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UNITED STATES MILITARY POSTURE FOR FY 1979. STATEMENT BY GENERA--ETC(U)
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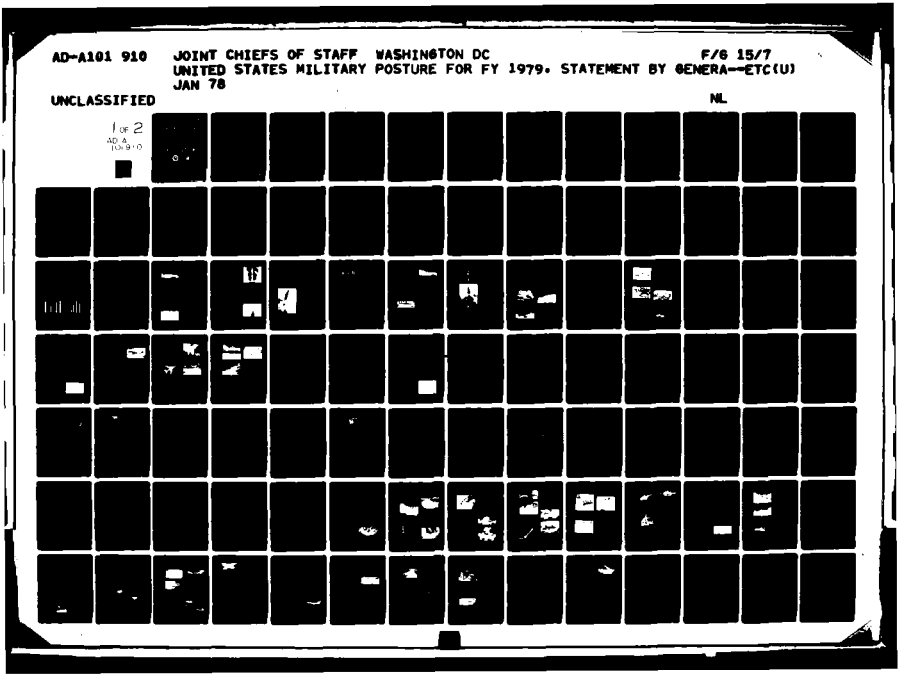

UNITED STATES
MILITARY POSTURE
FOR FY 1979

By

Chairman Of The Joint Chiefs Of Staff

General George S. Brown, USAF

Statement by

General George S. Brown, USAF
Chairman, Joint Chiefs of Staff

TO THE CONGRESS

ON THE DEFENSE POSTURE OF THE UNITED STATES FOR FY 1979

Prepared 20 January ~~1978~~

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INTRODUCTION

Mr. Chairman and Members of the Committee:

This is the fourth and final Military Posture Statement that I shall present to the Congress. I welcome this opportunity to report on the security requirements of the United States, and how the Armed Forces are going about the task of fulfilling them.

In looking back over my previous reports to you, I am struck by the fact that in nearly every area of military strength there has been a relative decline over the years in relation to the Soviet Union, our principal potential adversary. This is not to suggest that there have been no improvements in our forces and capabilities. Indeed, the programs you have supported in the past, and the moneys you have appropriated have strengthened our military capabilities. Modest increases in combat forces and in readiness, the development of several major weapon systems and other improvements all contribute to increased US military power. However, in light of the extensive growth in the military capabilities of the Soviet Union, it is questionable whether what has been done is enough to assure the security and well-being of our country in the coming years.

While I have not and do not advocate that US defense posture be a mirror image of the Soviets, their trends in modernization of equipment and expanded capabilities are particularly worrisome. Many of the most pressing problems in our Armed Forces have no satisfactory early solutions given the time required to develop and produce additional weapon systems and the resource constraints which can be expected. Thus, the military risk to the nation--already relatively high--will increase.

The Armed Forces of the United States have improved their readiness and combat capability. The performance of members of the Armed Forces over the past years in meeting the challenges of increasing preparedness and improving efficiency is a great credit to this nation. Our men and women in Service have demonstrated responsiveness, professionalism and spirit. Many of the answers to the continuing problems of military strength and capability, however, lie beyond their purview--much of it is within yours. Decisions and actions are required of the Congress and the American people to reverse these trends of declining relative military strength.

In a time when the potential costs of inadequate strength and preparedness can be so high, and in a world where miscalculation can have such serious consequences for millions of people, the United States must possess a very substantial military strength--and that strength, and our willingness to use it, must be clearly perceived by our potential adversaries. It must also be perceived by our allies and friends and by others whose well-being may be affected by military conflict. Perception of strength can be as important as strength itself. Our commitment to the security of the country must leave a clear message to others: we can and will defend our interests effectively; we cannot be coerced.

US national security is vital to the continued well-being of every American. Without adequate security, other necessary and desirable programs to meet national needs cannot successfully achieve their ultimate goals. As long as the world is as turbulent as it is today, it will be necessary to bear the admittedly heavy costs of defense. But there is no other way to assure our nation's security.

CHAPTER I: THE NATIONAL SECURITY OBJECTIVE, INTERNATIONAL ENVIRONMENT, CHALLENGES, AND STRATEGY

NATIONAL SECURITY OBJECTIVE

The basic national security objective of the United States is to preserve the United States as a free nation with its fundamental institutions and values intact. This means that the territorial integrity of the United States must be assured, and that an international environment must be maintained in which US interests are protected and US freedom of action is assured.

INTERNATIONAL ENVIRONMENT

From the perspective of United States security, the world today does not differ greatly from the world of a year ago.

- The United States and the Soviet Union remain the two preeminent powers. Their military, economic and technological capabilities and potential make their perceptions, policies and actions of special importance to the rest of the world. Their relationship is today characterized by elements both of cooperation and of competition.

- The two major powers have maintained their traditional alliances to varying degrees, but these alliances have been experiencing difficulties and some frictions. Alliances and associations have been stable in central Europe where the powers confront each other most directly. Elsewhere, however, there have been strains. There has been a weakening of traditional military relationships in Latin America. NATO continues to experience difficulties on the Southern flank.

- Regional unrest and differences, such as those in the Middle East and southern Africa, continue to have broad international significance. The Soviet Union continues to seek to extend its influence in these areas.

- More generally, relations among developed industrial nations and less developed nations--the so-called North-South dialogue--continue to be characterized by demands from the less developed nations for greater economic equity, and for more favorable distribution of the world's resources and wealth.

- The role of resources, particularly energy resources, in foreign policy and national security remains crucial. The oil-rich developing nations exert coordinated control over access to resources vital to the industrial nations.

- Proliferation of nuclear capabilities for energy and weapons continues as a source of international concern, and, at times, disagreement.

- Extra-governmental political actions on the international scene, especially from terrorists, dissidents, and other violent claimants, have required increasing attention by governments and international organizations.

Against this backdrop of world trends, national security policies likewise continue with little change:

- Strategic arms limitation negotiations continue to be a major effort, primarily--though not exclusively--of the United States and the Soviet Union. Increasingly, NATO and other allies see their security interests affected by US arms control activity. In this arms control arena, there has been considerable cooperation--including the voluntary extension by both major powers of the restraints imposed by the expired SALT I Agreement on strategic offensive arms. Arms control efforts toward SALT II continue. At the same time, this cooperative spirit has been paralleled by increased competitive efforts, and especially by arms initiatives being undertaken by the Soviet Union. Strategic weapons improvements and the development and deployment of new nuclear and conventional weapons have continued at an impressive pace. The Soviet Union is moving rapidly toward accuracy improvement, increased numbers of warheads

and throw-weight, greater missile, bomber and submarine production. On the United States side, development of the cruise missile represents an effort to meet the competition while seeking a more cooperative mode through SALT negotiations.

In the area of general purpose forces, competition is more visible than cooperation. The efforts by each side to increase its general purpose forces and capabilities in the field have been extensive and Soviet advantages have increased. Cooperative efforts towards arms control, through MBFR, and restraints on arms transfer, military activity in the Indian Ocean and activities in space have been undertaken--but progress has been inconsequential to date.

Within this international context, the United States seeks to maintain its own national security and, as part of that security, is concerned for the well-being of its allies. At the same time, the United States continues to advance its expressed commitment to human rights.

CHALLENGES TO US SECURITY

USSR

The principal challenge to the security of the United States and its allies is the military power of the Soviet Union. The offensive military power of the USSR--in particular, the great destructive potential of its strategic nuclear forces--has expanded in just two decades to enormous proportions. Under the umbrella of its nuclear capabilities, the Soviet Union is developing and broadening its military strength and flexibility--especially its naval and strategic airlift capabilities--and can engage in military actions of wider scope and at increased distances from the Soviet Union.

Continued improvements in Soviet nuclear and conventional forces raise questions concerning fundamental Soviet military goals. Does their force expansion and improvement mean that the Soviets will undertake actions which entail a significant risk of war? It appears that they intend to have the means, both conventional and nuclear, not only to fight and survive war, but to emerge the stronger side as well. As the Soviets' military capability grows, they may be inclined to take greater risks in testing US resolve.

Soviet-United States relations have been characterized more recently by reduced tension, increased accommodation and peaceful competition. Yet, when it has served their interests to do so, the Soviets have continued to seek involvement where there is political or social instability. In Angola and Ethiopia, they have exploited crises, but in a way which has avoided direct military confrontation between major powers. As the Soviets pursue their efforts to achieve increased world power--perhaps even clear superiority of power--the United States should expect hard bargaining in negotiations and continued Soviet attempts to gain positions of economic and political advantage.

PRC

Both US and Soviet strategic planners must consider the People's Republic of China (PRC). This increasingly important nation complicates calculations in Moscow and Washington. China exercises growing influence in the Far East, represents for the Soviet Union a potential second front, and affects US interests in the Far East. For the US, the Sino-Soviet rift affects the military balance.

The PRC can be expected to continue to improve its military capability in order to counter perceived Soviet threats and to achieve a capability to project its power into other border states. While the PRC will probably be on the offensive in political, economic, and psychological spheres, its military strategy will likely continue to be defensive in outlook, with deterrence of a Soviet attack and maintenance of docile buffer states as its primary objectives. It will weigh carefully its relations with the United States, and if it perceives trends in those relations inimical to its long-range interests, could be expected to adjust its policies accordingly.

NATIONAL SECURITY POLICY

The first major task of current United States defense policy is to protect the United States and its allies against the possibility of strategic nuclear attack. The United States deters strategic nuclear

war by maintaining strategic nuclear forces which possess a rough equivalence with Soviet strategic nuclear forces and which give high assurance that the Soviet Union cannot conduct a disabling first strike against the United States or its allies without receiving unacceptable damage in return. Such rough equivalence also insures against coercion, which a clearly superior nuclear power could employ.

Strategic arms limitations achieved through cooperative agreements are one way to maintain rough equivalence--and they are the best way, if equitable and verifiable limitations can be established. The Joint Chiefs of Staff therefore support strategic arms limitations that meet these conditions.

Strategic nuclear warfare planning for the United States envisions a range of retaliation options in which the level of response, including objectives, number and types of weapons, timing, and other factors, can be specified. Strategic nuclear policies include ample concern for surveillance, warning, and command and control so that a strategic nuclear response can be an appropriately measured one. Thus, policy, strategy, and force structure harness United States nuclear strength.

Strategic nuclear equivalence not only deters nuclear attack on the United States, but also provides an underpinning for the United States commitment to the defense of Western Europe. The Soviets must recognize that any attack in Europe would risk nuclear escalation and unacceptable consequences for themselves. For the defense of Western Europe, under the NATO political and military structure and strategy, the United States maintains conventional, tactical nuclear, and strategic nuclear forces--integrated and coordinated to provide a range of response capabilities. United States military units in Europe are there to help defend well forward, stopping any Soviet attack with minimum loss of territory, and restoring pre-war boundaries.

US interests extend beyond Europe to other regions of the world as well. For instance, the Atlantic is not only the lifeline of communications between the United States and Europe--it is also an important avenue of access to raw materials and goods for much of the world. The presence of potentially hostile forces in the Atlantic and their increasing quality and capability are matters of concern.

The United States will also remain a Pacific power. Forces deployed in Asia, particularly air and naval forces, represent one element of the defense policy which supports that intent. Other elements include forces positioned in the United States--but which remain available for Asian defense tasks--and security assistance to enable other nations to defend themselves more adequately.

The United States also maintains highly mobile combat forces for other contingencies, so that US interests around the world, and its freedom of action as a nation, can be protected.

MILITARY STRATEGY

The purpose of US military power is to help implement US policies so as to achieve, in conjunction with other elements of power, US national security objectives. The basic strategy of the United States is to maintain a balance of military power so that it can: deter armed conflict across the spectrum from strategic nuclear warfare to minor crises; prevent coercion by another military power; influence international affairs from a position of recognized strength; fight if necessary; and terminate conflict on terms favorable to the United States.

The balance in strategic nuclear force is achieved by a TRIAD of strategic offensive forces--land-based intercontinental ballistic missiles (ICBM); submarine-launched ballistic missiles (SLBM); and air-delivered bombs and missiles--and strategic defensive forces as required. The mix of offensive forces complicates an adversary's defensive problem and provides a hedge against a technological breakthrough against one or more legs of the TRIAD. Strategic arms limitations which are equitable and verifiable can help maintain the strategic nuclear balance. Where essential equivalence can be assured, prudent reduction in strategic nuclear armament is a desirable goal.

The balance in general purpose forces is achieved by maintaining sufficient ground, naval and air

forces postured and deployed to support forward defense and flexible employment. For this task, active and reserve component general purpose forces, deployed in the United States and overseas, and strategic mobility forces--airlift and sealift--are maintained in readiness to meet aggression in a timely manner. These forces, which include tactical nuclear and conventional capabilities, are designed to make aggression an impractical, costly, or unattractive option for any adversary. Should aggression occur, these forces must be able to respond quickly, as required, to protect the interests of the United States and its allies, limit escalation, and defeat the aggression. In a major conflict, these United States general purpose forces, even in conjunction with those of its allies, are likely to be inferior in number to adversary forces. They must therefore have a qualitative advantage.

General purpose forces also provide capabilities for conventional response to aggressive actions of lesser magnitude, such as might be encountered outside of Europe. For such aggression, or for employment in crises which could require prompt demonstration or application of US power, flexible, highly responsive combat and strategic mobility forces are required. Ready ground, air and naval forces and Marine units afloat provide this capability.

NET ASSESSMENT

STRATEGIC FORCES

STRATEGIC BALANCE

The strategic nuclear forces of the United States have as a primary mission deterrence of nuclear war. To date, the real strength and preparedness of the US strategic TRIAD have remained credible to the Soviet Union. US strategic forces are kept at a high state of readiness. The Soviets know that a major nuclear attack on the United States or its allies will result in a retaliatory attack and catastrophic damage to the Soviet Union. They cannot, by actual use, or threat of use, of nuclear force, coerce the United States to accede to actions contrary to American interests.

Likewise, Soviet strategic forces are capable of inflicting heavy damage on the United States, its forces and allies. Their strategic forces are large, ready, and are being improved and modernized.

The limits placed on US and Soviet strategic nuclear forces by existing agreements and understandings--principally limits on antiballistic missile defenses and offensive delivery systems--can help preserve the balance and stability that now exist. Moreover, with equitable and verifiable arms limitation agreements, deterrence can be preserved at lower cost than without them.

The future of the relative US-USSR strategic balance is cloudy. US development and deployment of modern strategic weapons are not keeping pace with the Soviet Union. The current US bomber force will require modernization beyond mounting the cruise missile. Current land-based ICBM forces will become more vulnerable with time as Soviet missile accuracy and MIRV capability improve. The only US strategic delivery system being modernized is the SLBM force. Meanwhile, the Soviet Union is modernizing a large portion of its forces, hardening its facilities and continuing its intensive research and development. These trends in the relative balance are cause for serious concern.

It is essential that strategic arms limitation agreements do not foreclose technological developments or exploitation of strategic nuclear technologies which allow the United States to compensate for Soviet advantages. For instance, the Soviet Union enjoys advantages in megatonnage and throw-weight and in certain strategic defenses. The United States must develop and deploy systems with characteristics which offset these Soviet advantages.

Negotiations for a comprehensive ban on nuclear explosions are now being conducted by the United States, the United Kingdom and the Soviet Union. As in other areas of arms limitation, a comprehensive test ban treaty must be equitable and verifiable.

STRATEGIC WEAPONS

In weaponry, the Soviet Union is improving rapidly in the sophistication of its technology. The Soviets have continued to progress in technical capability and have demonstrated will-

ingness to invest heavily to keep their fielded strategic forces as modern as technology allows. Hence the relatively large number of new or significantly modified Soviet systems which have appeared in the past decade. While the United States can claim advantage in state-of-the-art technology, there has not been an equivalent US effort to deploy this technology to the field quickly. Since 1970, the United States has put into production one variant of an existing intercontinental ballistic missile (ICBM), one new type of submarine and submarine-launched ballistic missile (SLBM) system, and no new strategic bomber systems. In the same time the Soviet Union has developed four new families of ICBMs, plus variants of older systems; a new family of nuclear powered ballistic missile submarines, three families of SLBMs, and several upgraded and modernized versions of strategic submarines and missiles; and a new bomber capable of intercontinental delivery of a significant proportion of the total Soviet nuclear arsenal. The trends are shown in Chart 1.

The United States has an opportunity for significant improvement in its strategic nuclear forces. A new ICBM, the MX, is a development of significant potential. TRIDENT promises to add impressively to the sea-based element of the deterrent. Air-launched cruise missiles (ALCM), though still unproven, hold promise as a flexible strategic weapon. In the near term, the ALCM carrier will be a modified B-52G aircraft. For the future, a more capable carrier will be required.

The Soviet Union, its impressive achievements cited above notwithstanding, is developing even more advanced strategic systems. Four new strategic ICBMs are under development and--unless constrained by SALT--are expected to be fielded in the next few years. Additionally, the Soviets currently have a mobile intermediate-range ballistic missile, the SS-20, which it is estimated could be converted to a mobile ICBM, the SS-16. Increased throw-weight, accuracy, and MIRV capability are anticipated as a result of current Soviet efforts.

US AND USSR
STRATEGIC FORCE TRENDS (1967-1977)
(END OF FISCAL YEAR)

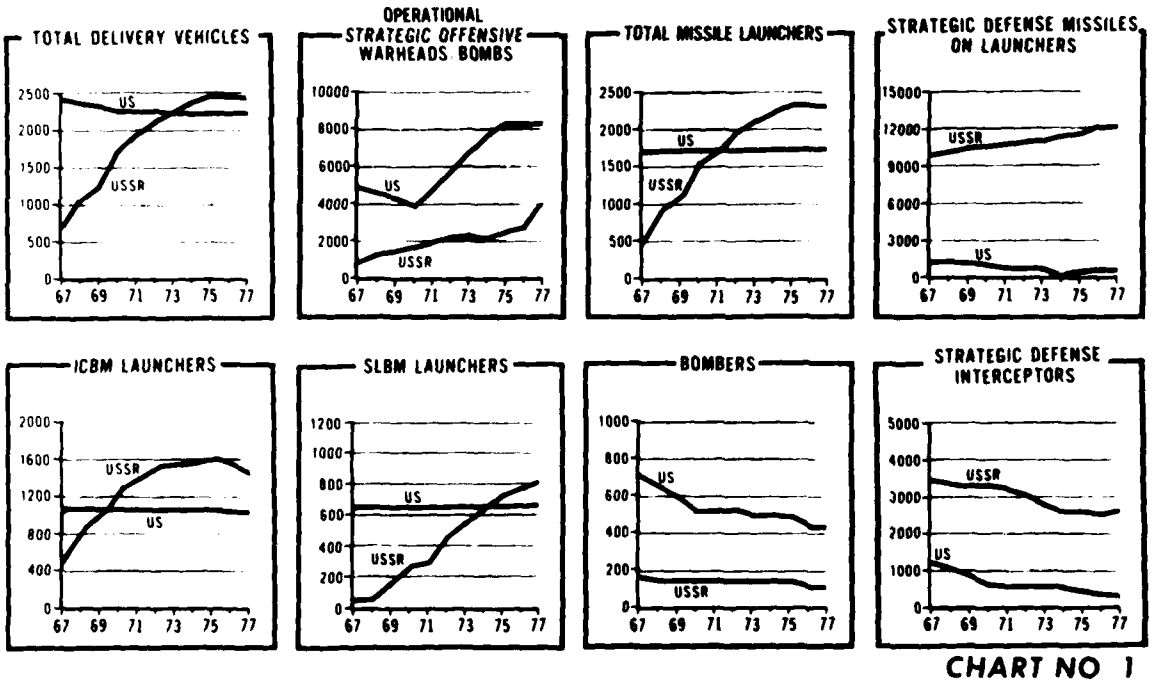


CHART NO 1

Continuing Soviet investment in advanced technology in combination with impressive production rates suggest the capability for achieving distinct strategic and operational advantages in technology and rapidly increased force levels--advantages which could offer opportunities for coercion or adventurism at the expense of the United States and its allies.

STRATEGIC DEFENSE

The Antiballistic Missile (ABM) Treaty effectively curtails defense of the United States and the USSR against ICBMs and SLBMs. The concept of deterrence to both sides relies on the vulnerability of the two societies. The ABM launchers around Moscow do not upset that balance. However, successful efforts, or efforts which are believed to be successful, which significantly reduce vulnerability, through such passive defense measures as dispersal and protection of economic, governmental and military recovery resources, could be destabilizing.

The Soviet Union is engaging in a large-scale research and development effort which indicates their desire to be ready to field a modern ABM system in the event the ABM Treaty does not continue in force. They are also engaging in other actions to reduce their vulnerability to strategic nuclear warfare. The Soviet civil defense program, for example, is an integral part of their overall military strategy. Protection for a significant proportion of key people--leaders and industrial workers--exists and is being improved. Some industrial capacity is also being protected. The United States has no comparable capability. There does not yet appear to be a reduction of Soviet vulnerability sufficient to create instability. But if at some point the Soviets should perceive their strategic vulnerability to be acceptably low, they may be willing to hazard increased risks of nuclear war to achieve other objectives. While they may be inhibited from attacking the United States directly, a serious imbalance in vulnerability could encourage aggression elsewhere.

Active Soviet strategic defense systems include both large modern interceptor and surface-to-air missile forces, defensive capabilities which make the use of high performance and standoff air delivery systems most important. Additionally, growing Soviet antisubmarine warfare capabilities, while still below US standards, must be expected to improve as Soviet technology advances, and to pose increased risks to US ballistic missile submarines.

CAPABILITIES IN SPACE

The United States has made extensive use of space for a variety of peaceful and national security tasks. One key task is surveillance--which contributes significantly to warning of strategic attack. Another is communications--for the command and control of strategic nuclear and general purpose forces, in peacetime, crisis and war. The Soviet Union's demonstrated capability to destroy some US satellites is of concern. Absence of a like US capability or of an adequate defensive capability is a serious US vulnerability. The Administration has announced its intention to pursue negotiations with the Soviets to ban antisatellites, though verification will be difficult. Attention to hardening US satellites against attack, and aggressive research and development are an important hedge against the failure to achieve verifiable agreements on military activities in space.

GENERAL PURPOSE FORCES

OVERVIEW

The Soviet Union has larger general purpose forces than the United States, develops more new systems, and produces more weapons and equipment for its forces than does the United States. Moreover, the trends indicate a continuation--and in many areas an increase--in these disparities. These trends are shown on Chart 2.

THEATER NUCLEAR FORCES

The current inventory of US tactical nuclear weapons includes a number of systems which are becoming obsolete. While the United States almost certainly maintains a clear edge in numbers of battlefield warheads, the growing obsolescence of these warheads, particularly the 8-inch and 155 mm artillery-fired atomic projectiles, threatens the overall US advantage.

