR	– mutual and balanced force reductions
MCC	– Mobile Command Center
MCM	– mine countermeasures
MFO	– Multinational Force and Observers
MIRV	– multiple independently targetable reentry vehicle
MLRS	– Multiple Launch Rocket System
mm	– millimeter
MPGS	– Mobile Protected Gun System
MPS	– maritime pre-positioning ships
MRBM	– medium-range ballistic missile
MRL	– multiple rocket launchers
MT	– metric ton, megaton
NATO	– North Atlantic Treaty Organization
NBC	– nuclear/biological/chemical
NCA	– National Command Authority(ies)
NCO	– noncommissioned officer
NDRF	– National Defense Reserve Fleet
NEACP	– National Emergency Airborne Command Post
NIE	– National Intelligence Estimate
NKA	– North Korean Army
NKAF	– North Korean Air Force
NKN	– North Korean Navy
nm	– nautical mile
NORAD	– North American Aerospace Defense Command
NTPF	– near-term pre-positioning force
NTPS	– near-term pre-positioning ships
OGS	– overseas ground station
OTH-B	– over-the-horizon-backscatter
PARCS	– Perimeter Acquisition Radar Attack Characterization System
PAVE PAWS	– Precision Acquisition of Vehicle Entry and Phased Array Warning System
PCS	– permanent change of station
PHOTINT	– photographic intelligence
PLO	– Palestine Liberation Organization
PLSS	– Precision Location Strike System
POL	– petroleum, oils, and lubricants
POM	– program objective memorandums
POMCUS	– pre-positioning of materiel configured to unit sets
PRC	– People's Republic of China
PWRMS	– pre-positioned war reserve materiel stocks
RC	– reserve components
R&D	– research and development
RADINT	– radar intelligence
RDJTF	– Rapid Deployment Joint Task Force
RDT&E	– research, development, test, and evaluation
REC	– radio electronic combat
ROCCS	– Regional Operations Control Centers
ROK	– Republic of Korea
ROKA	– Republic of Korea Army
ROKAF	– Republic of Korea Air Force
ROKN	– Republic of Korea Navy

RO/RO	— roll-on/roll-off
RRF	— Ready Reserve Force
RV	— reentry vehicle
RWR	— radar warning receivers
SAC	— Strategic Air Command
SALT	— Strategic Arms Limitation Talks (II)
SAM	— surface-to-air missile
SEAD	— suppression of enemy air defenses
SINGARS	— Single Channel Ground-to-Air Radio Set
SIOP	— single integrated operational plan
SLBM	— submarine-launched ballistic missile
SLCM	— sea-launched cruise missile
SLOC	— sea lines of communication
SNA	— Soviet Naval Aviation
SNF	— short-range nuclear forces
SNM	— special nuclear materials
SPF	— strategic projection force
SPS	— simplified processing station
SRAM	— short-range attack missile
SRP	— Sealift Readiness Program
SRV	— Socialist Republic of Vietnam
SSBN	— nuclear-powered ballistic missile submarine
START	— Strategic Arms Reduction Talks
SUBROC	— ASW depth bomb
TEL	— transporter erector launchers
TFW	— tactical fighter wing
TLAM-N	— TOMAHAWK Land Attack Missile-Nuclear
TNF	— theater nuclear forces
TOW	— tube-launched, optically tracked, wire-guided
TVD	— Theater of Military Operations
UHF	— ultra high frequency
UK	— United Kingdom
UN	— United Nations
UNITREP	— unit status and identity report
UNREP	— underway replenishment
USA	— United States Army
USAF	— United States Air Force
USAFR	— United States Air Force Reserve
USAR	— United States Army Reserve
USMC	— United States Marine Corps
USMCR	— United States Marine Corps Reserve
USMM	— United States Merchant Marine
USN	— United States Navy
USNR	— United States Naval Reserve
USREDCOM	— US Readiness Command
USSR	— Union of Soviet Socialist Republics
V/STOL	— vertical/short take-off and landing
VTOL	— vertical take-off and landing
VHF	— very high frequency
WRS	— war reserve stocks

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