US/USSR GENERAL PURPOSE FORCE TRENDS (1967-1977)
(END OF FISCAL YEAR)

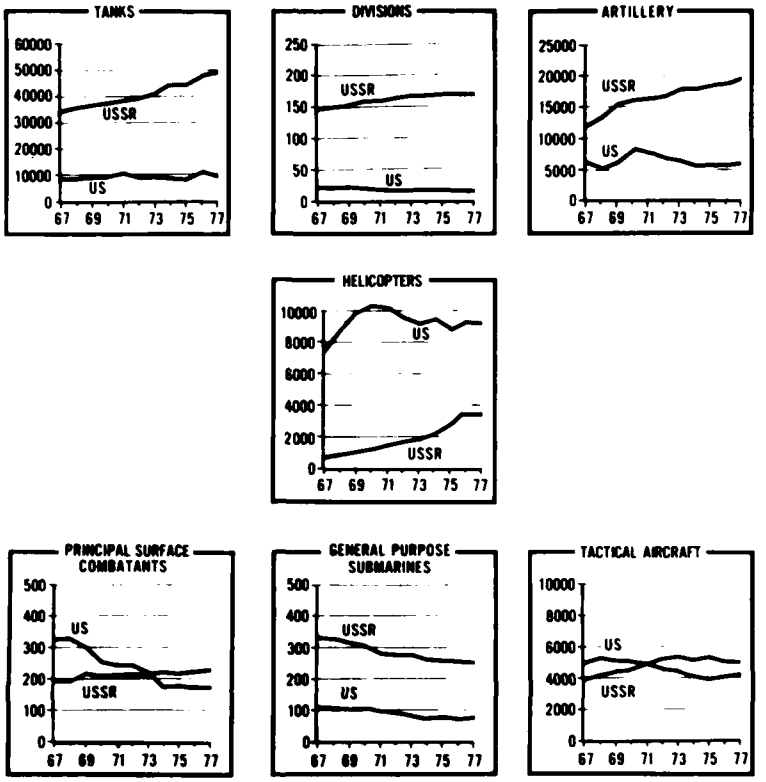


CHART NO 2

Reduced blast/enhanced radiation warheads for the LANCE, and a new warhead for the 155 mm howitzer, if produced and deployed, will enable US theater nuclear forces to retain superiority in battlefield systems through the 1980s. By providing increased military effectiveness and reduced collateral damage, credibility will be added to the theater nuclear force--in terms of both deterrent and warfighting capability. Development of the new 155 mm warhead should continue. Deployment should be undertaken in consonance with the views of the NATO allies.

For intermediate-range systems, the Soviets rely principally on IRBMs and MRBMs, while the US has emphasized tactical aircraft backed by the PERSHING missile and SLBMs. Modern aircraft, new versions of the B61 bomb, and perhaps deployment of a mobile ground-launched cruise missile are required to deny future superiority to the Soviets in intermediate-range theater systems.

As in the case of battlefield systems, modernization of the NATO naval nuclear capability is required to maintain the established US lead in this area. There are uncertainties about the Soviet naval nuclear inventory, but it appears clear that a significant portion of the Soviet naval cruise missile inventory is nuclear armed. For the United States, deployment of the TOMAHAWK cruise missile, and the nuclear antiship HARPOON missile will enhance US sea-borne deterrent forces and deny the Soviets naval nuclear parity through the 1980s.

On balance, the United States currently retains an advantage in theater nuclear forces, but must continue development and deployment of modern

systems to meet the challenge of Soviet modernization efforts. A credible capability of theater nuclear forces must be maintained to provide response options, and thus an effective deterrent, between conventional warfare and strategic nuclear warfare.

GROUND FORCES

Soviet ground forces outnumber US ground forces by virtually every criterion: total ground force personnel; number of divisions; and ground force systems, especially tanks (5:1), personnel carriers (2.5:1), artillery pieces (4:1), and heavy mortars (2.5:1). Only in helicopters does the United States enjoy a significant advantage (3:1). Moreover, the Soviet advantage in tanks and artillery has increased markedly in the past few years and apparently continues to grow. To some extent, these differences are overstated by considering US and Soviet forces in isolation. They should also be considered in conjunction with respective allies. It is unlikely that the United States and Soviet ground forces will be employed against each other without other nations being involved. Moreover, like the United States, the Soviet Union has force requirements in theaters other than Europe, i.e., the PRC border.

As will be shown in a later portion of this assessment, the NATO/Warsaw Pact ground force balance is less disparate than the US/Soviet balance, though far from satisfactory. No significant disparity favoring the Soviet Union is reversed by considering allies.

Apart from numerical ratios, a second significant aspect of the conventional ground force balance is the quality of the Soviet force. The T-72 tank is better than the best US tank in the field today; their BMP and BMD infantry fighting vehicles are a full generation ahead of US personnel carriers now in the field; Soviet artillery systems are of high quality and generally of longer range than comparable US systems.

New US systems now in development, particularly the XM-1 tank, antitank guided missile systems, and longer-range artillery will help redress qualitative deficiencies. However, these systems are neither in the field nor imminent. Further, neither current US production capability nor program funding for sophisticated ground force systems is adequate to overcome this serious disadvantage in the near future.

NAVAL FORCES

The present combat capabilities of Soviet naval forces can substantially influence Western naval operations in many key areas, and could dominate the initial stages of certain types of conflicts. Soviet surface ships, however, are considered particularly vulnerable to concerted Western air or submarine attack.

The Soviet Navy enjoys numerical advantage over US naval forces in principal surface combatants (4:3) and especially in general purpose submarines (3:1). Moreover, Soviet surface naval units are generally more heavily armed than their US counterparts. The United States has ASW capabilities superior to the Soviet Union's, reflected in the SSN 688 LOS ANGELES class which is the finest ASW platform in existence today; Sound Surveillance System (SOSUS); and land-based P-3 aircraft.

The US Navy enjoys a clear superiority in power projection capabilities, particularly as represented by aircraft carriers and US Marine amphibious forces. The United States possesses an advantage in mobility of naval forces typified by the nuclear powered task groups and high performance underway replenishment capabilities. The development of the HARPOON and TOMAHAWK medium and long-range antiship missiles, and the AEGIS air defense weapon system will improve the US Navy surface warfare capabilities provided the shipbuilding program continues to provide modern platforms, such as the guided missile destroyer (DDG-47) and the nuclear guided missile cruiser (CGN-42), in which to put these capabilities to sea.

The US Navy's greatest problem is too few surface combatants to perform all its missions simultaneously. The Soviet Union is, and has been, actively engaged in a major surface fleet modernization program. At present, US fleet modernization programs are being curtailed. Shipbuilding programs initiated a few years ago have been substantially reduced. These are disturbing trends considering the long lead times necessary

to bring ship programs from early stages of development and design to full combat capability.

While the US Navy's capability to project and sustain sea-based power and the quality of its attack submarine force are superior to the Soviet Union's, current US capability to control the essential sea lanes, versus the Soviet Navy's capability to deny the use of these lanes, is more difficult to assess. In the event of a major conflict, by concentrating its effort and exploiting allied capability, the US could prevail in most situations, but both US and allied shipping would probably suffer serious losses in the early stages.

TACTICAL AIR FORCES

In tactical air forces, the Soviet Union enjoys a numerical advantage in tactical aircraft. However, United States technological advantage, superior pilot training and experience, and responsive maintenance and support structure provide a quality factor of significance. Moreover, the Soviet air forces are modernizing quickly as large numbers of technologically improved aircraft are made available in the field. The US technological advantage is diminishing, however, and the Soviet Union is increasing its large inventory, while US forces are trading off numbers of aircraft to maintain quality. The concept of acquiring a mixed US force of relatively few, highly capable, sophisticated aircraft--such as the F-14 and F-15--and a larger quantity of high quality, more specialized (and therefore less costly) aircraft--such as the A-10, F-16 and F-18--is sound. However, numbers in total are important.

Again, a static balance of US and Soviet tactical air forces is not alone an adequate measure of the true balance. Allies should be included, since a major conflict between the US and the USSR alone is highly improbable. As will be shown, NATO is currently at nearly a 2:1 numerical disadvantage in tactical aircraft to the Warsaw Pact in the Central Region. Qualitative superiority and rapid deployment of US tactical air forces from the United States to Europe redress in part this disparity, but over a more sustained period, Warsaw Pact air forces opposite NATO could be reinforced considerably.

In the past, Soviet tactical air forces have been dedicated primarily to defensive roles. More recently, their orientation has shifted to offensive operations. Today, Soviet tactical air forces pose a significant offensive threat, though they do not yet have the broad global deployment capabilities of US tactical air forces. As their technology continues to advance--particularly in range, payload and electronics--and as their doctrine and training move closer to the demands of modern warfare, Soviet tactical air power will present a formidable threat over the battlefield--whether that battlefield is conventional or nuclear.

On balance, the United States enjoys a technological advantage in tactical aircraft, notwithstanding an approximate 3:2 numerical advantage in overall tactical air forces held by the Warsaw Pact over NATO. However, continuing Soviet modernization no longer permits the United States or NATO to be comfortable with a force structure significantly smaller than the Soviets'. Retention of the current balance is critically dependent upon procurement of modern aircraft in sufficient quantities to deny the Soviet Union the advantage that accrues from larger numbers and their increasing level of modernization. Equally essential is continued allocation of adequate resources--especially flying hours and fuel--for training, to offset to some extent the US numerical deficit.

MANPOWER AND PERSONNEL

The Soviet Union has 4.4 million active duty personnel, largely conscripted, in its active armed forces; the United States has about 2.1 million volunteer active duty personnel. A direct comparison of these raw numbers can be misleading, since the extent to which military personnel perform other than purely military functions is not identical, nor is the extent of civilianization of the two forces. Nonetheless, it is clear that the Soviet Union has elected to maintain a large standing armed force.

This standing Soviet force is backed by 6.8 million reservists, i.e., personnel discharged from active duty within the past five years. The United States has a total of 1.5 million reserve component

personnel, including individual reservists and members of reserve component units. United States reserve component strength is diminishing, largely as a result of a declining Individual Ready Reserve (which had been linked to draft-related reserve commitments) and to the difficulty of recruiting personnel for service in reserve component units.

Soviet military personnel receive an extensive part of their basic training during their civilian schooling. Much of their additional individual training takes place in units. In the past, the Soviet Armed Forces drew the bulk of their personnel from rural areas, with the result that many personnel lacked familiarity with basic technology. Today, however, the Soviets draw most of their personnel from urban regions, with consequent improvement in general technological skills. Large numbers of officers of relatively high quality are produced by various academies and officer training institutions and programs.

Few US military personnel receive any military training prior to entering upon active duty. Basic military skills are taught in training centers, rather than in units. This contributes to overall unit capability. In general, the technological capabilities of US military personnel are high. Officers of high quality and in sufficient numbers are produced by military academies, civilian institutions with officer training programs, and officer training institutions within the military establishment itself.

WAR IN EUROPE

INTRODUCTION

Strategic nuclear warfare would be the most devastating type of warfare between the United States and the Soviet Union. It is also probably the least likely.

At the other end of the conflict spectrum--regional contingency operations or local crises--the force projection capability, strategic mobility, employment flexibility and other favorable characteristics of US forces provide advantages over any likely adversary. Such conflicts, while not as demanding as major war, have occurred relatively frequently in the past.

The most challenging conflict for the United States is a war in Europe in which NATO must respond to an attack by the Warsaw Pact. A comparison of US/NATO and Soviet/Pact capabilities serves to illustrate relative overall capabilities.

EARLY COMBAT CAPABILITY

Successful prosecution of a major war in Europe, and the achievement of US and NATO security objectives, require an early and sufficient response to initial Warsaw Pact aggression. NATO must be able to get ready quickly and to fight effectively from the outset of hostilities. Early combat capability, especially conventional force capability, is a means of keeping the nuclear threshold high. The potential for superior forces and capabilities in the intermediate and long term could not be brought to bear if NATO forces suffer significant defeat early on.

Emphasis must continue to be placed on early combat capability in NATO--and therefore on US forces which support NATO. This early capability includes ready in-place forces, adequately supported by available stocks, and the early provision of combat reinforcements--especially dual-based tactical air forces and ground force units designated to join with pre-positioned unit equipment sets.

The need for increased early combat capability has been recognized by NATO. Three specific areas identified for short-term improvement are readiness and reinforcement, antitank capabilities, and war reserve munitions.

US actions to meet these and related requirement areas include increasing the strength and firepower of existing in-place Army divisions and tactical fighter wings. In addition, three more artillery battalion equivalents will be added to US forces in Europe in FY 1979. The density of artillery weapons and antitank systems--including attack helicopter systems--in the forward battle area, and higher manning levels for tank and fighter forces likewise increase initial combat capabilities.

In the area of readiness, an increase in combat ammunition loaded on carriers, in combination

with increased warning time, has strengthened the ability of US forces to respond rapidly to an attack. Planned repositioning forward of ammunition for selected units will further improve responsiveness. An increase in war reserve air and ground munitions located in Western Europe is now in process, but more is required to bring these now-deficient reserve stocks up to the required level of fill.

The effectiveness of US forces in early combat is also in large part a function of the amount of reinforcement which can be brought to bear early. At present, one ground division and 40 Air Force squadrons can be deployed to reinforce in Europe within ten days of a decision to do so. Current efforts are to increase that early reinforcement to five divisions and 60 squadrons by 1983.

Recent improvements in NATO interoperability are also producing favorable results for increased early combat capability. Increased cross-servicing of US and FRG aircraft--by which the service facilities of one nation are capable of servicing the aircraft of the other--can improve the effectiveness of tactical air forces. Adaptation of aircraft to allow mounting of munitions produced by other nations is also proving beneficial. More standardized naval fuels further increase the interoperability of NATO forces.

These improvements, together with more effective and efficient battle management capability--such as that provided by AWACS--hold much promise for improving early combat capability.

With adequate early combat capability, an initial drive can be stopped, Warsaw Pact forces forced back, and original boundaries restored.

INITIATION OF CONVENTIONAL WAR

Although not the most likely eventuality, the Warsaw Pact can attack in Europe without waiting for reinforcements from the USSR. Such an attack would offer NATO only brief warning, and could place US and NATO forces in Europe at a distinct disadvantage. Some actions to improve readiness and thereby to reduce this NATO vulnerability are now being taken by member nations. More remains to be done. As noted, however, an unreinforced attack is a high-risk venture for the Warsaw Pact from several points of view, not the least of which are a lower level of combat power in the initial attack, less sustainability for attacking forces, the possible loss of undeployed forces enroute to support the attacking forces, as well as the increased possibility that one side will be forced to consider early use of theater nuclear weapons.

Initiation of combat by other than a sudden unreinforced attack would provide warning signals which would afford the United States and other NATO members an opportunity to increase readiness, deploy, reinforce, mobilize and otherwise build force strength--the level of strength being dependent upon the amount of warning time, the forces available, and the political decisiveness and resolve of NATO members.

CONTROL OF THE ATLANTIC

War in Europe places a heavy requirement on US reinforcement by sea. Since the founding of NATO, the United States has proceeded on the assumption that the NATO Alliance would be able to control the high seas. Reinforcement of Europe will depend first on airlift (for responsiveness), but ultimately on sealift (for capacity). Successful use of sealift is contingent upon controlling the Soviet submarine threat. Since there are insufficient forces for accomplishing all required naval tasks simultaneously, the United States and its allies now must establish priorities among these tasks, and allocate forces accordingly. If the Soviet Union makes a maximum effort to interdict the Atlantic sea lines of communication (SLOC) and deploys a large portion of its submarines prior to hostilities, heavy attrition of early US reinforcement and supply elements can be expected.

Although the balance between Soviet and NATO forces in the Atlantic area is being seriously challenged by the introduction of more and newer Soviet units, the Atlantic Command believes it can still win a general war in the Atlantic. Antisubmarine warfare (ASW) will be a most crucial operation; US forces excel in integrated air, surface and subsurface ASW. However, the task of detection and destruction of the submarine threat

is most demanding, particularly with increasing Soviet submarine force capabilities. The United States must continue to remain superior in ASW systems to support successfully a NATO war.

ALLIED NAVAL CAPABILITIES

The navies of the European allies would make a significant contribution to the early defense of vital maritime areas immediately adjacent to Europe. Their most important tasks include: denying the Soviet Baltic and Black Sea fleets egress to the open ocean by mine warfare and surface/submarine attacks; defense in the Baltic, North, and Aegean Seas against limited Warsaw Pact amphibious assaults; and defense of the English Channel and North Sea approaches to principal allied ports.

Moreover, the navies of the larger NATO allies (especially the UK, Canada, Italy, Netherlands, and possibly France) could assist the US Navy in the defense of key SLOCs in the Atlantic and Mediterranean.

COMPARISON OF FORCES

A comparison of the size and weaponry of NATO and Warsaw Pact forces in Europe shows a marked advantage to the Warsaw Pact. However, such an assessment is incomplete. Other factors must be considered in a balanced assessment. For example, NATO is a defensive alliance, which assumes that hostilities in Europe would be initiated by the Warsaw Pact. In general, a defending force can succeed against a larger attacking force, though an attacking force can concentrate forces as required. Thus, NATO must attain and maintain a capability to engage and halt attacking forces, and to restore the pre-war boundaries.

Further, there are still qualitative differences between NATO and Warsaw Pact forces--including weapons and system capabilities, but extending also to the quality of leadership, personnel, command and control, and other factors. In general, NATO forces have held an advantage over their Pact counterparts in many of these areas in the past. While still true today, that advantage is diminishing as Soviet forces become more modern, capable and professional. Moreover, the Warsaw Pact dominates NATO in a number of relevant capabilities, such as chemical warfare and electronic warfare. There are imponderables as well that play a part in the overall balance--reliability of Soviet allies, and the will and responsiveness of the NATO alliance,to suggest but two.

US forces in Europe are at their highest state of readiness in many years. US units are generally up to strength, well equipped and trained, and competently led. Tactical air units have been added to theater forces, and advanced aircraft, including F-111s and F-15s, have been provided. The air-to-air missile inventory has been increased. Antiarmor capabilities have been improved. A greater proportion of unit munitions is loaded on carriers, and pre-positioned unit equipment sets are nearly fully restored. Thus, in a number of respects, NATO readiness has improved over the past year.

Yet, overall, NATO conventional strength has not kept pace with the Warsaw Pact. As noted earlier, NATO's qualitative advantages which have offset Warsaw Pact numerical advantages in the past have diminished. Today, NATO recognizes that Pact forces in general, and Soviet forces in particular, have narrowed the qualitative gap considerably. At the same time, they have gained in numerical measures as well.

Opposite the Northern Region of NATO the increasing capability of Soviet air and naval forces is of growing concern and places a premium on timeliness of allied reinforcement. Allied improvements in readiness and interoperability of northern flank navies, agreements for collocated operating bases, and future deployment of the F-16 by Norway and Denmark will improve NATO's relative position in the North.

On the Southern flank of NATO current political uncertainties make an assessment of wartime capabilities tenuous at best. Militarily, with the exception of US forces, allied land and air forces are less well equipped than Warsaw Pact forces. At sea, where the US contribution in the region is greatest, NATO's traditional superiority has been offset by increased Soviet capabilities. This Soviet naval presence threatens the reinforcement and supply routes essential for support of the weaker Southern Region forces.

In the Central Region, the Warsaw Pact has numerical superiority in tanks, armored personnel carriers, and artillery tubes. These quantitative imbalances cannot be counterbalanced solely by qualitative advantages or technical improvements. More and better weapons are needed. NATO is also hindered by the tactical malpositioning of some of its units. However, NATO's capability to provide early warning of Warsaw Pact attack in this region has improved, which should provide more time for NATO to react.

The Soviet air defense system will cause great difficulty for NATO forces in battle. The Soviet Union has deployed mobile air defenses with its field forces, including a high density of surface-to-air missiles and antiaircraft guns. This ground force tactical air defense capability will lessen Soviet dependence on aircraft for air defense, and free some for other missions.

At the outset of hostilities, the Warsaw Pact would probably commit the bulk of its theater air power to a large-scale attack against NATO air forces, tactical nuclear delivery assets and command and control installations. The Soviets would seek air superiority through several days of massive assaults.

NATO tactical air forces in place are numerically inferior to Warsaw Pact forces. This numerical disparity is lessened to a degree by the technological, training and other qualitative advantages which are enjoyed by NATO.

Additionally, the Soviets consider armed helicopters as an important element of their tactical air ground support capability. They have a large number of heavily armed HIND helicopters available for use in support of their ground forces. NATO has a considerably smaller number of armed helicopters of various types for use in antitank and other ground support roles.

In its counterair efforts against massive Soviet attack, NATO requires improved command and control and significant improvement in air defense capabilities. Procurement of the E-3A Airborne Warning and Control System (AWACS) is being contemplated by NATO. AWACS will provide NATO with the capability to detect and warn of enemy air attack, and direct counterair efforts where most needed. Pact forces do not now have such a capability.

THEATER NUCLEAR AND CHEMICAL WARFARE

A theater nuclear capability is an essential element of successful deterrence and defense. The conventional balance in Europe is such that if the Warsaw Pact forces mass rapidly and attack on a narrow front, NATO's ability to defend with conventional forces alone would be questionable. An evident capability for selective employment of nuclear weapons against armored thrusts contributes to theater deterrence and provides an intermediate option between conventional warfare and a general nuclear war.

The Soviets believe that any tactical use of nuclear weapons, even limited, would be difficult to control, and rapid escalation--at least theater-wide--is highly likely. However, the USSR may be incorporating limited nuclear employment concepts into its military doctrine for a Central European war.

To counter this, the United States must maintain its qualitative advantages. Greater accuracy and range, and enhanced security devices are modernization objectives, as are reduction of collateral damage, improved command and control, and enhanced security. Theater nuclear force modernization with NATO is being pursued within the context of the NATO Long Range Defense Program.

Warsaw Pact forces have an operational capability for large-scale chemical warfare. Their training, equipment, specialized personnel, and facilities all point to superior capability, both offensive and protective. NATO forces lack full equipage even of basic protective gear. In such a state of imbalance, the Warsaw Pact could employ chemical weapons to gain major tactical advantages.

REINFORCEMENT AND MOBILIZATION

Upon mobilization, Warsaw Pact forces are expected to exceed NATO forces by a substantial margin. However, this margin is not sufficient to

provide assurance of offensive success. Reinforcement of in-place forces and mobilization will be required by NATO.

The most significant variable in the NATO buildup is US reinforcement--which makes unit readiness, US mobility assets, and control of the Atlantic critical. Notwithstanding the high readiness of US forces designated for early deployment, the demonstrated ability of the United States to move dual-based aircraft and REFORGER reinforcements quickly, improved host nation support, and the effective exercising of the BENELUX line of communication, the shortfall in strategic lift will constrain rapid buildup. Air mobility assets are heavily committed in the early days of reinforcement. Low stockage levels in Europe will require early over-ocean resupply; sealift assets are sufficient, but early losses are expected to be high. Atlantic naval forces must accomplish their sea control tasks sequentially, rather than simultaneously. And the readiness of some US ground force units in CONUS has been lowered as their equipment was provided to higher priority units in Europe.

SUSTAINED COMBAT

Sustainability and combat capability are prerequisites of success in a war in Europe and for achievement of US and NATO objectives. There must be the capability to continue the fight as long as necessary to achieve security objectives.

A serious shortcoming in US military posture, and of NATO forces generally, is lack of this sustaining capability for extended conventional conflict. Readiness of active forces is relatively high, but some US reserve component units have to be activated for full effectiveness of the combat force. These reserve units may take a considerable time to become combat ready. The problem is lack of people and equipment, and not the skill and dedication of the reservist. Further, the individual reserve pool is drying up.

Under current plans, the Selective Service System, which is expected to provide personnel in wartime, will require about three months to produce the first substantial increment of personnel for training. This means that replacements will not be available in strength until at least six months after mobilization. At present, shortages of physicians, nurses and facilities constrain the amount of medical care available in the theater. This could have an impact on theater evacuation policy and the time required to return a soldier to combat.

The sustainability, flexibility and other advantages provided by standardization and interoperability of equipment are well known. While NATO forces have taken only initial steps in this area, Warsaw Pact forces enjoy a high degree of commonality.

The capability to produce weapons and heavy equipment required by deploying units, and to replace combat losses after limited war reserve stocks are exhausted, is inadequate. Production lines for key items, such as aircraft and tanks, are especially problematic for the United States and NATO.

The Soviet Union is outproducing the United States in aircraft and tanks by a significant margin and are maintaining sufficient supply stockpiles of ammunition and fuel for sustained combat. By comparison, current stockage levels for the United States and its allies are limited. Ammunition production capabilities impose a serious supply constraint, and lack of adequate storage facilities in Europe further compounds the problem. The US European Command is taking action within its capability to increase storage areas, but more capacity will be required.

The Soviet Union holds significant advantages for sustained warfare: reserve units and personnel which can be mobilized quickly; a large pool of manpower for individual replacements or the reconstitution of units; sizable stocks of stored equipment (though much of it probably of older vintage); more active production lines; adequate fuel and ammunition stocks and the transport to move them forward; commonality and interoperability of weapon systems; and less requirement for over-the-sea transportation.

US and NATO have shortfalls and problems in most logistic areas. None is new, nor have US and NATO forces been idle in correcting deficiencies. But what has been done is not enough.

EFFECT OF WAR IN EUROPE ON OTHER COMMITMENTS

At current levels of force structure, war in Europe would require the great preponderance of US general purpose forces. Deployment of a significant portion of the Pacific Command's naval resources to the Atlantic may be required. If this were to occur, control of the seas between the continental United States and Hawaii could be maintained, as could the sea lanes between Alaska and the Lower Forty-Eight. However, broad sea control beyond those lanes would be a difficult challenge. Forces of all Services available for other contingencies and crises--for example, war in the Middle East or on the Korean peninsula--would be seriously reduced.

OTHER CONTINGENCIES

The United States is a global power whose interests can be threatened at many points around the globe and whose influence can be challenged by other major powers--including, but not exclusively, the Soviet Union.

The protection of US interests may require the availability and possible use of US military forces in areas where instability, increased tension, or overt conflict affect those interests. Experience since World War II indicates that the timely use of military forces for demonstration or show of force has sometimes been sufficient to prevent open hostilities. On the other hand, the deployment and use of relatively larger forces may be required. For instance, if the security of Persian Gulf oil resources, upon which the US and its allies depend, were seriously jeopardized, commitment of substantial ground, air and naval forces conceivably could be required. Likewise, renewed hostilities on the Korean peninsula could require substantial US military force.

To meet this wide range of contingencies, ready and highly capable combat, support, and strategic mobility forces are required--as is a flexible, high capacity command, control and communications system to coordinate and operate these forces. A sufficient sustaining base, especially materiel and transport, for early followup is also required.

The United States has such forces and capabilities. In fact, its capability to project and sustain power by military force is unequalled by any other nation, but the capabilities and sustainability of such forces are limited.

Under most conditions, military operations would be executed under the control of the theater commander, possibly using only forces already under his command. In other circumstances, augmentation of his forces may be required.

From the continental United States, Marine and Army forces are available for deployment worldwide, as are tactical air and naval units. These units are ready, capable, flexible and responsive.

US forces outside the continental United States which might be used in minor contingency operations include deployed Pacific and Mediterranean fleets with embarked Marine air-ground combat teams in addition to naval surface and air forces. Tactical air units in Europe and the Asian region are also available. Army forces from Hawaii can be deployed, if required. It should be noted, however, that the use of certain forces or resources, e.g., those committed to NATO, may be constrained by international political considerations.

To project these forces, strategic mobility forces--especially air mobility forces in the early hours and days of crisis or conflict--are required. The responsiveness, capacity and demonstrated capability of US strategic mobility forces are unparalleled by any other nation. For full effectiveness, however, adequate overseas ports, bases and facilities are required. With such bases, reliance on air refueling, underway replenishment and other similar support is reduced; movement capacity is increased.

The US forces available are sufficient for a local contingency. However, any contingency which becomes a major commitment--such as war on the Korean peninsula might become--can impose problems. For example, pre-positioned stocks are not available in many areas, so massive transport of materiel early in a conflict will be required, and

increased production may be necessary. The sustaining base of materiel stocks, production capacity, replacement personnel, and other necessary resources may well be severely strained and inadequate in part. It would be insufficient if war in Europe or elsewhere were being conducted at the same time.

The Soviet Union also has global interests, and is developing an improved capability to project military power far from the Soviet homeland. In the Angola conflict, the Soviets demonstrated a significant and professional strategic airlift capability.

While Soviet contingency capabilities do not yet approach those of the United States, much improved deployable combat forces, air mobility forces, and command, control and communications systems have been demonstrated. The Angola operation was particularly impressive. Soviet naval surface and air forces are increasingly converting from defensive to offensive posture. A "blue-water" strategy is emerging from what has traditionally been coastal and continental defense. The capabilities of Soviet reconnaissance and other aviation units are being increased. Air transport capabilities have also become larger, more modern, more capable and more experienced. Like the United States, the Soviet Union requires enroute basing, overflight rights and other facilities to make full use of its inherent military and naval capability. For this reason, Soviet influence to gain bases and facilities is viewed with interest and concern.

On balance, US forces can respond effectively to any likely contingency mission against the foreseeable threat. They have the capability, in conjunction with other elements of national power, to protect US global interests. Their readiness and demonstrated capabilities provide a credible capability which contributes to peace and stability around the world.

CONCLUSION

Deterrence of strategic nuclear attack against the United States has been effective in the past, and is effective today. Deterrence in the future can best be assured by maintenance of rough equivalence in strategic nuclear weapon systems, effective arms limitation agreements, and vigorous attention to maintaining US technological advantages.

The ability of the United States to conduct limited operations virtually anywhere on the globe is unequalled by any other nation. Current readiness of US forces, force projection capabilities, and command, control and communications capabilities make this possible.

The ability of the United States to conduct successfully a major conventional war in Europe, however, is open to increasing question. Improvement in Soviet capabilities is the main reason for this judgment. However, deficiencies in US prepositioned stockages, inadequate rapid reinforcement capabilities, and lack of trained, ready reserve ground forces required early in a major conflict compound the question.

The strategic deterrent--and the essential equivalence which underlies it--must be maintained, even as reduced levels of strategic nuclear weapons are sought. Theater nuclear weapons require modernization if they are to be fully effective. US capabilities to fight a conventional war in Europe must be improved. Initial defensive capabilities and the capacity for sustained combat require attention.

In this turbulent and uncertain world--a world in which cooperation and conflict coexist, in which technology increases the potential costs of war even as it decreases the time which may be available for reaction, and in which the destructive power available to the potential adversaries is so great--the necessity for adequate military strength is evident.

How much is "adequate" is largely subjective because it depends upon uncountable factors: perceptions of military strength and political will; levels of risk deemed acceptable to one side or the other; the extent to which future agreements and other constraints will affect real and relative power.

But certain realities cannot be ignored. The military trend lines for the Soviet Union and their allies appear to be moving sharply upward in many critical areas. Their force improvements are steady, deliberate and impressive.

It is also true that some US trend lines are turning up--though not as sharply, and not for such an extended period. More improvement in our forces is needed. The added risk from not doing more in any particular area seems modest; but in conjunction with a shifting balance of forces, these risks accumulate and assume far greater significance. Given the balance of forces, the margin for error is small.

This is a time for commitment, not complacency.

CHAPTER II: THE STRATEGIC NUCLEAR BALANCE

US NUCLEAR FORCES AND STRATEGY

Strategic nuclear offensive forces are a critical element in US deterrent strategy. In addition to their ability to inflict massive military damage on any potential enemy, they must have, and be perceived to have, selectivity, survivability and flexibility. Should deterrence fail, these forces must be capable of flexible employment in order to allow conflict termination at the lowest feasible level. If such escalation control fails, then the forces must permit conflict termination on the most favorable terms possible. Inherent in this strategy is the need for weapons in sufficient numbers, and of appropriate characteristics, to maintain a stable strategic balance in the face of Soviet technological advances. Because of this necessity, the US strategic force structure is to some degree influenced by Soviet force programs. Major problems in this regard include accurate assessment of Soviet capabilities and trends, and the application of limited resources to maintain the balance.

Emphasis on planning and developing strategic offensive forces which are capable, survivable, and versatile must continue. The United States TRIAD of land-based intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) and strategic bombers provides this combination of characteristics.

Programs have been initiated to improve ICBM survivability, to improve the nuclear powered ballistic missile submarine (SSBN) force to protect it from Soviet technological breakthroughs, and to improve the bomber force. These programs are necessary for maintaining essential equivalence.

US strategic defensive forces combine with offensive forces to support the deterrence strategy. Strategic defensive forces include those whose mission is air defense, air and missile surveillance and warning, and space surveillance. During peacetime, these forces have the mission of preserving the territorial and aerospace integrity of the United States.

STRATEGIC ARMS LIMITATION NEGOTIATIONS

In the Strategic Arms Limitation Talks (SALT), the United States seeks to reduce the likelihood of nuclear war and maintain strategic stability at lower force levels, thereby enhancing US national security. The Joint Chiefs of Staff support arms limitation agreements that are equitable and verifiable.

Pending outcome of the SALT II negotiations, the United States has continued to plan for forces within the Vladivostok framework, the Interim Agreement on Limitation of Strategic Offensive Arms and the 1972 Antiballistic Missile (ABM) Treaty with its 1974 Protocol.

US-USSR STRATEGIC OFFENSIVE FORCES

ICBM FORCES

ARMS LIMITATION CONSIDERATIONS

The Interim Agreement on Limitation of Strategic Offensive Arms prohibits construction of additional fixed, land-based ICBM launchers after 26 May 1972. Modernization and replacement of launchers is permitted, provided that silo dimensions are not increased more than 15 percent. The Agreement also prohibits conversion of ICBM launchers deployed prior to 1964, or launchers for "light" ICBMs (e.g., the Soviet SS-11, the US MINUTEMAN) into launchers for "heavy" ICBMs deployed after 1964 (e.g., the Soviet SS-9 and SS-18).

As a result, the fixed ICBM force was limited to 1,054 launchers for the United States. For the USSR, the force level included 1,607 launchers. The Protocol to the Interim Agreement, however, permits increases in SLBM launchers for each side, provided that an equal number of ICBM launchers deployed prior to 1964 or SLBM launchers on older submarines are dismantled or destroyed. The Soviets have exercised this option to add to their SSBN fleet and as a result are reducing their ICBM force.

In a SALT II agreement based on the Vladivostok framework, it would not be necessary to dismantle or destroy older ICBMs in order to add additional SLBMs, provided that the aggregate limit of 2,400 strategic nuclear delivery systems (ICBM launchers, SLBM launchers, and heavy bombers) or the sublimit on MIRVed missiles is not exceeded. Construction of additional fixed land-based ICBM launchers, however, still would not be permitted.

OVERVIEW

Chart 3 presents scale drawings and comparative individual characteristics of US and USSR ICBMs currently deployed or under development.

Chart 4 shows latest US estimates of US-USSR ICBM forces through the end of FY 1978.

USSR ICBM FORCES

At this time, the Soviets have over 1,400 ICBM launchers at operational complexes. The launcher figure is reduced from last year due to the dismantling of SS-7 and SS-8 launchers in accordance with the Interim Agreement.

The Soviet deployment program for new ICBMs is now beginning its fourth year. New Soviet ICBMs have greater reliability, range, payload and accuracy than the systems they are replacing. Moreover ICBM accuracies are expected to improve further as the Soviets continue their test programs and refine and modify selected components. The Soviet hard target kill capability could be somewhat better than previously estimated.

The Soviets are also pursuing initiatives which will improve the survivability of their ICBM force. The newly deployed missiles have silos with substantially greater structural hardness than the ones they are replacing, and they continue to construct hardened launch control facilities. The Soviets have also undertaken to insure the survivability of their communications systems through hardness and redundancy.

COMPARISON OF US AND USSR ICBMs

US USSR

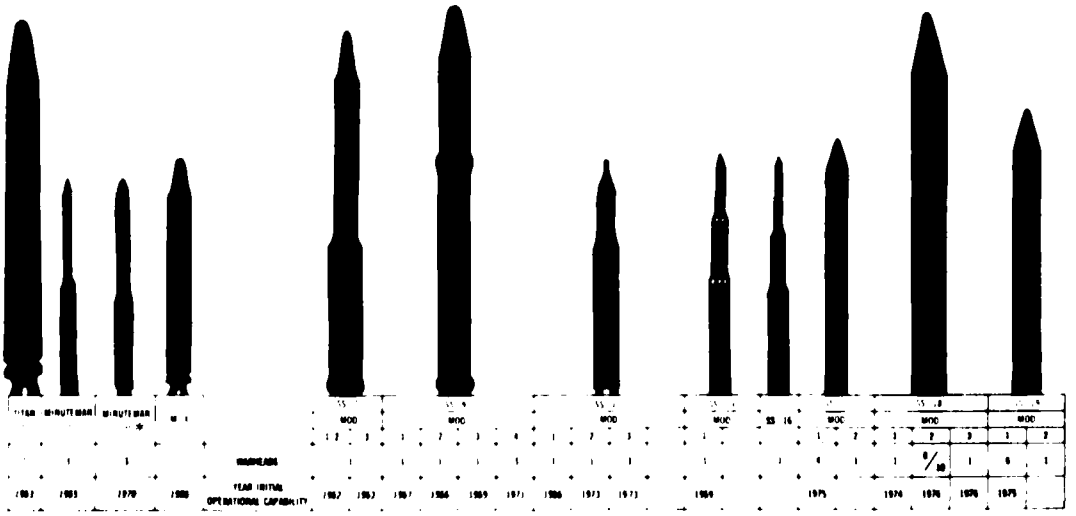


CHART NO 3

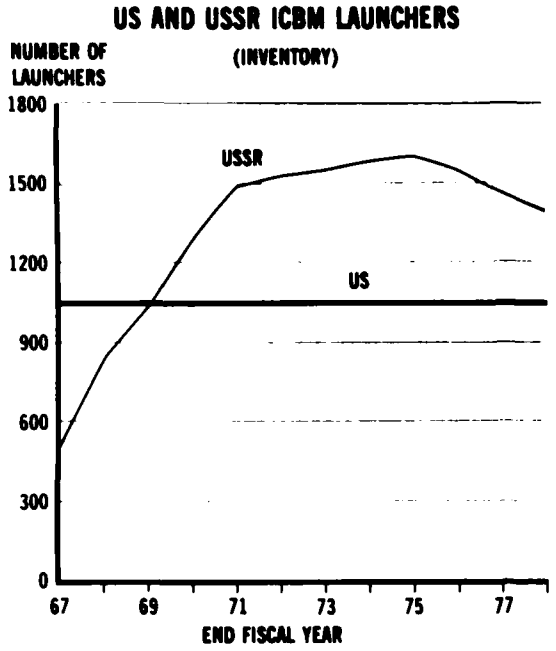


CHART NO 4

Two missile systems, the SS-20 intermediate-range ballistic missile (IRBM) and the SS-16 ICBM, have been developed as mobile systems. To date, only the SS-20 has been deployed in the mobile mode.

UNITED STATES ICBM FORCES

The US ICBM force of 1,054 will be maintained. The force will be composed of 54 TITAN, 450 single RV MINUTEMAN II and 550 MIRVed MINUTEMAN III missiles. The MINUTEMAN III force is being modernized to provide improved accuracy, increased yield and improved targeting flexibility.

The US ICBM force has a combination of characteristics, including positive command and control, high reliability and alert rates, accuracy, and timely weapons delivery which provide a flexible range of response options. Efforts are underway to further improve these capabilities by incrementally improving existing systems in the near term and by development of a new ICBM system.

In addition, it incorporates a command data buffer which permits retargeting of a MINUTEMAN III missile in 25 minutes and retargeting of all 550 MINUTEMAN III missiles in less than 10 hours. This capability increases the flexibility and responsiveness of the system. Further, it is proposed that this retargeting capability be incorporated in the Airborne Launch Control System.

Other improvements in the MINUTEMAN III missile are accuracy and yield. Improved software for guidance systems currently being deployed should permit a lower operational system circular error probable. The MK-12A higher yield RV, forecast for deployment, will markedly improve its utility.

Continuing development efforts include a maneuvering reentry vehicle for possible deployment on ICBMs and SLBMs. The MINUTEMAN silo upgrade program, which has added a significant degree of protection to the ICBM force against blast, shock and other effects, has been completed for MINUTEMAN III and is nearing completion for MINUTEMAN II. These silo improvements, combined with reliable sensor indications of impending attacks, can increase survivability and reliability.

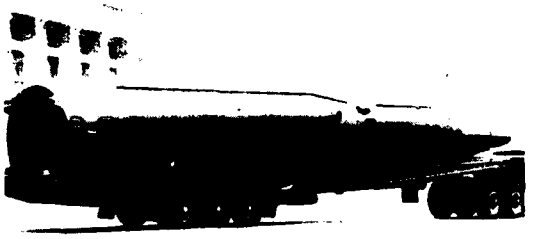
These improvements, while adequate to protect MINUTEMAN silo survivability in the near term, may be insufficient in the longer term as forecast improvements in Soviet counterforce capabilities are fielded. Unless these improvements can be restrained, either through verifiable agreement or as a result of unilateral Soviet action, silo survivability could be reduced in the mid-to late-1980s.

Measures to ensure the ICBM contribution to the TRIAD at an acceptable level in the face of these improved Soviet capabilities will be required. The most feasible and cost effective method for preserving that contribution is the multiple-aimpoint-based MX.

USSR MISSILES

SS-7 and SS-8

The SS-7 and SS-8 are old ICBMs that were designed and largely deployed before the mid-1960s. Originally, 209 launchers at operational complexes were constructed for these systems.



SS-8

As noted earlier, the Protocol to the Interim Agreement permits the substitution of SLBMs for ICBMs deployed prior to 1964. As of 1 October 1977, a number of SS-7 and SS-8 launchers had been dismantled to allow increases in the Soviet SLBM force.

SS-9/SS-18

For the fourth straight year, the number of SS-9 launch groups being converted to the SS-18 increased. Currently, approximately 100 SS-18 silos are operational, and work is continuing on others. The SS-18 is a modern large ballistic missile (MLBM), having greater throw-weight capability than any US ICBM. It is anticipated that all the SS-9 silos will be converted for the SS-18.

The Soviets have developed three variations of the "cold-launched" SS-18, and probably will deploy all three. In a cold launch, the missile is "popped out" of its silo by a gas generator before the main booster motors are fired. As a result, the silo is not heavily damaged and could be reloaded. In addition, cold launch also allows the firing of a missile with greater throw-weight. The Mod 1 and Mod 3 have single RVs; Mod 2 has a MIRV capability of eight to ten RVs. The Mod 3 has an operational range considerably greater than that of the other two SS-18 variants, and is more accurate than the Mod 1.

SS-9

The Soviets may plan to deploy a mix of the single-RV variants of the SS-18, although the Mod 3 may eventually replace the Mod 1. However, the Mod 2 is expected to be the most widely deployed variant of the SS-18, largely because of its MIRV capability.

SS-11/SS-17

More than 60 "cold-launch" SS-17s are now operational in converted SS-11 silos. Conversion of other SS-11 silos is underway.

The pace of conversion of the SS-11 silos to the SS-17 configuration is slower than expected last year. Conversions probably will be limited at each complex to avoid having too many launchers off line simultaneously.

The MIRVed SS-17 variant has been installed in operational silos. In February 1976, the Soviets began testing the SS-17 with a single RV. However, under US SALT II proposals, all SS-17 silos would be counted as MIRVed since they have been tested in a MIRV mode.

SS-11/SS-19

There are currently more than 200 operational silos for the SS-19, with additional SS-11 silos under conversion. The SS-19s are capable of carrying six MIRVs. The Soviets are now testing a single RV with the SS-19. However, as with the SS-17, all SS-19 silos would count as MIRVed missile launchers under US SALT II proposals.

SS-13/SS-16

Development of the initial version of the SS-16, a three-stage ICBM, was essentially complete by the end of 1974. This version carries a PBV and a single-RV payload. The status of this program is unclear.

LAND-MOBILE MISSILES

The Soviets appear to have developed the SS-16 as a mobile missile. They have apparently

decided not to deploy it in its mobile mode at this time. They may be expected to continue mobile ICBM development efforts to further their technology in this area. This development will also provide a hedge against the chance of increasing vulnerability of silo-based ICBMs in the future.

An even more serious question centers on Soviet deployment of the MIRVed SS-20 mobile Intermediate Range Ballistic Missile (IRBM) and the relationship of that system (which is outside SALT parameters so long as its range is less than 5,500 km) to the SS-16 which is included in SALT. The SS-20 comprises the first two stages of the three-stage SS-16. By upgrading SS-20 deployment to the SS-16, the Soviets could increase their mobile ICBM capability relatively quickly. This could be accomplished by the addition of a third SS-16 stage and payload to the two SS-20 stages. Such action could significantly increase the number of ICBMs in Soviet intercontinental forces. Upgrade of substantial numbers of SS-20 IRBMs to SS-16 ICBMs and their planned use as long-range missiles could degrade capabilities against regions near Soviet borders.

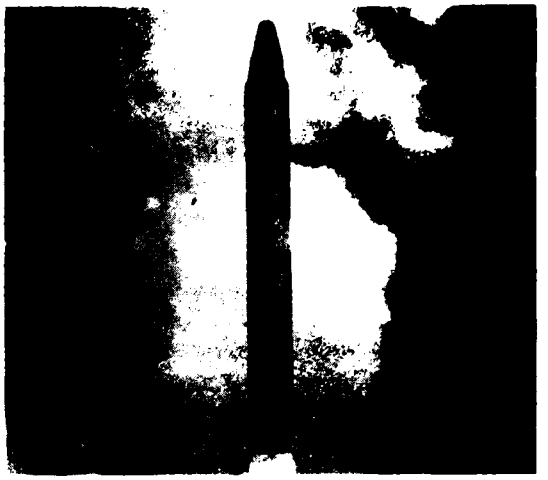
FUTURE ICBM DEVELOPMENTS

The Soviets have R&D programs in progress for more advanced ICBMs. Up to eight years of preflight development is usually required to bring a new missile to the flight test stage. During the early development period, there is usually little or no evidence of an identifiable new program. As a new system nears the flight test phase, information is more likely to become available. Consequently, more insight is available on systems that could be flight tested in the next few years--that is, by 1980. For the longer term, the United States must rely on past Soviet development patterns, on assessment of Soviet requirements, and on technology trends which are likely to influence future ballistic missile programs.

UNITED STATES MISSILES

TITAN II

Fifty-four TITAN II missiles were declared operational in 1963. The capabilities they provided at that time have remained relatively unchanged.

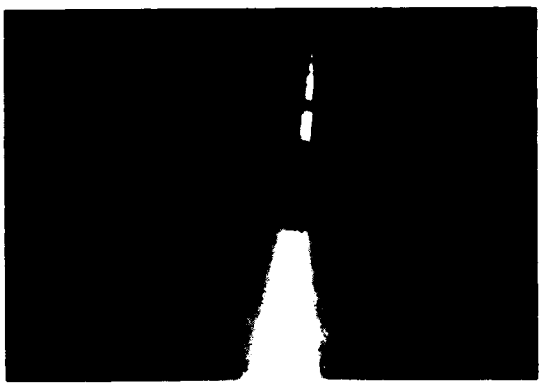


TITAN II

The TITAN warhead is the largest in the US ballistic missile inventory, and the high day-to-day alert rate makes the TITAN a dependable strategic deterrent. Today, as in the past, efforts are directed toward extending service life and lowering annual operating costs. The original guidance set is being replaced by a state-of-the-art guidance system. While no improvement in accuracy is expected, increased cost effectiveness should result.

MINUTEMAN II

The last of the current inventory of 450 MINUTEMAN II was deployed in 1967. Since then the MINUTEMAN force has been characterized by high day-to-day alert rates, low operating costs, and high reliability. Incremental improvements have increased its flexibility and the silo upgrade



MINUTEMAN II

program has improved system survivability. Its single warhead and its accuracy provide a capability for all but the hardest of installations. Its long range and single warhead provide a weapon for use against geographically isolated targets. There are no currently approved modernization programs.

MINUTEMAN III

MINUTEMAN III was deployed from 1970 to 1975. The accuracy with which a MINUTEMAN III can place warheads on three targets and its remote retargeting capability provide operational flexibility and confidence. Modernization programs include an improvement in accuracy and the replacement of the MK-12 reentry vehicle with the MK-12A. These improvements will help offset Soviet strategic momentum.

MINUTEMAN III

FUTURE ICBM DEVELOPMENTS

The MX program is the only significant US ICBM initiative being proposed. This system, with improved guidance and increased numbers of highly accurate RVs, together with highly survivable basing (such as buried trenches), could provide a valuable counterweight to Soviet strategic momentum and a hedge against future uncertainties in the strategic environment. The deployment of the MX in an alternate basing mode would allow the United States to retain prompt, high-confidence, retaliatory capabilities beyond the year 2000.

SLBM FORCES

ARMS LIMITATION CONSIDERATIONS

As noted earlier, the Interim Agreement limited submarine-launched ballistic missile (SLBM) launchers and modern ballistic missile submarines to the number operational and under construction on 26 May 1972, but allowed for additional construction as replacement for older ICBMs or SLBMs. As of the date of the agreement, the United States had 656 accountable SLBM launchers; the USSR had 740. The Protocol to the Interim Agreement, however, permitted the United States and the USSR to increase the size of these forces--the United States to 710 SLBM launchers on 44 nuclear powered ballistic missile submarines (SSBNs); the USSR to 950 SLBM launchers on 62 SSBNs. Any increase in SLBM launchers over those numbers operational and under construction on 26 May 1972 would require the dismantling and destruction of an equal number of ICBM launchers deployed prior to 1964 or SLBM launchers on older submarines.

OVERVIEW

The following three charts provide an overview of the comparative SLBM forces and programs.

Chart 5 presents scale drawings and comparative individual characteristics of US and USSR SLBMs currently deployed or under development.

Chart 6 provides a comparison of the ballistic missile submarine characteristics and a match-up between ship and missile system in each class.

Projected on Chart 7 are latest estimates of US-USSR SLBM forces through the end of FY 1978. Once a new submarine commences sea trials, its

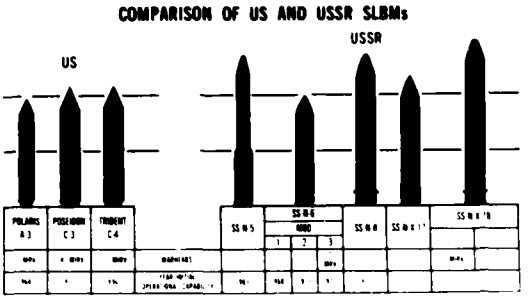


CHART NO 5

BALLISTIC MISSILE SUBMARINES

		YEAR OPERATIONAL	PROPULSION	MISSILE
USSR				
DELTA I CLASS	139 M	1973	NUCLEAR	12 SS N 8 (7,800 KM)
DELTA II CLASS	155 M	1976	NUCLEAR	16 SS N 8 (7,800 KM)
YANKEE CLASS	131 M	1968	NUCLEAR	16 SS N 6 (2400 3000 KM)
HOTEL CLASS	115 M	1963	NUCLEAR	3 SS N 5 (1300 KM)
GOLF CLASS	97.5 M	1962	DIESEL	3 SS N 5 (1300 KM)
US				
POLARIS	117 M AND 125 M	1960	NUCLEAR	16 A 3 (4600 KM)
POSEIDON	130 M	1971	NUCLEAR	16 C 3 (4,600 KM)
TRIDENT	171 M	1981	NUCLEAR	24 C 4 (7 400 KM)

CHART NO 6

launchers are counted under the Interim Agreement even though considerable time may elapse before it becomes operational.

The Soviets began to move from the 1972 Interim Agreement "baseline" level of 740 SLBM launchers to the 950 level in 1975. They are expected to continue to produce new SSBNs, with offsetting reductions in other systems to remain within the stipulated ceiling.

The Soviet ballistic missile submarine force continues to grow in size and capability, a reflection of its high priority. As of 1 January 1978, the Soviets had almost 900 SLBM launchers on SSBNs in operational status. There are additional launchers on SSBNs which are fitting out, on sea trials or under construction. There also are launchers on older diesel units which are not accountable under the SALT Interim Agreement.

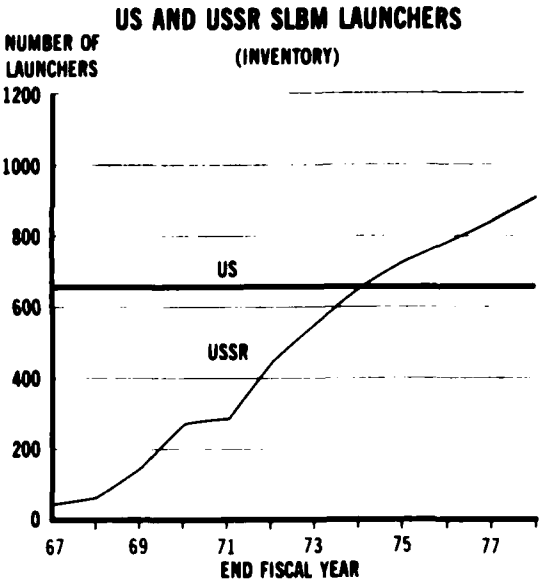


CHART NO 7

The Soviets continue to maintain a relatively small portion of their SLBM force on operational patrol. However, the number of SLBMs within firing range of the United States on a day-to-day basis is increasing as additional DELTA units become operational. With their long-range missiles, these SLBM forces could strike the United States while still in Soviet ports.

The Soviets perceive the US POSEIDON/POLARIS missile submarine force to be the primary seaborne threat to their homeland. Countering that threat is a major mission of the Soviet Navy. To that end, coordinated antisubmarine warfare (ASW) is frequently a theme of Soviet naval exercises. In the near term, the technological superiority of US nuclear submarines will frustrate Soviet detection efforts. However, in the long term, if Soviet proficiency at ASW continues to improve and their research program bears fruit, the threat to the US ballistic missile submarine force may increase. This threat could be offset, however, by the increased ocean areas they will need to cover when the US TRIDENT system becomes operational.

It is estimated that the USSR requires an average of 30-36 months to overhaul a nuclear submarine. This compares with 17 months for US shipyards. Considering their entire submarine

force, the USSR should overhaul about 20 units per year. This is a high shipyard workload and may explain in part why only about 15 percent of the Soviet first line nuclear fleet, as compared to over 50 percent for the United States, operates away from port at any given time. However, the Soviets are increasing and modernizing their repair and overhaul facilities.

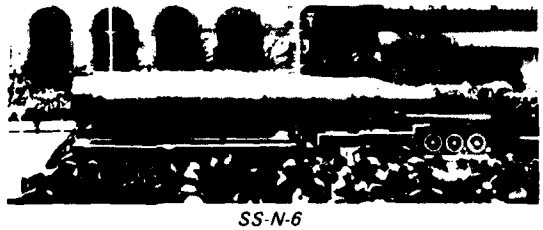
USSR SLBMs

SS-N-5

The SS-N-5 first entered the Soviet submarine force in 1963. Although it has a relatively short range and a large circular error probable (CEP), it remains an effective weapon against soft targets because of its large warhead size. This missile is currently deployed in the GOLF II class diesel powered ballistic missile submarine (SSB), and the HOTEL II class SSBN.

SS-N-6

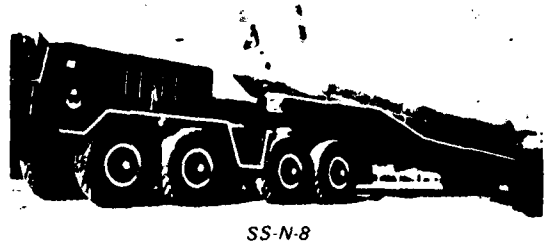
The SS-N-6 became operational in 1968 and is currently the most widely deployed Soviet submarine-launched ballistic missile system. It is carried by YANKEE class SSBNs. Three versions of the SS-N-6 missile are operational. One version has at least two and possibly three RVs, though not independently targetable.



SS-N-6

SS-N-8

The SS-N-8 is a long-range ballistic missile carried predominantly by the 12-tube DELTA I and 16-tube DELTA II class SSBNs. This two-stage missile is capable of delivering a relatively large warhead and is the longest range SLBM currently operational in the world.



SS-N-8

SS-NX-17

The SS-NX-17 began flight testing in 1975. The SS-NX-17 is the Soviet Union's first solid propellant SLBM and is the first to use a PBV for deployment of RVs, which suggests a MIRV capability.

SS-NX-18

The SS-NX-18, the Soviet's second SLBM with a PBV, was first fired from an at-sea platform in November 1976. This missile is similar to the SS-N-8 but it is larger, has a MIRV capability, and a more sophisticated guidance system. It is estimated that the SS-NX-18 can deliver three MIRVs.

FUTURE SLBMs

It is expected that the Soviets will continue to develop and improve their SLBM force to give it greater throw-weight capability and improved accuracy. The Soviets could develop and deploy a follow-on to the SS-N-8 or the SS-N-6 during the early 1980s.

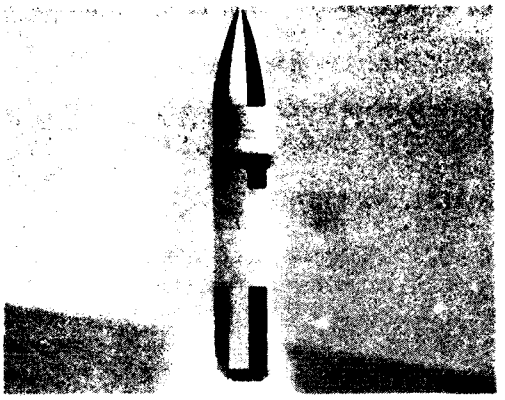
UNITED STATES SLBMs

POLARIS/POSEIDON

Since the initial deployment of the POLARIS A-1 SLBM in 1960, both the submarines and missiles have achieved improved operational capability and flexibility. In the Pacific, SSBNs are deployed with the POLARIS A-3 missile.

TRIDENT

Looking ahead, the TRIDENT system will replace the POLARIS/POSEIDON systems as they reach the end of their useful life. The current 31-



POLARIS

POSEIDON

ship POSEIDON force entered service in the five year period from 1963 to 1967. The POSEIDON force is planned to have a maximum extended service life of 25 years. Under such a condition, a significant reduction in SLBMs will occur in the late 1980s and early 1990s since the POLARIS/POSEIDON force was built at a much faster rate than that planned for TRIDENT.

The TRIDENT II missile, with its extended range, will permit SSBN basing in the United States without sacrificing alert rates, and will greatly increase the SSBN operating area. This increase will maintain the excellent survivability of the sea- based strategic deterrent by complicating the Soviet antisubmarine warfare (ASW) problem.

The TRIDENT I missile, now in production after a successful flight test program, has been sized to be compatible with POSEIDON SSBNs and will have missile accuracy at 7,500 km comparable to the current POSEIDON missile accuracy at half that range. Backfit of this missile into 12 POSEIDON submarines will commence in 1979. Deployment of the TRIDENT I missile into both the Atlantic and Pacific presents adversaries with a two-ocean ASW problem and increases US targeting flexibility and effectiveness.

This year's budget request seeks to continue the SLBM Improved Accuracy Program to provide a technology base for decisions on the TRIDENT II missile. Concept formulation for the TRIDENT II missile began in FY 1978; Initial Operational Capability (IOC) is expected in the 1980s.

MARK 500 RV

The continuation of advanced development of the Mark 500 EVADER maneuvering reentry vehicle is also proposed. The EVADER is designed to improve SLBM penetration of potential ballistic missile defenses and its development will serve as both a deterrent and a hedge against Soviet improvements to their antiballistic missile defenses. Compatibility with the TRIDENT I missile has been demonstrated during the missile flight test program.

USSR BALLISTIC MISSILE SUBMARINES

GOLF CLASS

GOLF class diesel powered submarines, the first Soviet submarines specifically designed to carry ballistic missiles, reached operational status in

1958. Most of these units almost certainly have been assigned missions against targets on the Soviet periphery.

HOTEL CLASS

The first of eight HOTEL I class SSBNs was launched in 1959 and carried SS-N-4s. Most of these units were converted to carry the SS-N-5 and were designated HOTEL II.

YANKEE CLASS

The YANKEE class SSBN, when introduced into the Soviet fleet in late 1967, represented a significant advance in Soviet sea-based strategic capability. Between 1966 and 1974, 34 YANKEEs were produced, which constitute the largest component of the Soviet strategic SSBN fleet. Thirty-three units are armed with 16 SLBMs of the SS-N-6 family; one carries SS-NX-17 missiles.

YANKEE CLASS

DELTA I AND II CLASSES

Construction of the 12-tube DELTA I is believed to have ended. The DELTA I and DELTA II are armed with the SS-N-8 missile. The long range and accuracy potential of this missile system, combined with the operating capabilities of DELTA I and DELTA II SSBNs, make this weapon system the greatest SLBM threat to the United States. These platforms are within missile range of most US targets from their home ports.

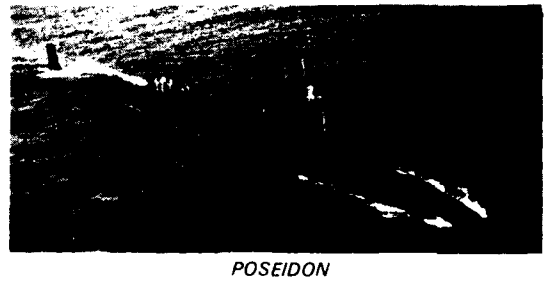
DELTA CLASS

UNITED STATES BALLISTIC MISSILE SUBMARINES

POLARIS/POSEIDON

The US SSBN force currently consists of five classes of submarines. The oldest two classes consist of a total of 10 POLARIS submarines with the POLARIS A-3 missile. These 10 submarines deploy from Guam and comprise our Pacific sea-based strategic force. The other three classes (31 submarines) have been modified to carry the POSEIDON missile.

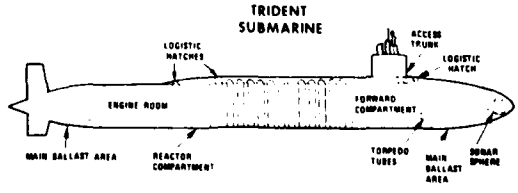
POSEIDON submarines deploy from Charleston, South Carolina; Holy Loch, Scotland; and Rota, Spain. Relocation of the Rota-based squadron to the United States is planned during 1979. The planned conversion of 12 POSEIDON missile submarines to the longer range TRIDENT I system will permit US basing with no degradation of overall force alert rate.



POSEIDON

TRIDENT

The TRIDENT submarines, each capable of carrying 24 MIRV missiles, will achieve Initial Operational Capability in 1981. The survivability and high system effectiveness of TRIDENT will contribute to a strong sea-based deterrent in the



mid-1980s and beyond. The TRIDENT is quieter than POSEIDON, faster, capable of sustaining a higher at-sea rate and armed with longer range missiles which increase the submarine operating area. Furthermore, the TRIDENT launch tubes have been designed with growth potential to accommodate the larger TRIDENT II, as a follow-on to the TRIDENT I missile.

BOMBER FORCES

ARMS LIMITATION CONSIDERATIONS

It was agreed at Vladivostok that "heavy bombers" would be included in the 2,400 aggregate limitation of strategic nuclear delivery vehicles. The questions of which and how many heavy bombers to include under the 2,400 limit remain unresolved. The Soviets maintain that of their aircraft only the TU-95 (BEAR) and Myasishchev (BISON) aircraft actually configured and intended for use in a heavy bomber role are subject to the limitation. The United States contends that all heavy bomber type aircraft must be subject to the 2,400 limit.

The Joint Chiefs of Staff have recommended counting the Soviet BACKFIRE in the aggregate since it has characteristics and capabilities similar or superior to those aircraft which both sides agree are heavy bombers. While estimates of maximum range differ, the BACKFIRE can deliver ordnance on the United States and recover in third countries without refueling. In wartime the Soviets could employ the BACKFIRE against the United States.

STATIC COMPARISON OF US AND USSR BOMBERS

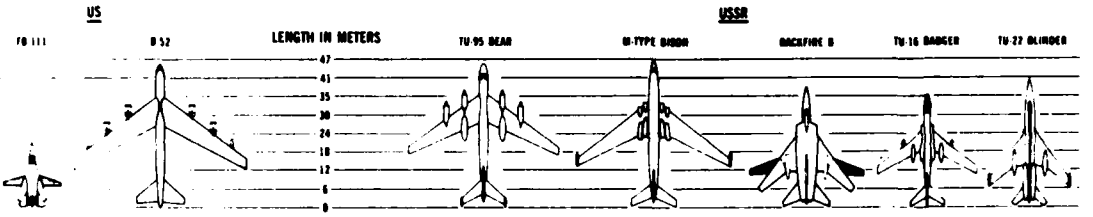


CHART NO 8

Chart 8 provides drawings of US and USSR bombers currently deployed. Chart 9 shows latest estimates of the respective long-range bomber forces through the end of FY 1978. Bombers assigned to Soviet Naval Aviation (SNA) forces are not included on this chart.

USSR BOMBERS

For a number of years the Soviet Strategic Long-Range Aviation (LRA) bombers have included the four-engine turboprop BEAR and the four-engine jet BISON. The current strike force has about 140 BEAR and BISON.

The Soviets have more than 40 BISON that are now configured as tankers which could be reconfigured as bombers. The BISON tankers refuel both the BEAR and BISON, and could refuel the

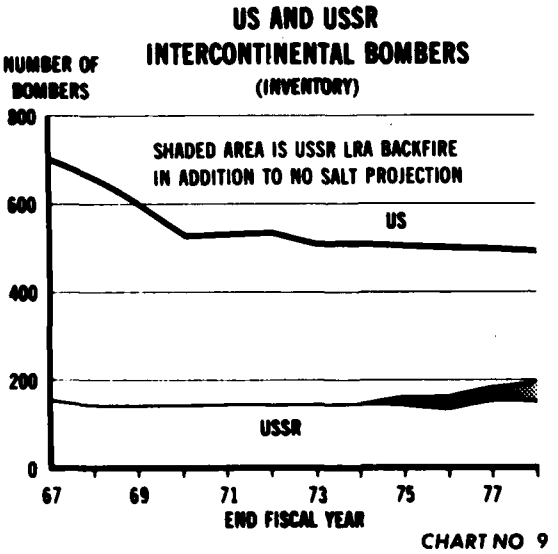
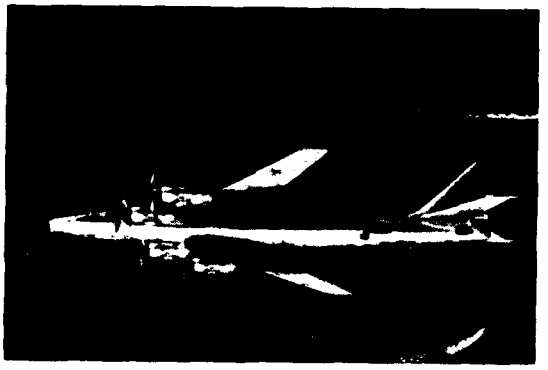


CHART NO 9



BEAR

BACKFIRE. The Soviets may develop a new tanker based on the IL-76/CANDID jet transport, and could convert the remaining BISON bombers to tankers.

BISON

The BACKFIRE is the only Soviet bomber currently being produced and deployed to their LRA and Soviet Naval Aviation forces. Over 100 BACKFIRE have probably been produced. The BACKFIRE is a versatile, multi-purpose aircraft capable of performing nuclear strike, conventional attack, antiship, reconnaissance, and electronic warfare missions. Although BACKFIRE clearly has extensive capabilities for various types of peripheral land and sea missions, its intercontinental capabilities cannot be prudently ignored.

The Soviets may be in the process of developing a new long-range bomber to replace the BEAR and BISON. Since 1974, Soviet officials have on several occasions referred to such developments. If such a program is under way, this new bomber could appear in the early 1980s.

USSR AIR-TO-SURFACE MISSILES

The AS-3/KANGAROO air-to-surface missile carried by some BEAR variants can deliver a nuclear warhead up to 350 nm. The AS-4/KITCHEN air-to-surface missiles identified with BACKFIRE can also deliver a nuclear warhead.

UNITED STATES BOMBERS

The US manned bomber will play an important role in deterrence into the foreseeable future. Currently, approximately 30 percent of the bomber force is maintained on strategic alert. Fully generated, the bomber force carries approximately one-third of all deliverable US strategic nuclear weapons and half the total megatonnage.

The B-52 is the major aircraft component of the US strategic inventory. Of the 742 produced between 1954 and 1964, 349 remain in the active force. Although the average age of the active B-52

B-52

force is over 19 years, modification efforts are under way to update these aircraft. Of the 76 FB-111A aircraft delivered between 1968 and 1971, 66 remain in the active inventory. The B-52 and FB-111 will continue to constitute the US intercontinental bomber force while the challenge of future modernization is pursued.

FB 111

For strategic forces, air refueling enables the long, low-level flight profiles necessary to penetrate the Soviet air defense system. Air refueling is also essential to timely deployment and effective employment of tactical air forces.

While the total tanker force is declining slightly, tactical air force and airlift force contingency plans which require the use of air refueling are increasing. The rising requirements for air refueling for aircraft other than strategic bombers has led to the growing probability that in a time of major crisis, strategic nuclear forces and early-deploying general purpose forces will compete for tanker support. The tanker force must be modernized to support current and future US air refueling requirements. Improved engines for the KC-135 and development of the Advanced Tanker/Cargo Aircraft (ATCA) will add to these capabilities, reduce the critical refueling constraint, and increase flexibility as refueling requirements grow in the future.

Bomber modernization will continue. Current programs include upgrading and extending the useful life of the various B-52 models, and modernization of offensive avionics. The defensive capabilities of the B-52 and FB-111 aircraft will be updated and a broader range of nuclear and conventional weapons will be developed.

UNITED STATES AIR-TO-SURFACE MISSILES

The Short-Range Attack Missile (SRAM) is a supersonic nuclear weapon presently deployed with the strategic bomber force. The SRAM can penetrate any known or projected Soviet defense to destroy high value targets or suppress sophisticated terminal defenses. The flexibility inherent in the SRAM also makes it an efficient weapon for use in limited nuclear options.

USSR CRUISE MISSILES

To date, the Soviets have concentrated on the development of tactical, theater-oriented cruise missiles with ranges less than 850 km. The asymmetries in geography and population distribution of the US and USSR are probably the driving reasons for the lack of current Soviet activity in developing a strategic type of cruise missile system. The Soviet requirement for a long-range cruise missile is minimal; 55 important US cities with some 71 million people are within 850 km of the 100 fathoms depth curve in the Atlantic and Pacific Oceans. Conversely, only six of the major cities in the Soviet Union, with some 2.2 million people, are located within a similar 850 km distance.

A number of different Soviet cruise missile systems (primarily antiship) have been deployed. R&D is continuing on several new systems.

Although there is great uncertainty in regard to Soviet intent to develop a strategic cruise missile, there is no doubt about their capability to do so.

UNITED STATES CRUISE MISSILES

The Air Force is currently planning a competitive flyoff program to identify the best air-launched cruise missile (ALCM) candidate for future deployment. This program is planned to support a limited operational capability in 1980 with an Initial Operational Capability in 1981. Cruise missile applications include delivery from carefully selected launch points inside and outside the Soviet defensive perimeter to take advantage of the long range and accuracy projected for this weapon. Some B-52s and the FB-111s will penetrate to targets using SRAM and gravity weapons, while other B-52s will launch cruise missiles.

Initially, cruise missiles will be deployed on current bomber aircraft (B-52Gs). Additional options to employ other aircraft as cruise missile carriers are under study. The ALCM will complicate the enemy's defensive problem and thus enhance bomber penetration. ALCM program development provides for subsonic flight at low altitude at a range of 2500 km. Powered by a small turbofan engine, the missile will incorporate an inertial guidance system updated by Terrain Correlation Matching.

Various methods of treating cruise missiles in SALT are currently under consideration. US cruise missile development programs are going forward, structured so that missile characteristics can be adjusted to meet the provisions of further SALT agreements.

OTHER OPERATIONAL OFFENSIVE FACTORS

In addition to factors already discussed, other indicators of nuclear strength contribute to an analysis of relative strategic capabilities. The following charts show the growing strategic nuclear operational capabilities of the Soviet Union.

These charts do not include ICBM launchers under construction or conversion, or submarines in conversion, overhaul or awaiting missiles. Only unit equipment bombers are counted.

Chart 10, Operational Strategic Offensive Delivery Vehicles, points out the emphasis the USSR has placed on strategic offensive programs and their relationship to US programs.

US AND USSR OPERATIONAL STRATEGIC OFFENSIVE DELIVERY VEHICLES

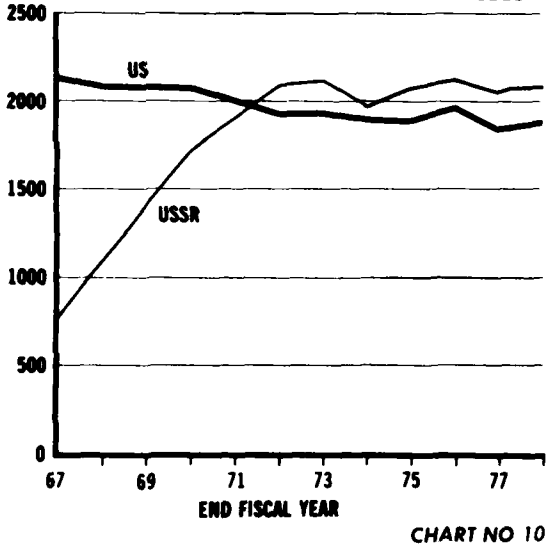


CHART NO 10

Chart 11 depicts the number of strategic warheads and bombs fitted on operational weapon systems or carried by the delivery vehicles. The US advantage in this measure is being rapidly diminished.

US AND USSR OPERATIONAL STRATEGIC OFFENSIVE WARHEADS/BOMBS

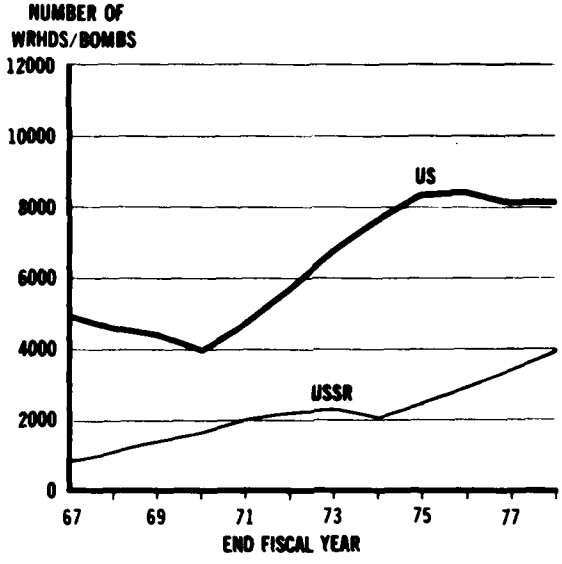


CHART NO 11

US/USSR STRATEGIC DEFENSIVE FORCES

OVERVIEW

The strategic equation is ordinarily thought of in terms of "offensive" and "defensive" forces. Either type force can threaten or contribute to strategic stability. A modest increase in offensive capability might require massive investment in defenses. The opposite could also be true. Passive defense measures such as dispersal and population sheltering add yet another factor to the equation. If by passive defenses one side has reduced the effects of retaliation to an acceptable level, then deterrence has been substantially reduced. Extreme asymmetries in strategic defensive capabilities can therefore create an unstable situation.

ANTIBALLISTIC MISSILE FORCES

ARMS LIMITATION CONSIDERATIONS

The Antiballistic Missile (ABM) Treaty of 1972 originally limited each side to two ABM sites, one site centered on the national capital and the other on an ICBM launch area. Each site could contain no more than 100 ABM interceptor missiles at launch positions. There were specific restrictions on the radars which could be employed at the sites. The Treaty also prohibited the parties from developing, testing, or deploying ABM systems or components which were sea-based, air-based, space-based or mobile land-based. In addition, the parties agreed not to develop, test, or deploy ABM launchers capable of launching more than one interceptor missile at a time; ABM systems that would provide a rapid reload capability; and interceptor missiles with more than one independently guided warhead.

On 3 July 1974, a Protocol to the ABM Treaty was signed in Moscow. The Protocol, which was ratified on 10 November 1975, further limits the parties to only one ABM deployment site. Each party, however, is permitted to relocate its ABM site once, provided that advance notice of the change is given during a year when the ABM Treaty is scheduled for review. The ABM Treaty is reviewed every five years; the first review was held in the Fall of 1977. In September, the US and USSR jointly stated a belief that the treaty serves the security interests of both countries and reaffirmed their commitment to the Treaty.

USSR BALLISTIC MISSILE DEFENSE

Operational Soviet ABM defenses include HEN HOUSE early warning radars, DOG HOUSE and CAT HOUSE battle management radars near Moscow, TRY ADD engagement radars and the ABM-1B/GALOSH interceptor missiles at four launch complexes also near Moscow. Each of the four complexes contains 16 launchers. There is no evidence that the Soviets intend to increase the 64 launchers to the 100 permitted under the agreement.

The present Soviet ABM system could provide adequate protection of the Moscow area against small attacks using unsophisticated missiles without penetration aids.

Although ABM launcher levels have remained static for the past few years, the Soviets have continued to upgrade both their ballistic missile early warning (BMEW) and battle management radar capabilities. Their HEN HOUSE BMEW network has been expanded.

The USSR continues R&D efforts on components for a new ABM system.

UNITED STATES BALLISTIC MISSILE DEFENSE

Operationally, the US Ballistic Missile Defense (BMD) program is now dormant. The HARDSITE and Site Defense programs are now oriented toward solution of technology problems. SAFEGUARD, the free world's only BMD system, has been terminated, and the site in North Dakota inactivated. The single remaining functional element of SAFEGUARD, the Perimeter Acquisition Radar Attack Characterization System, was transferred to the Air Force on 1 October to perform attack characterization functions for the Aerospace Defense Command.

AIR DEFENSE

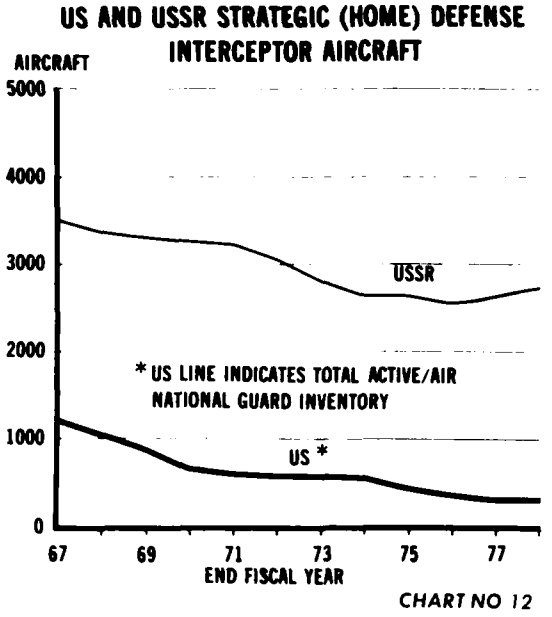
OVERVIEW

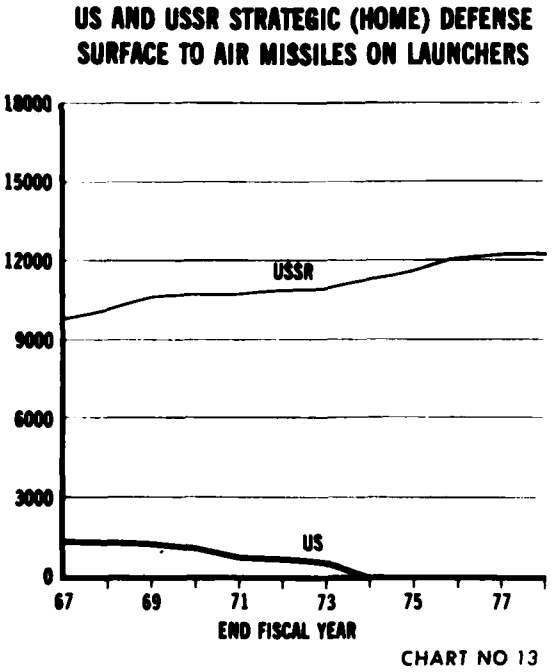
Charts 12 and 13 display the numerical imbalance in the US and Soviet interceptor and missile defense force structures.

USSR AIR DEFENSE

The Soviet Union's strategic air defense is by far the most extensive in the world: more than 6,000 radars located at early warning and ground control intercept radar sites; about 2,600 fighter interceptors; and more than 12,000 strategic SAMs.

Many Soviet air defense systems were originally designed and deployed to counter the medium-to-high altitude bomber and stand-off missile threats of the late 1950s and early 1960s. Their effectiveness against low altitude tactics and the SRAM which the US Strategic Air Command employs today is less than their sheer numbers would suggest.





UNITED STATES AIR DEFENSE

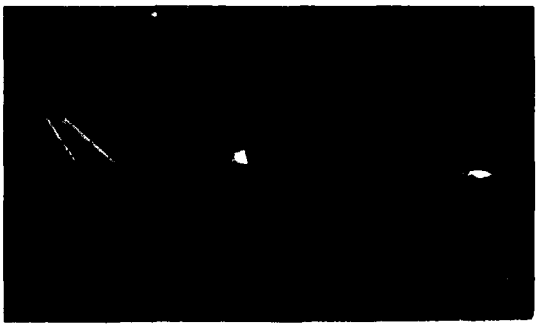
The North American air defense system is considerably smaller than that of the USSR. The limited US air defense force is tasked to defend important areas worldwide, including areas of the continental United States and air and sea lines of communication. This force provides the United States with the capability to perform peacetime surveillance and control of US airspace using dedicated strategic defensive forces augmented by general purpose forces.

The current US posture does not protect against a massive bomber attack. Rather, it seeks to preclude an aggressor from having unchallenged access to the air space over the United States. Plans call for augmentation forces to be made available at a time of increased readiness or declaration of hostilities. They would include forces from the Air Force Tactical Air Command, and from Army, Navy and Marine forces which have primary missions other than strategic air defense. Air National Guard interceptor squadrons, which provide a portion of the peacetime alert, would be fully mobilized in time of crisis.

SURVEILLANCE AND COMMAND AND CONTROL

USSR SURVEILLANCE AND COMMAND AND CONTROL

MOSS-type aircraft provide the USSR with its limited airborne controlled intercept capability. The MOSS has worked in overwater exercises, but is unequal to the more challenging overland task. If the USSR intends to improve its air defense, a new airborne intercept warning and control aircraft system, a better radar network for ground controlled intercept (GCI), and better airborne radars will be required. Deployment of new



MOSS

control systems will make significant improvements in Soviet low altitude defense.

UNITED STATES SURVEILLANCE AND COMMAND AND CONTROL

The US aircraft early warning and surveillance radar system was deployed during the late 1950s and early 1960s. Since then, this system has been steadily reduced. Regional control centers and a network of USAF and Federal Aviation Administration radars, which currently provide US surveillance, are seriously deficient in low-altitude and long-range detection. Interceptors based at 26 alert locations provide peacetime airspace sovereignty and control around the periphery of the continental United States. Because the peacetime air sovereignty mission deployment is less than optimum for wartime, redeployment plans exist to enable the interceptor force to meet the threat more effectively. The present surveillance system overall suffers from high operating costs, wartime vulnerability, and severe coverage deficiencies. Modernization of strategic air defense forces in the light of the increasing Soviet bomber threat is an important requirement.

Some modernization of the surveillance and control system is underway. The US is bringing into service the E-3A Airborne Warning and Control System (AWACS). If sufficient AWACS aircraft are made available for CONUS air defense, vulnerabilities of the ground control centers will be offset and target acquisition and interceptor control will be greatly improved. Enhancement of the present distant early warning (DEW) LINE for northern warning of bomber attack is under study. The most promising approach calls for the installation of low cost, gap-filling radars to establish continuous all-altitude coverage by the mid-1980s. The development of over-the-horizon BACKSCATTER radar (OTH-B) could also provide long-range bomber warning seaward during the same time frame. A new air defense interceptor, which could be deployed in the early 1980s, would enable the full potential of this modern air defense system to be realized.

E-3A

INTERCEPTORS

OVERVIEW

Chart 14 provides a comparison of Soviet and US interceptors.

STATIC COMPARISON OF US AND NEWEST USSR INTERCEPTORS

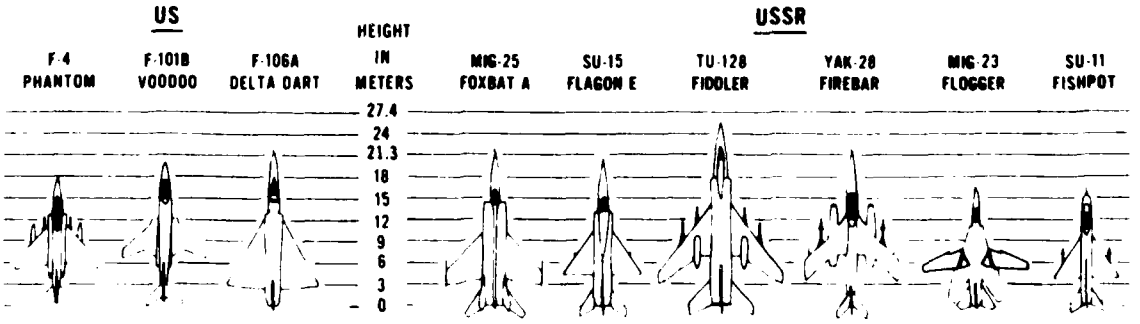


CHART NO 14

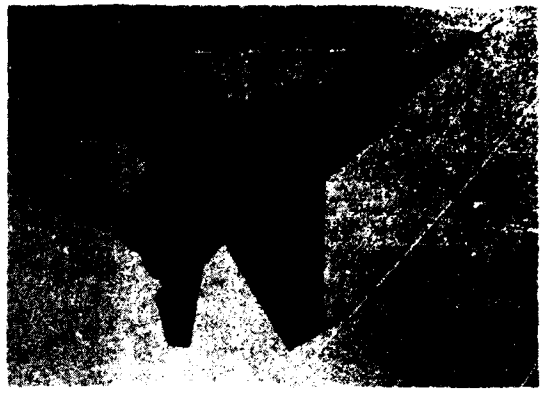
USSR INTERCEPTORS

The Soviets have accelerated their air defense interceptor force modernization program. The force currently consists of approximately 2,600 aircraft. Deliveries of new MIG-23 FLOGGER-B and MIG-25 FOXBAT-A together with redeployment of many of the aircraft replaced by these interceptors have reversed 18 years of inventory decline, possibly precipitated by the less than complete success of Soviet-supplied surface-to-air missile defenses in the Vietnam and Middle East conflicts. In addition, the Soviets are adopting new short-range, visually aimed weapons as secondary armament on many of their deployed interceptors. These weapons should enhance the capability of Soviet forces to deal with hostile aircraft which employ evasive tactics or electronic countermeasures.

FLOGGER

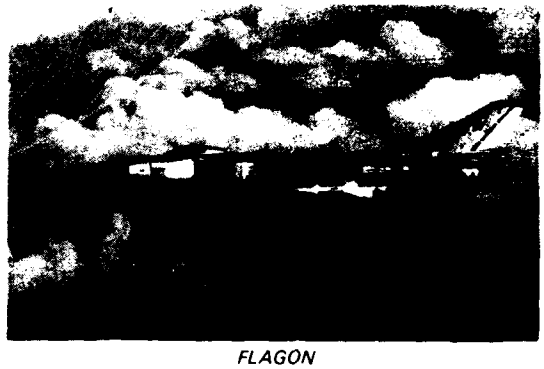
The present Soviet force consists of pre-1964 aircraft (MIG-17 FRESCO D, MIG-19 FARMER B/E, and SU-9 FISHPOT B) and newer generation fighters (YAK-28P FIREBAR, SU-11 FISHPOT C, TU-128 FIDDLER, SU-15 FLAGON A/D/E/F, MIG-25 FOXBAT A, and MIG-23 FLOGGER B). Hardened aircraft bunkers at air defense fields provide shelter for a significant portion of the force; this program is continuing.

The Soviets are currently attempting to develop a follow-on interceptor which can detect, track, and shoot down a penetrator at a lower altitude, unlike conventional airborne intercept radar and missile guidance systems which are affected by ground clutter. This system contrasts with the



FOXBAT

rudimentary system currently deployed in the FLOGGER B, the first Soviet aircraft with a demonstrated ability to track and engage targets flying below its own altitude.



FLAGON

UNITED STATES INTERCEPTORS

The F-106 DELTA DART is the mainstay of the US dedicated air defense interceptor force. This aircraft, originally deployed in the early 1960s, has been continuously updated, but is nearing the end of its long service life. At present, approximately half of the force is allocated to Air National Guard (ANG) squadrons, and half to regular active squadrons. One ANG F-106 squadron is scheduled to convert to F-4s in FY 1978 so that its assets can be redistributed to other F-106 squadrons to maintain their capabilities.

F-101 VOODOOs of the same vintage as the F-106 are assigned to three ANG squadrons. An F-101 squadron converted to F-4s in FY 1977.

F-106

F-101

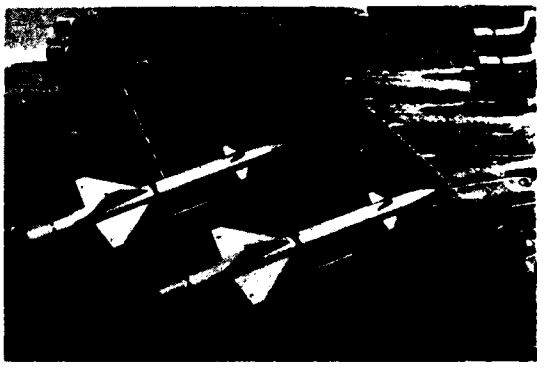
F-4

The F-4 PHANTOM II is the primary general purpose fighter used to augment the dedicated interceptor force and will be replaced by the more advanced F-15 EAGLE as it becomes available. Up to 160 additional aircraft from Air Force, Navy and Marine Corps general purpose forces are earmarked to serve as interceptors in times of crisis, and offer a limited augmentation capability for that purpose.

STRATEGIC SURFACE-TO-AIR-MISSILES (SAM)

USSR SAMs

The Soviet Strategic Defense Missile Force is composed of the SA-1 (GUILD), the SA-2 (GUIDELINE), the SA-3 (GOA), the SA-5 (GAMMON), and the ABM-1 (GALOSH).



SA-1

Soviet strategic SAM forces have steadily expanded and improved. While active SA-2 sites have declined in number, this has been largely offset by the deployment of additional SA-3 low-altitude and SA-5 high-altitude sites.

UNITED STATES SAMs

The last of the US strategic SAM forces was inactivated in 1974. However, because of the proximity of Cuba, one HERCULES and two HAWK battalions, all general purpose, were retained in a strategic air defense role in southern Florida. Additionally, because of its proximity to the USSR, one general purpose HERCULES battalion was retained in the Anchorage area.

CIVIL DEFENSE

USSR CIVIL DEFENSE

The Soviet Union includes civil defense as an integral part of its overall military strategy. Their rationale asserts that credible civil defense contributes to deterrence, strategic stability, and the ability of the state to survive. Civil defense in the USSR is a military controlled nationwide program focused primarily on protection of people (the leadership, essential personnel, and the general population, in that order); continuity of economic activity in wartime; and recovery from the effects of a nuclear attack. While it is not a crash effort, the pace of the program has substantially increased since the late 1960s. The principal achievement

has been the construction of blast shelters designed to protect all levels of leadership and essential personnel in the labor force. Industrial protection has concentrated on construction of these blast shelters and implemented selected machinery protection measures at a wide variety of industrial facilities. It is estimated that hardened shelters currently exist for a minimum of 10-20 percent of the general urban population. There is little doubt about the extensive nature of the Soviet civil defense program.

UNITED STATES CIVIL DEFENSE

United States concern for the Soviet program is based on the actual and perceptual role of civil defense in strategic stability and deterrence. Should the Soviets believe their civil defense program makes nuclear war a reasonable option, then the strategic nuclear balance and deterrence could be upset.

US policy has tended to rely on mutual vulnerability as the key to deterrence. US civil defense has been accorded a low priority and does not maintain an effective capability. A reassessment of this view is required, along with an examination of what a larger program could and could not accomplish.

US civil defense programs currently seek to develop the capability to relocate citizens from potential target areas and metropolitan areas to areas of lower risk. Civil defense programs also seek to provide fallout protection for people near places of work or residence.

In the broadest sense, a strong and effective civil defense program would complement and support a US military effort in nuclear war by enhancing the survivability of the population and the industrial capacity of the United States, upon which the nation's defense effort depends.

MILITARY SPACE ACTIVITIES

OVERVIEW

The Soviet Union has continued to pursue extensive research and development and a renewed testing effort in space warfare. In terms of space weapon capability, they are ahead--and are likely to continue in the lead for the next several years.

SATELLITE INTERCEPTORS

USSR SATELLITES

The Soviets conducted four antisatellite tests in 1977. The satellite intercept capability demonstrated during the Soviet tests complicates the US task of space identification, attack assessment and warning of hostile space events.

UNITED STATES SATELLITES

The major concern in US satellite defense is to insure that effective command, control and communications systems are available so that strategic forces can be employed as required. A capability is needed to detect attacks on US satellites and to warn national authorities on a timely basis of any Soviet attempts to gain military advantage in space.

The President has proposed development of an agreement with the Soviet Union whereby both countries might forgo the capability of destroying satellite vehicles. The ability to verify compliance with such an agreement would be of primary importance to the United States. US research and development programs to reduce relative vulnerability are planned to continue while the negotiations proceed.

RECONNAISSANCE AND WARNING SYSTEMS

USSR RECONNAISSANCE

The Soviet reconnaissance effort consists of airborne, naval, ground-based, and space collectors, which can be integrated to provide information on US operations. Although the Soviet information requirements are similar to those of the United States, the openness of the US society makes the Soviet collection task markedly easier. The Soviet reconnaissance program is tailored to fill information gaps and to meet specific operational requirements.

The Soviets employ a variety of reconnaissance aircraft targeted primarily against central Europe, the Sino-Soviet border and selected allied naval activities. These reconnaissance aircraft are operated by Long Range Aviation, Naval Aviation, Frontal Aviation, and Military Transport Aviation units. The majority of Soviet reconnaissance missions are flown from bases in the USSR, with some missions conducted from Cuba, Guinea, and Angola. As required, aircraft are sent to the bases outside the USSR to accomplish specific reconnaissance tasks. Soviet sea-based reconnaissance is performed by auxiliary ships specially designed and fitted as intelligence collectors, by warships, and by merchant ships for certain limited collection tasks. The principal mission of sea-based reconnaissance is visual, electronic, and acoustic surveillance of US forces and bases. In this regard, particular emphasis is placed on the US submarine ballistic missile force, carrier strike force and Strategic Air Command operating locations overseas. They also monitor space and missile R&D activity, coastal signals and specific events of interest.

UNITED STATES WARNING SYSTEMS

The primary US systems for warning of ICBM and SLBM launches remain the early warning satellites and the Ballistic Missile Early Warning System (BMEWS). These are complemented by the SLBM detection and warning system and the Perimeter Acquisition Radar Attack Characterization System (PARCS). Tactical warning and attack characterization of ICBM and SLBM attacks are necessary to maximize the survivability of strategic forces and the time available for the National Command Authorities' (NCA) decisions and actions. Planned improvements to PARCS will improve discernment of the nature of an attack. Improved SLBM phased-array radars are being procured to replace obsolete SLBM detection and warning systems. The lack of a ballistic missile defense makes surveillance and attack warning even more essential to the NCA decisionmaking process. The Missile Surveillance Technology Program is working toward enhanced missile surveillance systems in the 1980s.

The warning and characterization task of the US BMEWS is being complicated by Soviet ICBM improvements, existing MIRVs and other technological developments. Additional data must be collected and analyzed within current time constraints to determine the character of an offensive Soviet missile launch. Upgrading and improvements to the BMEWS are planned to provide improved object counts, missile impact prediction, and attack assessment.

PRC STRATEGIC FORCES

OVERVIEW

The Chinese now have a limited but credible capability for nuclear strikes by missiles around the periphery of the People's Republic of China. Their capacity to produce fissionable materials is expanding. At present, the Chinese have no deployed missile capable of attacking the continental United States and are not projected to deploy such a system for several years.

During 1977, Chinese surface-to-surface missile and related programs have apparently expanded. In addition, there have been nuclear weapon tests. This activity suggests a continuing emphasis by the Chinese on developing strategic missile and space systems.

The People's Republic of China has made a substantial investment in research, developmental testing, and production facilities for both liquid and solid propellant missile systems. Although the Chinese have not yet flight tested a solid propellant ballistic missile, they continue to expand their solid propellant rocket motor facilities. They will probably develop solid propellant ballistic missile systems.

PRC LAND-BASED STRATEGIC BALLISTIC MISSILES

CSS-1

The CSS-1 MRBM can reach targets in the Eastern USSR, peripheral nations, and some US bases in the Far East. The deployed force, has not increased significantly since 1972.

CSS-2

CSS-2 IRBM missiles are currently deployed in China and the number is expected to remain the

same. As currently deployed, CSS-2 missiles can reach targets in Central and Eastern Asia.

CSS-3

The CSS-3, a limited-range ICBM system, was flight-tested in 1976. While the PRC has not abandoned the CSS-3 program, only limited numbers will probably be deployed. This missile gives the PRC a limited capability to cover targets in Asia, parts of the European USSR, the Marianas, Alaska, Australia, and portions of the Middle East, but not the continental United States.

CSS-X-4

The CSS-X-4 is the PRC's only ICBM with a potential to hit continental US targets. It is in the same class as the US TITAN II and the Soviet SS-9.

Full flight testing of this missile will require launches to an open ocean impact area, probably in the Pacific. Analysis of such launches will provide much more data about characteristics of the system. The PRC could have a small number of CSS-X-4s deployed in silos by the early 1980s.

PRC SLBMs

Development may be underway on a submarine-launched ballistic missile and a nuclear powered ballistic missile submarine. The PRC's first-generation SLBM will probably be a two-stage solid propellant system comparable in size and capability to the early US POLARIS missile.

PRC BOMBER FORCE

The PRC bomber force, credited with a nuclear delivery capability, remains outmoded when compared to those of the United States and USSR. It is useful only for regional operations against Eastern and Southern Asia and against Japan and the Western Pacific islands.

PRC production of the TU-16 BADGER jet intermediate-range bomber began in 1968. More than 80 of these Soviet-designed bombers are now operational. Although no radical changes to the BADGER basic design are expected, limited production of ECM, reconnaissance, or tanker variants could be initiated at any time. An air-to-surface missile carrier still remains a possibility in the future.

The IL-28 BEAGLE is an old twin-jet medium bomber but PRC military planners still appear to consider it an important weapon system. Four hundred IL-28s are now operational; the number, if any, configured for nuclear weapons delivery is unknown. Strategic operations against portions of the Soviet Union, all of South Korea, almost all of Vietnam, and parts of India are feasible. The limited range of the aircraft suggests that it also might be used in a theater support role within the PRC.

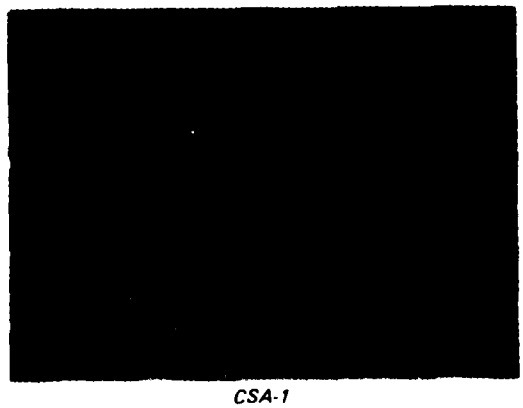
PRC STRATEGIC DEFENSE

There are no indications of PRC effort to develop an ABM system.

The PRC's air defense system remains subject to major weaknesses, including the severe shortage of all-weather interceptors, a limited number of SAM sites, and an outmoded air defense command and control system.

The PRC operational home defense interceptor force of about 4,000 aircraft includes MIG-15/17s, MIG-19s, and MIG-21s. The Chinese are developing an all-weather interceptor of indigenous design. Prototypes are being test flown.

The CSA-1, a Chinese variant of the Soviet SA-2 missile, remains the basic PRC operational SAM system. The PRC SAM system is a relatively thin, well organized defense, but far short of the



CSA-1

massive system deployed by the USSR. The PRC has also deployed thousands of antiaircraft artillery pieces to defend key military and industrial facilities and major population centers. These weapons, which range from 37 to 100 mm, are carefully located.

PRC SPACE SYSTEMS

China's space program remains in the developmental stage. However, the Chinese have orbited a small number of satellites in six years. China's space program has two primary objectives--to enhance their defense posture and to increase prestige abroad.

THE OVERALL STRATEGIC BALANCE

SUMMARY

Soviet strategic development programs and growth in their strategic capabilities indicate continued emphasis on, and preparedness for the possibility of nuclear conflict.

The United States has the advantage in its numerically superior bomber force, in more independently targetable reentry vehicles, and in deliverable warheads with superior guidance systems. The Soviets continue their advantage in numbers of ballistic missiles, in megatonnage and throw-weight, in air defense radars, in surface-to-air missiles, in air defense interceptors and in civil defense.

The sense of American technological predominance is no longer as valid as it once was. The scope and pace of the Soviet strategic programs demonstrate an increasing momentum in R&D and technology. Today the Soviets have the greater momentum in modernizing their strategic nuclear forces and are now deploying 100 to 150 first-class, fourth-generation ICBMs a year. Moreover, and more ominous, they are developing four new ICBMs, and are continuing to work on other offensive systems. They have successfully demonstrated a capability to destroy certain US satellites in space. This is particularly troublesome because it could interfere with critical wartime operations and communications, and with verification of compliance with arms control agreements.

Over the years, the US has gone from a monopoly in nuclear forces, to a predominance, to what is now described as rough equivalence.

Under a strategic arms agreement, the Soviets could be expected to maintain a stable quantity of offensive and defensive forces, and, to the extent permitted by any agreement, pursue qualitative improvements. Specifically, Soviet options could include:

- Increases in missile accuracy to improve hard target capabilities.
- Larger numbers of nuclear warheads and improvements in control and targeting to increase flexibility.
- Increased ranges and MIRVs for SLBMs to permit deployment of larger numbers of warheads out of range of major US ASW assets.
- Development of improved SAMs and interceptors with better look-down, shoot-down capabilities to threaten increasingly the penetration ability of US bombers.
- Increased hardening of forces and command and control systems together with civil defense efforts to improve survivability of key elements of government and society.

To meet these challenges, the United States must diligently pursue improvements in its own strategic forces: the MINUTEMAN; development of an alternate-based ICBM (the MX); the TRIDENT system, including development of a TRIDENT II missile; and cruise missiles. Each of these programs will contribute to the complementary mix of weapon systems in the US nuclear TRIAD.

Should the United States delay initiation of currently recommended strategic programs, the risk will increase. While negotiations on limitations of strategic nuclear forces continue, it is essential that the United States continue the currently recommended strategic programs.

CHAPTER III: THEATER APPRAISALS

EUROPE

STRATEGIC IMPORTANCE

In an East-West confrontation the defense of Western Europe assumes an importance second only to that of the United States home territory. This area demonstrates the clearest application of US national strategic policy to begin the defense of the United States as far forward as possible. Although there have been improvements in East-West relations in recent years, the challenge of the steadily increasing capabilities of the Warsaw Pact persists. The United States looks to Western Europe as its natural partner in facing this challenge, and West Europeans look to the United States to take the lead in NATO security.

Substantial US forces are located in Europe. These forces are integral to NATO and constitute the foundation of the security guarantees we have given our European allies. The purpose of US forces in Europe is to contribute to the NATO deterrent capability and to help defend this region, if necessary, against aggression by the Soviet Union and its Warsaw Pact allies.

To West Europeans, both allied and neutral, the quantity and quality of US forces in Europe are a visible commitment to common Western defense. They form the standard by which America's allies measure their own military and political commitments to security. It is essential to the defense of Western Europe that the United States continue its substantial contribution of combat-ready military forces in Europe.

OBJECTIVES AND GOALS

The overriding objective for NATO is to strengthen its military posture by increasing the quantity and quality of conventional forces needed to meet the Soviet/Warsaw Pact challenge. Specifically, NATO must close the gap between existing force levels and defense requirements established by the major NATO commanders. This gap is the product of years of deferred requirements, and represents an accumulation of shortfalls.

Conventional force improvements receiving emphasis include: improvement of command, control and communications to allow for rapid decision-making; modernization of air defenses, to include the deployment of an airborne early warning system; acceleration of maritime improvement programs; correction of deficiencies in electronic warfare; improvement of nuclear and chemical defensive equipment and training; increased firepower capability; and improved reinforcement capabilities.

It is also necessary to strengthen security assistance programs and restore cohesion in the Southern flank, and to improve the reception and support of reinforcements to the Northern flank.

In all three geographical regions, NATO has recognized and is addressing the need for improved civil-military planning, increased pre-positioned equipment and war reserve stocks, and the development of improved host nation support for reinforcing forces. Shortages in ammunition war reserves are a problem. Increases in these stocks would contribute significantly to allied force posture. The improvement of NATO's overall logistic posture will include emphasis on expanding the interoperability of present allied military equipment and, in the longer term, the development and procurement of more standardized major items of equipment for the Alliance as a whole.

CURRENT SITUATION

NATO has successfully served the security interests of the United States and its European allies for nearly three decades. Yet, the basic strategic challenge which gave rise to the Alliance still exists. Today NATO is faced with the imperative of maintaining a strong, viable security structure to counter a growing Warsaw Pact military capability--this in the face of social and economic demands which compete for limited resources.

Europe's current security environment is a product of Allied perceptions of, and response to, the opposing threat. In recent years, the Soviet Union and the Warsaw Pact countries have substantially enhanced their military posture through quan-

titative and qualitative force improvements. These trends continue; the Soviets apparently desire to continue improving their relative strength.

NATO's reaction to growing Soviet strength is based on a strategy of flexible response. Should NATO's primary objective of deterrence fail, its strategy requires that aggression be met with an appropriate response, drawn from a range of options, to preserve or restore the territorial integrity of the Alliance. To be credible that strategy requires a mix of strategic nuclear, theater nuclear, and conventional forces--the NATO TRIAD.

The strategic balance has already been discussed. NATO currently retains adequate theater nuclear weapon systems, but the new threats posed to Europe by the Soviet SS-20, Baltic-based GOLF II SSBs, and the BACKFIRE bomber, are cause to look at the adequacy of these forces for future requirements. In light of this and other concerns, the NATO Defense Planning Committee in May 1977 stressed the urgent need for NATO to improve its defensive capabilities.

NATO's conventional forces are in greatest need of improvement. Since theater nuclear systems of East and West are moving toward parity, the credibility of the NATO deterrent will depend increasingly upon the conventional capabilities of its forces. The Soviets continue to spend heavily to improve the quality of their numerically larger conventional forces. Today, they also possess a clear superiority in chemical warfare capability.

In NATO's Northern Region, the increasing capability of Soviet air and naval forces facing NATO is a matter of growing concern. While Soviet forces in this region are positioned to defend installations on the Kola Peninsula, there is little doubt that in time of conflict they would expand the defensive perimeter to secure passage of forces to the naval battle in the Atlantic. The present advantage of the Soviet Union in this region places an increasing premium on timely Allied reinforcement. Improvements in readiness and interoperability of Allied northern flank navies, agreements for collocated operating bases, planning for reinforcement, and future deployment of the F-16 will improve NATO's relative position in this region.

In the Central Region, NATO is disadvantaged by Warsaw Pact numerical superiority in tanks, armored personnel carriers, artillery, and tactical aircraft. NATO is also hindered by the tactical malpositioning of some units. A considerable time would be required for some NATO units to reach forward defense positions. NATO's capability to provide early warning of Warsaw Pact attack in this region has improved; however, warning time must be coupled with equally prompt political decisions to allow for timely and adequate defense.

For geographical and political reasons, the Southern Region poses a unique military problem. In the Eastern Mediterranean, the difficulties between Greece and Turkey over Cyprus and control of the Aegean Sea continues to divert the attention of these two strategically located allies away from the common threat.

In Italy, US and NATO interests are faced with uncertainty because of expanding communist influence in the government. It is not possible to say precisely how this influence will affect US-Italian military relations. The US military are exploring means, such as the recently established periodic talks between the US Joint Staff and the Italian General Staff, to maintain and improve the good relations which have existed between the two armed forces. Denial of Italian territory to US and NATO operations would severely restrict NATO forces in this area.

One encouraging feature in this region is the progress made by Portugal in reaffirming military ties to NATO.

With the exception of US forces, allied land and air forces in the Southern Region are less well equipped than Warsaw Pact forces, while at sea, where the US contribution in the Southern Region is greatest, NATO's traditional superiority has been offset by the presence of Soviet seapower. This is a situation which threatens the reinforcement and supply routes essential to support of the weaker Southern Region forces.

A Warsaw Pact decision to initiate war against NATO is thought to be unlikely in the near-term. If NATO's identified conventional force weaknesses can be corrected, Moscow is less likely to consider

use of armed strength, coercion or intimidation to gain its objectives. The crucial factor is whether Warsaw Pact leaders perceive NATO as having the political will and the military strength required to make the use of Pact military force too risky.

Warning and decision time remains critical in estimating NATO capabilities to respond effectly to a Warsaw Pact attack. The increasing capability of the Warsaw Pact to launch an unreinforced attack is recognized and results in considerably reduced warning time likely to be available. NATO planning is being adjusted to deal with these considerations, and is adding emphasis to readiness, reinforcement, and war reserve stocks for more prompt action.

WARSAW PACT FORCE POSTURE AND READINESS

The capability of the Warsaw Pact to conduct and sustain a major ground offensive in Central Europe continues to improve through introduction of more modern command and control, self- propelled artillery, highly mobile air defense missile systems, and deployment of a new main battle tank and armored personnel carriers. Improvements in chemical warfare continue. Logistic support capabilities for combat operations also continue to improve, with more and larger transportation units and improved maintenance capabilities. These advances add to the existing advantages of commonality of weapons, equipment and doctrine, and extensive forward storage of stocks and ammunition.

The systematic upgrading of Soviet and Warsaw Pact tactical air forces has continued. Their air defense capabilities have improved considerably. Soviet air forces in the forward area have converted from a defensive orientation to a modern conventional attack orientation to support the Pact's large mechanized forces. Newer aircraft have increased range, payload, and all-weather ground attack effectiveness. Increasing numbers of Warsaw Pact tactical fighter, reconnaissance and bomber aircraft are available for deployment against NATO's Central Region and Northern Region. Additional aircraft could be deployed against the Southern Flank. A high percentage of Soviet aircraft now deployed can be protected by shelters and many more by revetments.

Contributing to the shift from defensive to offensive air capability has been an increased surface-to-air missile (SAM) effectiveness which has freed a large portion of the fighter force for offensive missions. Although Pact air forces still rely primarily on an outdated mix of ordnance, they are beginning to deploy new tactical air-to-surface missiles.

The Warsaw Pact naval threat is posed by an improving Soviet naval force at sea backed by land-based aviation. The Soviet Navy is steadily expanding its capacity to conduct combat operations worldwide and to support peacetime political objectives, as indicated by the initial deployment of the aircraft carrier KIEV, with its vertical/short takeoff and landing aircraft. The naval threat in the North consists of the Soviet Northern and Baltic Fleets and the relatively small navies of East Germany and Poland.

The Soviet Mediterranean naval force is somewhat larger in total numbers than the US Sixth Fleet; however, a higher percentage of Soviet vessels is dedicated to support. Nevertheless, Soviet naval forces deployed in the Mediterranean are sufficient to conduct all required surveillance and targeting and could commence hostilities without augmentation. Additional ships are available from the Black Sea, and Long-Range Aviation bombers are available to attack naval targets in the Mediterranean.

US FORCE POSTURE AND READINESS

The availability of US and NATO forces is dependent upon the amount of warning time and the political resolve of the allies to act. Given the increasing capability of the Warsaw Pact to conduct an unreinforced attack, a scenario with little warning time is possible, although not probable. Such an attack would have to be countered initially by in-place forces. For the United States, this means forces normally deployed in Europe with immediate augmentation by deployed naval forces and dual-based tactical air squadrons. The only major Army combat units in the United States approaching immediate availability are two divisions and supporting elements for which pre-positioned unit equipment is on hand. Their availability is nonetheless dependent upon preparation for

overseas movement and strategic airlift capacity; their effectiveness on arrival will depend on the status of pre-positioned equipment.

Currently, US land combat forces in Europe, excluding Berlin, comprise four divisions, three brigades, and two armored cavalry regiments. Force improvements during the past year include the addition of one attack helicopter company, increased manning of air defense units, and an increase of authorized strength in each mechanized infantry battalion. At the same time the US army is increasing antitank weapon densities and tank assets.

The most significant improvement in land combat forces in the past year has been the accelerated reconstitution of pre-positioning of materiel configured to unit sets (POMCUS). Tanks taken from the inventory to meet needs in the Mid-East have now been replaced. Full restoration of all items will allow for more rapid deployment of forces from the United States. On completion of restoration, POMCUS will provide the US reinforcements with a strategic deployment capability which has been lacking since depletion in 1973.

Twenty-five tactical fighter squadrons and three tactical reconnaissance squadrons are stationed in Europe. Additionally, deployment of combat-ready tactical air units from the continental United States permits quick reinforcement of Europe. Additional fighter squadrons and reconnaissance squadrons could be available in Europe within a short time of a deployment decision.

Significant improvements to the US tactical fighter force in Europe have occurred during the past year. Four F-111F squadrons were deployed, replacing less sophisticated F-4D aircraft. Additionally, three F-15 squadrons were deployed into the Central European Region. The three F-4E squadrons which the F-15s displaced were retained in the theater. NATO's nuclear and night/adverse weather operational capability has been improved by the added F-111s while the F-15s provide NATO with the most advanced air superiority aircraft in the world.

Naval surface forces include two aircraft carrier task groups and a Marine Amphibious Unit--a battalion-size air-ground task force--in the Mediterranean. Additionally, nuclear powered attack submarines are in place. Although US Naval Forces committed to the European area total the same as last year, qualitative improvements will increase tactical capability as newer, more capable ships and aircraft are assigned to the Sixth Fleet.

The US capability to reinforce in Europe deserves special comment. Adequate warning time would permit substantial augmentation of Allied Command Europe (ACE) by CONUS-based active and reserve component forces. A number of factors, one of which is warning time itself, affect the closure time of these forces. Other factors include: early decision to augment strategic airlift and sealift; required preparation time of forces; CONUS and European port capacities; availability of host nation support; weather; enemy action; and availability of pre-positioned equipment and war reserve stocks. Strategic lift is a major limiting factor determining US force availability in Europe immediately following M-day.

CONUS-based reinforcements available within the first 120 days include a number of divisions, brigades, and regiments together with support units. Of these divisions, some are active units, which could be quickly available to commence preparation for overseas movement. Some existing reserve brigades and battalions would be assigned to active Army divisions to bring the divisions up to their full wartime structure. In addition, up to 2 Marine Amphibious Forces--division-size air-ground task forces--are available for deployment. Additional tactical fighter, tactical reconnaissance and tactical airlift squadrons are programmed for deployment within 35 days of mobilization.

The importance of tanker aircraft support for deployment of reinforcing tactical air units to Europe and the ability of air tankers to act as a force multiplier during combat operations cannot be overstated. New planning factors have shortened preparation time for overseas movement of Army units, causing some competition between Army and Air Force units for available lift during the initial phase of deployment. This problem could be alleviated by increasing airlift capabilities, including civil airlift. The United States has plans for the latter, and is encouraging other NATO nations to develop similar plans.

Although the electronic warfare capability of NATO as a whole continues to improve in the areas of aircraft self-protective pods, radar warning receivers, and the introduction of chaff pods, the current capability to operate in a hostile electro-magnetic environment needs further improvement. A cooperative equipment program among eight nations has been established to provide chaff launchers and infrared decoys for naval units. A program to provide new electronic warfare equipment for land forces has also been initiated, and additional electronic warfare units are being organized by several NATO nations.

US and NATO capability to deter and defend in a chemical warfare environment is limited. The military forces of several NATO countries have a capability equal to the United States. NATO has launched short-and long-term defense programs designed to achieve a more satisfactory state of nuclear, biological and chemical readiness.

ALLIED FORCE CONTRIBUTIONS

The European allies continue to provide the bulk of NATO's military capability in Europe. On the first day of mobilization, Europe's NATO- committed forces would consist of roughly 48 division equivalents, 1,900 combat and 300 transport aircraft, and over 550 naval combatant vessels.

While these figures by themselves are impressive, NATO Forces still need to be strengthened considerably. National commitments to increase total real defense spending by three percent, and results of the NATO initiatives program should help to achieve this.

The combat capability of non-US Forces in NATO varies greatly among the individual allies, and within regions of the Alliance. In the Northern Region of Allied Command Europe, both Norway and Denmark provide small standing forces, and rely heavily on mobilization and reinforcement. Both have joined the United States, Belgium and the Netherlands on the F-16 project, while Denmark has begun introducing new LEOPARD tanks into its arsenal.

The Central Region allies face the bulk of the Warsaw Pact military power and continue to achieve the highest quality defense programs. The forces of the Federal Republic of Germany (FRG) maintain a high state of equipment and personnel readiness. Belgium has a steady force improvement program. For example, they have activated two additional antitank battalions. The Netherlands contributes a modest force. Canada has recently announced a broad series of defense improvements. In the United Kingdom (UK), economic problems continue to prevent a significant increase in NATO commitments which have suffered appreciably as a result of several defense budget cuts. The UK has taken initiatives, however, particularly in response to the air threat. France's substantial conventional forces and her nuclear forces remain uncommitted to NATO.

The military situation in NATO's Southern Region presents special problems. For example, Turkey and Portugal require significant assistance in order to meet their acknowledged Alliance military obligations. Lack of assistance can seriously restrict these nations' contribution to the Alliance. Indeed, all the NATO nations are finding it difficult to obtain resources for defense.

The Congressional limitations set on US military assistance to Turkey are causing weakness in readiness of Turkey's committed forces--with serious potential adverse consequences for NATO. In addition, the US is suffering serious loss of important intelligence which could be gathered from bases that remain closed.

Italy recently reduced the size of its combat elements by nearly one-third, announcing an intent to increase effectiveness of the remaining force. Recently enacted laws should result in qualitative improvement.

The military contribution of Portugal to the Alliance includes granting of base rights to the United States and FRG Forces and a NATO naval headquarters; commitment of some air and naval units; and the earmarking of ground forces for commitment to NATO's Southern Region reserve. In the context of a NATO program, the United States, the FRG, and other Allies are assisting in the modernization of the Portuguese Armed Forces.

Spain is not a member of NATO, but contributes to the Alliance's regional military capabili-

ty by permitting the basing of US Forces. The transit of Spanish territory and use of its operational and support facilities by US reinforcing forces are of great importance to the United States and NATO in the Atlantic and Mediterranean. Both Spain and the Alliance are examining the possibility of Spain eventually becoming a member of NATO.

In summary, despite continuing emphasis, Allied force contributions still fall short of the force goals set by NATO's Ministers. If NATO's conventional forces fail to improve, early recourse to nuclear weapons is more likely should hostilities occur.

The longer term outlook is improving. NATO members are agreed on an ambitious effort which, if implemented, could reverse the existing trends and strengthen Alliance deterrence and defense in the 1980s. NATO is now concentrating on programs for both high priority short-term improvements in Alliance Forces and development of a Long Term NATO Defense Program to ensure coordinated national efforts throughout the coming decade. Key short-term measures are intended to enhance NATO's defensive posture in the areas of readiness and reinforcement, antitank munitions and war reserve munitions. The Long-Term NATO Defense Program consists of a series of selected high priority efforts designed to:

- Remedy serious deficiencies in NATO defenses.
- Identify national or multilateral contributions required to remedy the deficiencies over the long-term as well as mid-term.
- Establish timing for phasing these contributions.
- Exploit opportunities to achieve greater interoperability and standardization.
- Recommend means to facilitate greater Allied cooperation in these areas toward a more effective combined defense posture.

MUTUAL AND BALANCED FORCE REDUCTIONS (MBFR)

The United States and the Soviet Union and members of their respective alliances have been negotiating for four years to achieve mutual and balanced force reductions in Central Europe. In the course of the Vienna negotiations, each side advanced its basic position on MBFR, and subsequently modified its position, to some extent, to take into account and eliminate some of the differences between the basic positions of the two sides. At present, the main East-West differences continue to revolve around the issues of the size and nature of the reductions on each side and the comprehensiveness of the agreement. NATO's current MBFR position calls for a commitment by each side to reduce its manpower in the so-called guidelines area to a collective common ceiling of about 700,000 ground forces and about 900,000 combined ground and air forces. In Phase I, the United States would withdraw 29,000 men, 54 nuclear-capable aircraft, 36 PERSHING missile launchers and 1,000 nuclear warheads. The USSR, in Phase I, would withdraw an integral tank army, defined as five divisions, 68,000 men and 1,700 main battle tanks, together with its armaments and equipment. In Phase II, both sides would reduce the number of men required to achieve the common ceiling. The United States would be required to accept residual limits on manpower and the types of nuclear elements withdrawn; the USSR would be required to accept residual limits on manpower and tanks.

Reductions and limitations would be complemented by measures designed to build mutual confidence and verify compliance. These measures could also contribute significantly to increase warning time in the event of an impending Warsaw Pact attack.

NATO presently is considering another modification of its position whose revised provisions, while preserving the essential elements of the current position, should improve its negotiability and assist the West in attaining its goal of enhanced security and stability in Europe by achieving a more stable military balance at lower levels of forces with undiminished security for all participants.

SUMMARY AND OUTLOOK

Overall, NATO must modernize the forces and equipment for a more effective deterrence and for

improved defense. Some actions to increase the numbers of modern weapons systems and munitions available to NATO forces have already been taken. Other actions to improve readiness, command and control, and other deficiencies have been undertaken. Further remedial action can and must be taken by all the allies or risk will increase unacceptably, especially as related to the conventional forces. Effective deterrence depends upon visible strength sufficient to defeat aggression. Failure to improve could force NATO, in the event of war, to resort quickly to nuclear warfare or suffer the consequences of intimidation or defeat by superior conventional Warsaw Pact forces.

At this time, European perceptions about security are changing. Much of this is directly related to a more sober analysis of Soviet force improvements and an increased skepticism about the Soviet Union's intentions. While this is a healthy shift toward realism, it is counterbalanced by the dire economic straits of some of our major allies, the political instabilities of others, and the regional disputes and issues that distract still others from an appropriate response to the Warsaw Pact threat. The NATO Defense Initiatives Program should lead to concrete and positive actions to correct NATO's acknowledged weaknesses.

MIDDLE EAST

STRATEGIC IMPORTANCE

The Middle East is strategically important as the geographic area where three major continents and the national interests of the major powers converge. Middle East oil reserves are important to the United States and indispensable to its allies. The US is currently dependent on the Middle East for 20 percent of its petroleum, while 70 percent of Western Europe's oil requirements and 75 percent of Japan's are drawn from the area. Energy requirements of US allies cannot now be met from other sources. Distribution of Middle East oil is shown on Chart 15. Control of this area by any power or coalition of powers opposed to the United States would threaten Western military security, economic viability, and political freedom of action. The Soviets, recognizing the strategic importance of the area to the West, as well as

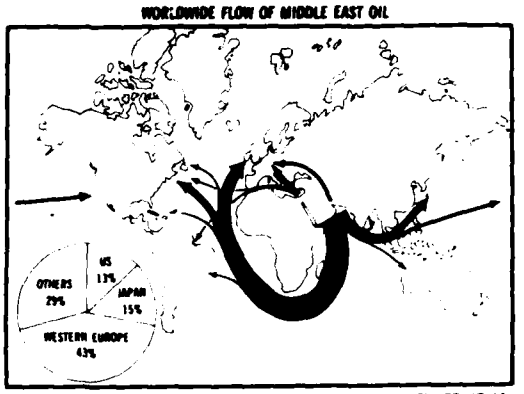


CHART NO 15

their own need to influence events, rely on political support of Arab positions as well as arms sales and military advisers as principal elements of their foreign policy toward Arab states.

OBJECTIVES AND GOALS

The United States has four principal objectives in the Middle East: to encourage a just political settlement of the Arab-Israeli conflict which includes assurance of the security and survival of Israel; to protect access to Middle East oil; to enhance US relations with the key nations of the area; and to limit Soviet influence in the region. Current programs of security assistance are designed to support these objectives while providing important friendly states in the area with the military capability to deter aggression.

Attainment of US objectives in the Middle East is supported in part by security assistance programs which are tailored to meet the specific defense requirements of the recipient countries and to maintain the military balance in the region.

CURRENT SITUATION

Despite the concessions agreed to and implemented by Egypt and Israel in the interim Sinai agreement, and the recent breakthrough in negotiations by those two countries, the Middle East continues to be an area of potential conflict. US efforts to support negotiations continue, but issues surrounding Israeli occupation of former Arab lands (Chart 16), the Palestinians, and the unstable Lebanon situation remain.

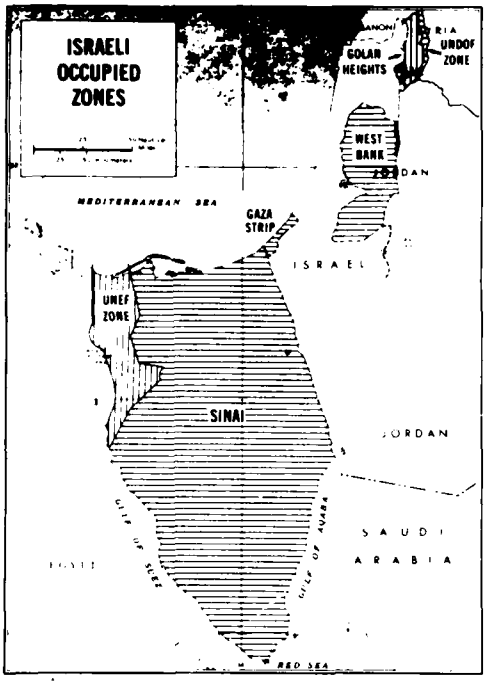


CHART NO 16

US security assistance is an important contributor to objectives in the Middle East. Israel's defense needs have generated an advanced defense industry, capable of producing a wide variety of munitions. However, Israel relies mainly on the United States to satisfy its major weapons requirements. Similarly, several Arab countries and Iran look to the West to fulfill their military requirements. Saudi Arabia and Iran have purchased most of their major military equipment from the US; their moderating influence on other regional countries and assistance in procuring arms for the non-radical Arab states, have resulted in considerable pro-Western orientation in the Middle East. In addition, their political stance has limited Soviet access to the area and, as important members of OPEC, they have assured Western access to oil at reasonable prices. Jordan has relied primarily on US equipment and assistance since its independence 25 years ago, and its moderating influence among the Arab states parallels that of Saudi Arabia and Iran. Finally, in response to changing political conditions within the region, the US has initiated a modest military sales program with Egypt in the hope of continuing a pro-West orientation and a moderate political foreign policy.

Lebanon remains at a critical crossroads. The slow progress toward political accommodation has been caused by failure of the fragile Lebanese government to attain more than tolerant support from the many Lebanese and Palestinian factions and the reluctance of the Syrian-dominated Arab Defense Force to disarm either Palestinian units or private Lebanese militias. The creation of a capable Lebanese armed force, loyal to the central government and sufficient to restore peace among Lebanese and Palestinian factions, may be the key to a Lebanese solution. The success of this effort and other political and economic initiatives will depend upon the acquiescence and support of the major parties in the region. Thus, the relationship of the Lebanese situation to a resolution of the Arab-Israeli confrontation is underscored.

A significant issue in the Persian Gulf-Arabian Peninsula region is the basic disagreement between conservative and radical elements over the rate of social and political change in the area. However, much of the area now enjoys relative stability, since the radical nationalist movements which earlier threatened the stability have made little recent headway. The most serious current threat to regional security appears to be radical gains in the Horn of Africa--which cannot be ignored by Peninsula leaders. Despite the ancient rivalries and the vested interests of the individual countries, the current trend toward stability fosters regional security.

In brief, the Middle East will continue to be a focal point of US and Western interest by virtue of the free world's heavy dependence on the region's energy resources, and the potential for a collision of superpower interests, which could affect nearly every nation on the globe.

THREATS TO PEACE

Initially, the Sinai Agreements reduced the immediate likelihood of a renewed full-scale Arab-Israeli conflict. Recent direct negotiations have the potential of providing peace. However, if they fail, there is a possibility of full-scale military hostilities. A renewal of Arab-Israeli hostilities could result in an Arab oil embargo similar to that of 1973.

Longstanding political unrest and conflict in the Middle East have allowed the USSR to spread its

influence and further its aim in this region of the world. Despite major Soviet setbacks in the region since 1973, the potential of the Soviets remains a principal concern. The USSR is the major military supplier to several Arab states, particularly Syria, Libya, Algeria, Iraq and the People's Democratic Republic of Yemen. Political support for the Arabs and provision of some arms and economic aid have allowed the USSR to further its aim of establishing military, economic and political ties with some of the more radical Arab states. The underlying objective of Soviet penetration in the Middle East is to eliminate or minimize Western influence. If the Soviets choose to increase their support to Arab forces, or to intervene directly, a confrontation between the United States and the Soviet Union would be a possibility.

US FORCE POSTURE

Sixth Fleet assets of up to two carrier task groups, and an Amphibious Task Group including an embarked Marine Amphibious Unit and supporting naval surface combatants, could be quickly deployed to the Eastern Mediterranean. The United States maintains a limited naval force dedicated to the Middle East. The US Middle East Force (MIDEASTFOR) is an afloat command previously home ported in Bahrain. A new US agreement with Bahrain, effective in July 1977, cancelled the home porting arrangement; however, it guarantees Commander Middle East Force and flagship at least 120 days per year in Bahrain. MIDEASTFOR consists of two destroyer-type ships and a command ship which operate in the Persian Gulf and the Arabian and Red Seas, and make port calls in the littoral from East Africa to the Indian sub-continent. The deployment of MIDEASTFOR supports important US interests by maintaining a naval presence in the waters of the Middle East and in the Indian Ocean. MIDEASTFOR also offsets the permanently deployed Soviet naval force in the Indian Ocean which has grown since its initial deployment in 1968.

Since the loss of communications facilities at Asmara, Ethiopia, military communications requirements in the area are being accomplished primarily through satellites.

SUMMARY AND OUTLOOK

If the Arabs and Israelis perceive progress in resolving their disputes, and if the US extends an even-handed approach to their Middle East problems, both groups can be expected to support a continuing US role in the region. The USSR can be expected to continue its attempts to weaken US influence and improve its own position. However, at present, the majority of Arab leaders are resisting Soviet efforts to establish a controlling interest in the area.

Near-term cooperative trends among Persian Gulf States which tend to check the adverse influence of Arab nationalism and Soviet presence in the Persian Gulf are expected to continue. While Iran is aware of Arab sensitivities over its growing military power, the current trend in the Persian Gulf-Arabian Peninsula region is more cooperative than competitive. Military interest in the Middle East will remain high because of the free world's dependence on the region's energy resources and the potential for major power confrontation.

AFRICA

STRATEGIC IMPORTANCE

The African continent warrants attention not only for its strategic location and sheer size, but as an increasingly important economic partner for industrialized nations. Six of the most essential commodities required by modern technological societies are found in southern Africa: chromium, cobalt, industrial diamonds, manganese, platinum group metals, and vanadium. The United States currently depends on this source for a major portion of its industrial requirements.

US military interests focus principally on the littoral states of Africa. Of particular concern to defense planning are access to airfield and port facilities and lines of communication through and around Africa.

Freedom of transit for maritime and airborne commerce in the African region is becoming increasingly important for the United States and the

West. Sea lines of communication delivering oil from the Middle East to Western Europe and the United States encircle the continent. Consequently, the United States is sensitive to the relationships which are maintained with countries on both the Atlantic and Indian Ocean littoral.

The United States is also concerned with increased Soviet and Cuban influence in some areas of Africa which could affect US and allied interests in Europe and the Middle East.

OBJECTIVES AND GOALS

US military objectives evolve from the need to protect political, economic, and strategic interests. In addition to furthering stated US human rights objectives, the United States has four principal objectives in the region: to promote regional stability; to discourage arms races in the region and prevent conflict between regional and world powers; to insure access to and through the region, and to strategic resources there; and to deny or restrict access to forces inimical to US interests. In pursuit of these objectives, US military access to facilities, port visits, and overflight rights are desired, and may be sought in certain situations.

CURRENT SITUATION

Long-standing political, economic and social problems in many African nations provide opportunities for communist nations to become involved in ways that could threaten the interests of the United States and the West. Current issues of importance to US security interests include: majority rule in Rhodesia; self-determination for Namibia; apartheid in South Africa; guerrilla warfare in the western Sahara and Angola; Eritrean separatism; the conflict between Ethiopia and Somalia; the fragile independence of Djibouti; the possibility of border incursions into Zaire from Angola; and the partition of the former Spanish Sahara.

A number of disputes in Africa have wide-reaching implications. Despite the ongoing Rhodesian peace talks, the prospects for a negotiated settlement appear uncertain. If there is no negotiated solution involving all political groups, especially the armed guerrillas based outside Rhodesia, the struggle could continue indefinitely with a risk of greater Soviet and Cuban involvement.

The South African Government, under intense international pressures, has agreed to the principle of self-determination for Namibia, but great difficulties stand in the way of a rapid, peaceful transition to independence.

There will be continuing international pressures for change in the apartheid policy of white-ruled South Africa. The government's present reaction to black frustration and violence increases the threat of an eventual insurgency led by exiled South African Blacks based in neighboring countries. South Africa continues to improve its military forces against this eventuality.

Guerrilla resistance to the People's Republic of Angola Government is continuing in the south and northwest, and in the enclave of Cabinda. Despite government operations against the National Union for the Total Independence of Angola (UNITA), UNITA continues to make gains over a wide area of southern Angola and is considered the most effective of the three insurgent groups.

In the Horn of Africa, Somali irredentist claims have led to open warfare with Ethiopia over control of the Somali-inhabited areas in the Ogaden. Ethiopia is further threatened by the insurgency in Eritrea. Only a few government strongholds remain, and the countryside is under effective rebel control. Although specific Soviet objectives in the Horn of Africa are difficult to determine, the recent Soviet and Cuban intervention in the region are of concern. US objectives in the Horn are to minimize Soviet influence and establish peace through negotiated settlement.

In Northwest Africa the principal threat to peace is the Western Sahara dispute, which involves Algerian support for the Saharan insurgents (Polisario) who oppose Moroccan and Mauritanian division of the former Spanish territory. The Polisario favors independence of the mineral-rich former colony. Morocco and Mauritania are devoting substantial resources in an effort to contain insurgent activities, but the effort may prove to be long and costly. Continued Algerian political and military support to the Polisario will make a military solution unlikely.

In those African nations where there is a significant Muslim population, Saudi Arabia is assuming greater influence by providing major economic aid for developmental and military assistance. Through such aid the Saudis have encouraged several African countries to turn toward the West for their security assistance needs. The US government should be prepared to support this Saudi policy where it coincides with our own objectives.

THREATS TO PEACE

Although the USSR and Cuba are committing increasing personnel and military and civilian resources to Africa, there is as yet no direct threat to US interests. Additionally, the PRC continues to seek increased influence in the region. Through offers of economic and military assistance and support to various liberation groups, both the USSR and the PRC seek to increase their political influence and diminish the influence of the other, as well as that of the West. Increased Soviet presence in the Horn of Africa and in Aden could become a matter of strategic concern to the United States should a Soviet influence be established on both sides of the Strait of Bab el Mandeb. The Cuban involvement in Africa can be viewed both as a contribution to the extension of Soviet influence in Africa as well as an effort to enhance Cuba's revolutionary credentials. The employment of the Cuban combat forces in Angola at least temporarily enhances Cuba's prestige in the Third World. Compared with the USSR or the West, China has somewhat limited political leverage. However, its effective economic development programs in Africa and its leadership pretensions of the Third World against the "imperialism" of the developed world have considerable appeal for many African governments.

US FORCE POSTURE

The US has traditionally maintained a low military profile in Africa. At the request of the host governments, US military personnel are assigned in Liberia, Zaire, Tunisia, Kenya, and Morocco to support small military assistance programs. In each of these countries the assistance program is designed to enhance internal and regional stability and to foster favorable bilateral relations.

Except for defense attaches in nine countries, the only other military contact between the United States and African nations is achieved by occasional port calls by US naval vessels, military aircraft transits, and by the training of African military personnel in the US. The service-to-service personal contact inherent in these programs provides long term benefits.

SUMMARY AND OUTLOOK

In summary, there is evidence of an increasing effort by communist powers to gain influence in Africa through all forms of assistance; such activities can be expected to continue. Regional conflicts and tensions, as well as growing international awareness of African problems have renewed US military interest in the region. In response to expanding Soviet influence on the continent, a number of African nations are turning more heavily to the West, including the US, as a source of military assistance to insure national security.

ASIA/PACIFIC

STRATEGIC IMPORTANCE

The Asian/Pacific region possesses economic, political and military assets of worldwide importance. Vital sea and air lines of communication traverse the area and link the United States to the Western Pacific, the Indian Ocean region, the eastern coast of Africa, the Red Sea, and the rich oil fields of the Middle East. A major disruption of these strategic lines of communication would seriously jeopardize the flow of imports essential to the economies of the US and its East Asian allies and the wartime resupply and reinforcement of these allies.

The location of the Republic of Korea, Japan, the Republic of China, the Philippines, and Thailand, make them important to the US in peacetime and militarily significant in wartime. (See Chart 17.)

OBJECTIVES AND GOALS

The United States seeks to strengthen the present relative equilibrium in Asia. As a minimum, US forces in the region must be sufficient to: pro-

STRATEGIC CHOKE POINTS–ASIA/PACIFIC

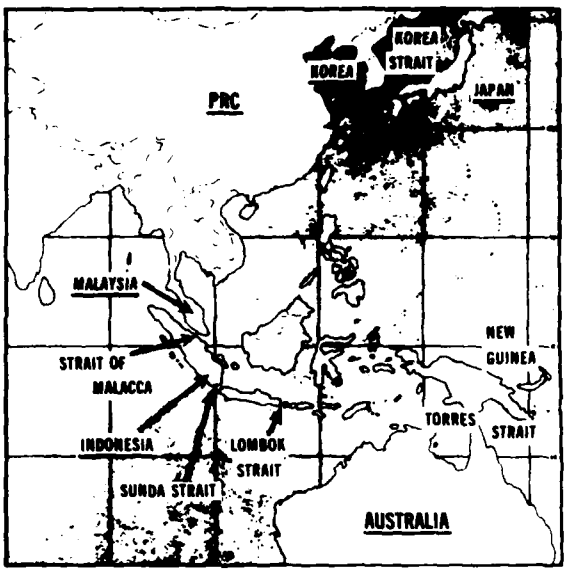


CHART NO 17

tect US interests; maintain and promote the regional equilibrium; enhance US influence; discourage regional nuclear proliferation; and accomplish initial wartime tasks against potential enemies. Cooperative economic policies, diplomacy, and appropriate security assistance for friendly states of the region, in concert with stated human rights goals, support this objective--as do defense links with Asian allies. Improved relations with the PRC are valuable because of that country's importance as a strategic counterweight to the USSR. US concern for the freedom and welfare of the countries of Asia and South Asia will continue.

CURRENT SITUATION

The major Soviet objective in the region--expansion of its influence vis-a-vis US, PRC and Japanese interests--appears to be unchanged. In pursuit of this objective, the USSR continues to modernize and gradually increase its forces in the region, and an effective Soviet naval force, designed to challenge traditional US control of the seas, is capable of temporarily accomplishing that goal in some areas. Soviet naval presence and long range air reconnaissance activity will likely continue, and when opportunities arise, the Soviet Union can be expected to increase its capability to threaten US lines of communication by attempting to obtain port access and to establish military support facilities in East Asia. Soviet military presence in the Indian Ocean will continue for at least the immediate future.

USSR/PRC CONFRONTATION

The continuing animosity and distrust between the USSR and the PRC are reflected in the significant opposing force deployments along their common border. Approximately 40 percent of the Chinese Peoples' Liberation Army is deployed there, as are 25 percent of the Soviet forces. Although there have been no major conflicts since 1969, there have been periodic reports of minor border skirmishes. The depth of Sino-Soviet animosities since the early 1960s militates against reconciliation. The Sino-Soviet confrontation has considerably eased pressures on the non-communist countries of the region and caused the PRC to value a US presence in Asia as a counterbalance to Soviet military capabilities.

The new leadership in the PRC is placing added emphasis on modernization of its forces. These are primarily designed to defend against the perceived Soviet threat, although they do pose a potential threat, if only because of their size, to China's other neighbors.

NORTHEAST ASIA SITUATION

Although Soviet air, ground and naval deployments in the Far East are probably intended for operations against the PRC, their location makes these units available for use throughout Northeast Asia if the need arises. During the past year, the Soviets have made some qualitative improvements in their Far East forces.

The decision to withdraw US ground combat forces from Korea by 1982 is the most important development in the Asian region during the past year. Planning for the gradual withdrawal is in progress. Withdrawal of the first increment--6,000 people, including one brigade of the 2d Infantry Division--is planned to be accomplished by December 1978. The phased withdrawal of US ground combat forces is made possible by Korea's significant economic progress, her improving

capability to conduct a military defense without US ground combat forces, and planned compensatory actions by the United States. These compensatory actions are necessary to offset the combat capability being withdrawn from the ROK, and to continue the correction of ROK military deficiencies in relation to quantitatively superior North Korean forces.

The withdrawal does not abrogate the US commitment to the security of Korea under the Mutual Defense Treaty, and strong US air and naval forces will remain in Korea and Northeast Asia as a deterrent to North Korean aggression. A crucial factor affecting success of the withdrawal is the security assistance package to correct certain deficiencies in the Korean Armed Forces before the withdrawal is completed. Timely approval and execution of this package will maintain a satisfactory military balance on the Korean peninsula by improving ROK self-defense capabilities. This effort will provide continued deterrence against North Korean aggression, and demonstrate the continuing US commitment to regional peace and stability.

The security relationship between the United States and Japan remains strong, and is the key element in maintaining the US military posture in Northeast Asia. The bases and facilities which Japan provides are essential to forward deployed US forces and to the ability of the United States to honor its security commitments in the area. Japan's defense policy is predicated upon United States preparedness to employ its military capabilities as a deterrent to aggression against Japan. Japan has, however, made several decisions which enhance her capability to defend herself and which are complementary to US defense posture in the Western Pacific. F-15 and P-3C aircraft, recently identified for procurement by the Government of Japan, will significantly improve Japan's air defense and antisubmarine warfare (ASW) capabilities. The decisions to procure these aircraft--accompanied by an increasing spirit of cooperation toward the common goals of peace, security and stability--are supported by an increased awareness among the Japanese public of security needs and the value of the US-Japan Mutual Security Treaty.

SOUTHEAST ASIA SITUATION

Following the end of the war in Indochina, Southeast Asia is divided generally into subregions (Burma is an exception); one includes the five ASEAN (Association of Southeast Asia Nations) states-Thailand, Malaysia, Singapore, Indonesia, and the Philippines; the other comprising the three communist states--Vietnam, Laos, and Cambodia. Relations among these two subregions, and indeed among the communist states themselves, are strained and uncertain. While Cambodia appears the most belligerent nation in the area, regional stability is largely dependent on whether the Socialist Republic of Vietnam (SRV) will pursue aggressive policies toward other states in the region.

The SRV is the most powerful country in the region, whose formidable military capabilities make it a source of concern to its neighbors. Border conflicts between Cambodia and Thailand, between Cambodia and the SRV, SRV troops in Laos, and continued support for the communist insurgency in Thailand contribute to Southeast Asian uncertainty. China remains Cambodia's principal ally, while Hanoi's relations have been more cordial with Moscow than Peking--reflecting Moscow's longstanding aid and greater distance.

Although vulnerable to the normal weaknesses and insecurities of developing societies, the ASEAN states are steadily increasing regional political and economic cohesion. Unfortunately, problems of internal security still exist. The insurgencies in Thailand persist, as they do in Malaysia. The Philippines' Muslim insurgency and the separatist movement in Indonesian Timor continue to be problems for those governments' security forces. The chances of widespread major conflict, however, appear to be remote.

SOUTHWEST PACIFIC SITUATION

The Southwest Pacific region will continue to occupy US attention for a number of reasons: strategic geographic significance; political ties, particularly with Australia and New Zealand; economic instability of the emerging island nations; upcoming negotiations regarding the future

of Micronesia; and Soviet aid initiatives in the region, particularly in Western Samoa, Tonga, and Fiji.

Historically, the major Pacific island entities have been controlled by, or have been under the influence of, nations closely aligned with the United States. Nationalistic moves to independence in recent years by these economically poor island nations have, however, provided an opportunity for access by potential US adversaries. The establishment of Chinese embassies in Fiji and Western Samoa, and possible Soviet willingness to provide aid to Tonga in return for trawler bunkering facilities raise security questions.

The nations in the Southwest Pacific are aware of the danger posed by communist penetration, and the United States clearly recognizes the need for closer ties with the Pacific island nations. Overall, the political and military situation can be expected to remain favorable to the Western nations.

Australia and New Zealand continue to contribute to stability in the Southwestern Pacific region. Similarities in social and political systems breed mutual confidence and cooperation between them and the United States. Both countries cooperate with the United States in defense activities. All four US military services have exchange programs with their counterpart Australian/New Zealand services. Other military activities include annual combined exercises with US forces, and periodic visits by US fleet units, including nuclear powered warships, to Australian and New Zealand ports.

New Zealand and Australia play constructive roles as regional powers in Southeast Asia and the South Pacific and provide developmental assistance to countries of the region. Both maintain membership in the Five Power Defense Arrangement (with Malaysia, Singapore, and the United Kingdom). They also actively support the ANZUS Treaty Alliance, the tripartite defense agreement between Australia, New Zealand and the United States.

SOUTH ASIA/INDIAN OCEAN SITUATION

A variety of developments within the last decade--including increased Western dependence on Persian Gulf oil, the growth of Soviet regional influence and military presence, continued instability and conflict in Africa, and growing pressure from the littoral states for some form of limitation on US and Soviet forces in the region--have shaped the US perception of its interests in the Indian Ocean.

In addition to maintaining access to the energy resources of the Persian Gulf area, the US has a general interest in preserving the principle of free movement of military and commercial ships and aircraft, on, under, and over these international waters.

Current US military strategy relies on a modest permanent naval presence, access rights, and periodic deployments of forces into the region to provide a low but discernible profile while retaining the capability to conduct a wide range of military operations.

Soviet military strategy in support of their interests is similar, but not identical. The Soviets maintain a continuous naval presence in the Indian Ocean. They also rely on forces outside the area for reinforcement in the event of crisis.

Helping to counterbalance the Soviet presence in the Indian Ocean are the naval forces of several other Western powers. France maintains the largest presence of any external power, in order to protect her interests in the region. The British still deploy a small naval force to the Indian Ocean on a yearly basis to participate in CENTO exercises. Australia also deploys a small naval force into the Indian Ocean annually.

The following trends and developments will have an impact on future US Indian Ocean strategy. Western dependence on Persian Gulf oil will probably increase; there are also indications that by the mid-1980s the USSR may also have to compete for this oil. Certain regional states, notably India and Iran, seem likely to increase their overall power and influence significantly over the next ten years. India and Iran could conceivably develop a nuclear weapons capability during the period. Instability and the potential for conflict will remain high in East and Southern Africa, and somewhat less in the Persian Gulf and on the subcontinent.

Local political constraints on the presence of

super power military forces in the littoral countries seem likely to increase. Aside from continued pressures for an Indian Ocean Zone of Peace from a number of littoral states, extra-regional political forces will also make the tenure of peripheral basing facilities uncertain.

US FORCE POSTURE

The umbrella of US protection is best provided by the maintenance of key bases in the region and forward deployed US forces. Charts 18, 19, and 20 depict these deployed forces. US bases in the Philippines are extremely important in this respect.

Although US forces allocated to the Western Pacific have declined steadily in recent years, and are at the lowest level since 1950, the United States intends to remain a major Pacific power and to maintain its commitment in the region. The US military presence in the region remains a stabilizing factor in the regional balance. Although Soviet military power in the Pacific has increased, the US force in the region is sufficiently large, modern, ready, and well-positioned to meet US national commitments and protect its vital interests.

The readiness posture of US forces in the Pacific has been upgraded slightly during the past year. New equipment has been introduced, communications systems have been improved and effective training has been accomplished. Pacific naval forces include six aircraft carriers, 32 submarines and 80 principal surface combatants, although far fewer are deployed at any given time. Air Force units continue to maintain a high degree

DEPLOYMENT OF MAJOR US GROUND UNITS
(ASIA/PACIFIC)

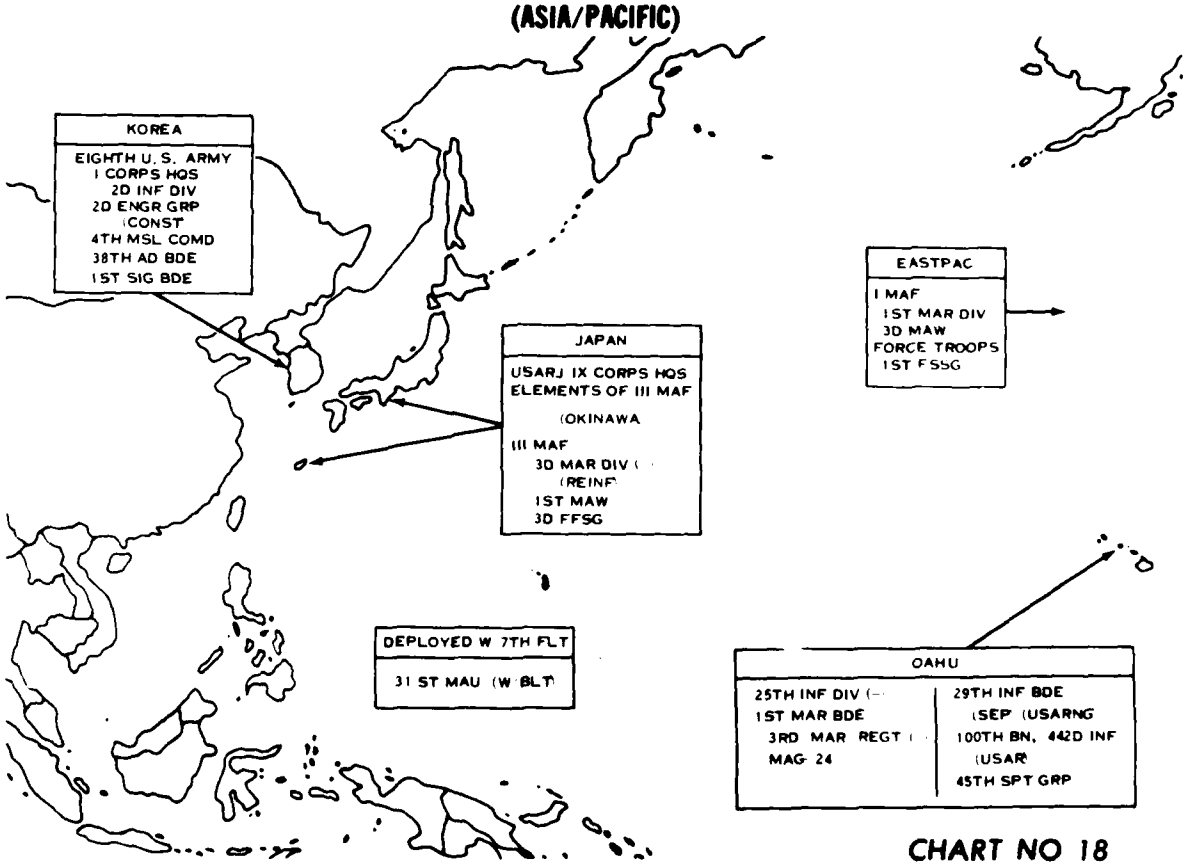


CHART NO 18

DEPLOYMENT OF US NAVAL AIR & SHIPS UNITS

(ASIA/PACIFIC)

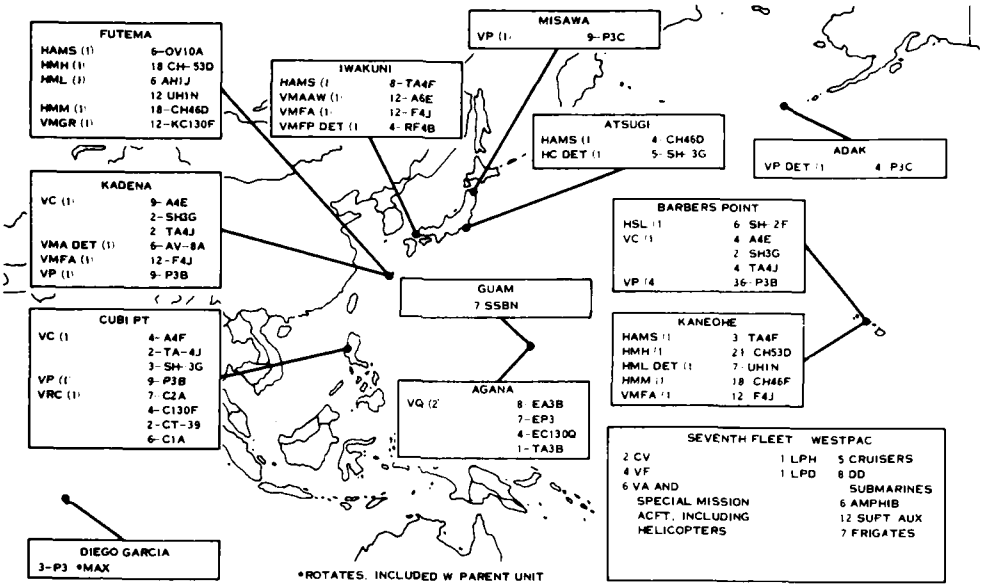


CHART NO 19

DEPLOYMENT OF MAJOR US AIR FORCE UNITS

(ASIA/PACIFIC)

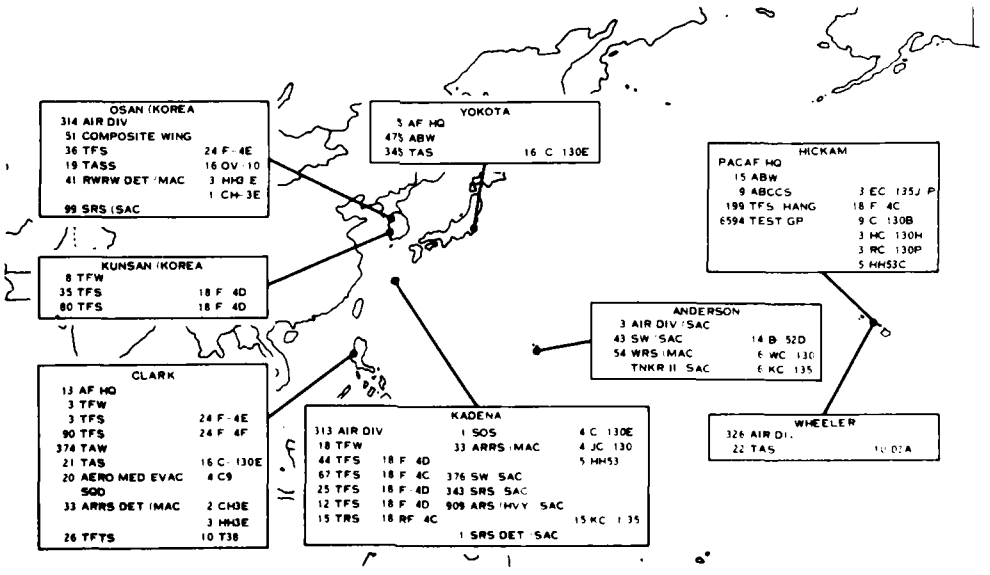


CHART NO 20

of readiness and are capable of responding quickly and effectively to contingency situations. A modest increase of aircraft in the Air Force posture is programmed and the introduction of new aircraft into the Pacific air inventory will help keep pace with the growing threat and mission requirements of the region. Although the pending withdrawal of US ground combat forces from Korea will reduce the Army's combat power ratio in the Pacific, the addition of new missiles (i.e., TOW, IMPROVED HAWK) has upgraded individual Army unit readiness.

SUMMARY AND OUTLOOK

The Pacific-Asian area remains a major focus of US attention. The withdrawal of ground combat forces from Korea has generated some concern. Since no further force reductions are planned, the US will retain a major capability for combat operations throughout East Asia.

While withdrawal of US ground combat forces from Korea does entail an element of risk, that risk is acceptable as long as the withdrawal is carefully coordinated with improvement of ROK military capabilities. Congressional approval of the Administration's proposed compensatory measures for the ROK is essential for maintaining the necessary growth in ROK capabilities, a stable balance on the peninsula, and peace in the area.

There are a number of plus factors in eastern Asia: the military balance is being maintained; the PRC continues its anti-Soviet attitude and military orientation while showing little inclination towards aggressive action against its other neighbors; US forces are a deterrent to any North Korean aggression against the South; Japanese-American relations remain close and cooperative; and cooperation between ASEAN members is improving. The close alliance of the United States with Japan remains the key to regional equilibrium in Northeast Asia. It is clear that US economic, political, and security interests will remain tied to events in the region. The United States must therefore continue to maintain a significant military presence throughout the region as a tangible measure of US interest in the security and stability of these areas.

THE ATLANTIC

STRATEGIC IMPORTANCE

The Atlantic Ocean area is of vital importance to the United States as an avenue of world trade and as a critical line of communication with Europe, the Middle East and Africa.

A major disruption of the lines of communication (LOC) would jeopardize the flow of materials essential to the US and Western Europe. Disruption would severely restrict resupply and reinforcement of Western Europe in wartime.

Iceland, the Azores, Bermuda, the Bahamas and Ascension are strategically located islands which provide military bases essential to the protection of important sea lines of communication. Military bases on these islands are used for ship and aircraft staging, enroute support, search and rescue, antisubmarine warfare (ASW), maritime surveillance and navigation facilities. Iceland's geographic position is important to the security of Atlantic LOCs (Chart 21). Similarly, the airbase at Lajes in the Azores is significant, particularly if rapid resupply of Europe or the Middle East becomes necessary. Protection of oil shipping in the South Atlantic could depend heavily on access to the airbase at Ascension Island.

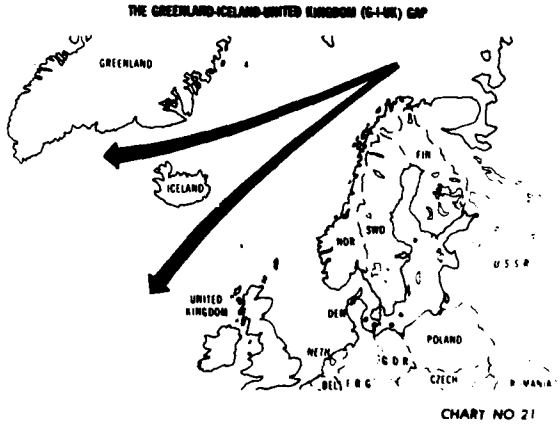


CHART NO 21

OBJECTIVES AND GOALS

Maintaining the integrity of critical air and sea lines of communication to Europe remains a primary objective to a conventional conflict.

The following are the most important actions contributing to control of the Atlantic:

- Destroy enemy forces in the Atlantic area.
- Interdict Soviet air and sea routes from their Northern Fleet bases into the Atlantic sea lanes.
- Reinforce strategic islands such as Iceland and the Azores.
- Provide close support of those critical ships which must sail early.

THREATS TO PEACE

The threat in the Atlantic involves essentially four Soviet capabilities. The first is the ballistic missile submarine force targeted on the continental United States. The second is the Soviet ASW threat to NATO ballistic missile submarines. The third is the challenge to control of the sea lines of communication, to include the strategically located islands. And finally, there is the existence of the naval infantry.

The Soviets continue to improve their ballistic missile submarine posture in the Atlantic area. They are also increasing their ASW effort in the Norwegian Sea. Long range ASW aircraft periodically operate south of the Greenland-Iceland-United Kingdom (G-I-UK) gap. These aircraft operate in concert with Soviet forces in the Norwegian Sea during exercise periods. The KIEV class carrier, now assigned to the Soviet Northern Fleet, provides substantial ASW capability and command and control support for operations in the Norwegian Sea.

The BACKFIRE bomber represents an increase in Soviet antishipping capabilities in the North Atlantic. This aircraft is a substantial improvement over the TU-16 BADGER, and its greater range allows it to engage more distant targets than the BADGER. The Soviets are also improving their reconnaissance capability. Radar ocean reconnaissance satellites provide coverage of transit lanes. Soviet maritime reconnaissance aircraft now flying from Cuba and Angola are capable of covering the North and South Atlantic from the Mediterranean approaches westward to the US east coast from southward to the Cape of Good Hope.

Soviet Northern and Baltic Fleet amphibious units have the capability of landing at least two regiments of naval infantry in support of operations in either Northern Norway or the Western Baltic.

The Soviet naval presence along the African littoral continues to grow. The deployment of a sizable Soviet naval force in West African waters could threaten the sea lanes to the Indian Ocean and the southern flank of the sea lanes to Europe.

The Soviets perceive the US POSEIDON/POLARIS missile submarine force to be the primary seaborne threat to their homeland. Countering that threat is a major mission of the Soviet Navy. In the near term, the technological superiority of US nuclear submarines should frustrate Soviet detection efforts. However, in the long term, if Soviet proficiency at ASW continues to improve and their research program bears fruit, the threat to the US ballistic missile submarine force may increase.

US FORCE POSTURE

The following are the most significant changes to the Atlantic Command force posture since last year and some that are expected in the very near future.

The POSEIDON conversion of assigned POLARIS ballistic missile submarines was completed in December 1977.

The first three nuclear attack submarines of the SSN 688 class have joined the fleet and a fourth was scheduled to join in December 1977.

The HARPOON missile is being introduced into the fleet.

The pre-positioning of ship propulsion and aviation fuel in Scotland and Norway is proceeding very well.

The nuclear powered aircraft carrier EISENHOWER and the nuclear powered guided missile cruiser TEXAS have joined the Atlantic Fleet. The amphibious assault ship SAIPAN was commissioned in October 1977.

USAF F-15 tactical fighter aircraft have joined the Air Force Forces Atlantic (AFLANT).

In view of the increasing Soviet tactical and long-range maritime air threat, the importance of AFLANT's participation in Atlantic strategy increases. Enemy penetration of the G-I-UK gap must be curtailed at the outset of conflict. Hence an immediately responsive AFLANT augmentation force is required.

Iceland provides a forward base for early warning and surveillance and for interdiction of hostile forces. However, there is a need for improved early warning and defense capability against the current Soviet air threat. Improvements are also needed in the existing support capability in Iceland, especially in aircraft refueling systems, liquid oxygen processes, and missile storage and maintenance. Command and control facilities, and communications capability also require improvement.

The Atlantic Command has shortages of amphibious shipping, surface and airborne ASW platforms, ASW submarines, convoy escorts and mine countermeasures forces. However, these deficiencies may be offset to some degree by use of civilian merchant ships and by contributions of NATO allies.

ALLIED FORCE CONTRIBUTIONS

Current US and allied commitments to the maritime defense effort in the Atlantic still fall short of the forces necessary to conduct simultaneously all the operations required for a sustained conventional war at sea. Despite the commitment made by NATO ministers to upgrade forces, a quantitative downward trend continues. In addition many units presently assigned will approach the end of their useful military life in the next decade, and will need to be replaced. Much effort by the allies is being put into improving the quality of assigned units, but while older forces are being replaced, the cost of new hardware brings its own problems. For example, Canadian maritime air patrol forces are being upgraded with the introduction of the CP-140 AURORA.

The recent reduction in the United Kingdom/Netherlands amphibious force lift capability has created a significant shortfall in the support of the Atlantic Islands. This reduction, coupled with a growing Soviet naval capability in the Atlantic, requires increased force contributions in the North Atlantic from the other allies and a realignment of US force assignments.

Strategic mobility force requirements are not reasonably attainable using US forces alone, and specialized US merchant shipping and escort assets do not meet requirements. Airlift and sealift will be insufficient for required strategic deployment without the use of NATO military and commercial assets. There is also a heavy reliance upon reserve forces, which presumes early declaration of mobilization by US and NATO national authorities.

Furthermore, the level of NATO participation in reinforcement and resupply is scenario-dependent; certain countries may not make their ships available until later in the conflict.

NATO nations, all of which make an important contribution to the security of the United States, recognize the need to improve the total NATO force structure. In its own interest, the United States should continue to encourage NATO allies to allocate sufficient resources to maintain and improve their maritime forces.

SUMMARY AND OUTLOOK

While the balance between Soviet and NATO forces in the Atlantic area is being eroded by the introduction of more and newer Soviet units and a much slower Alliance response, the Atlantic Command remains confident of its capability to win a general war in the Atlantic area. Antisubmarine warfare will be a most crucial operation, and in this area the Soviets have a marked superiority in

numbers of submarines. However, US forces excel in integrated air, surface and sub-surface ASW. The United States must continue to remain superior in ASW systems and support successfully a NATO war.

LATIN AMERICA

STRATEGIC IMPORTANCE

Latin America plays a significant role in US global strategy. Control of Central America or the Caribbean by a hostile power would permit a wide range of military actions, including close range strategic attack. The Panama Canal is a major defense asset to the United States that facilitates the movement of forces and logistics materiel in support of our security commitments. Denial of its use would delay deployment of forces and materiel and increase the importance of the sea lines of communication around South America. The strategic location in the Caribbean of the US Naval Base at Guantanamo Bay affords protection of sea lines of communication and serves as a support base for sea surveillance and regional contingency operations. A friendly, stable Mexico is also important to maintenance of US security.

Latin America's raw materials supplying over 50 percent of total US imports of six strategic materials amplify the strategic importance of the area. Brazil, Mexico, Venezuela, Peru, and Jamaica are among the most important suppliers. The United States imports about nine percent of its total crude oil imports and 50 percent of refined oil imports from Latin America.

Potential economic and military strength add to the area's strategic importance. Brazil and Argentina possess the technology and economic capacity to become nuclear powers, eventually, and have the military potential to contribute to the defense of the hemisphere. Panama could provide forces capable of assisting the United States in defense of the canal.

Latin America is of strategic interest to the USSR because of the potential for Soviet forces to establish bases in proximity to the United States. Of secondary importance to the USSR is trade, such as wheat from Argentina.

China has trade interests as well as a modest aid program aimed at winning support of Latin American countries and countering Soviet influence there. China has offered credits to Chile and aid to Guyana and Jamaica.

OBJECTIVES AND GOALS

The primary objective of the United States is to maintain a stable Latin America friendly to the United States and free of outside influence, and at the same time to provide the Latin American countries with the sense of security required to facilitate their economic, social and political development. US military objectives are: to preclude establishment of military power bases hostile to US interests; to maintain access to regional resources; to ensure security and unrestricted operation of the Panama Canal; to avoid intra-regional hostilities; and to avoid active involvement of US forces in internal security.

To meet these military objectives, the United States places primary reliance on indigenous forces to counter internal threats; maintains on-site forces which, together with forces deployable from the United States, can ensure the security and operation of the Panama Canal and Zone; supports regional alliances and treaty organizations; conducts combined exercises and training; and achieves and maintains active participation of other countries in the defense of the Western Hemisphere.

CURRENT SITUATION

The present ability of Latin American forces to defend against a modern outside force, or to participate in the defense of the hemisphere, is minimal. However, the Latin American navies have had 18 years' experience in the annual combined maritime exercise with the US Navy (UNITAS), and although obsolescent, some units are capable of being integrated with US task forces. Latin American armed forces' most significant deficiencies are inadequate logistical support which affects combat staying power.

The Latin American desire for modern sophisticated aircraft and missile firing ships ap-

pears impractical to the United States, and has been frustrated by US foreign aid refusals. Refusal to be responsive to these perceived needs has resulted in a diminution of US influence, not a reduction in arms expenditures, since US refusals result in purchases elsewhere. In the past, this vacuum has been filled by West European and Israeli vendors, but more recently, the Soviets have taken advantage of arms sales opportunities.

In the event of aggression within Latin America, the United States is bound by two treaties: the Charter of the Organization of American States (OAS) and the Inter-American Treaty of Reciprocal Assistance, known as the Rio Treaty.

The OAS Charter established the "institution" of the Inter-American System and reaffirms a doctrine of collective security.

The Rio Treaty binds contracting parties to seek settlement of controversy within the Inter-American System through the OAS before referring the problem to the UN. An attack on any American state is considered an attack on all.

Brazil has terminated five bilateral agreements of a military nature with the United States, the oldest of which dates back to 1942. In addition, five other countries--Argentina, Chile, El Salvador, Guatemala, and Uruguay--have been denied or have rejected various kinds of US security assistance, either temporarily or indefinitely, in connection with human rights issues.

THREATS TO PEACE

The overwhelming majority of Latin American countries are concerned with the threat of subversion. Some countries perceive it in terms of international Marxist/Communist aggression supported by Cuba and the USSR. Others see it as acts of violence against the constitutional government, but not in ideological terms. The preoccupation with the threat of Marxist subversion has caused some Latin American nations to take repressive measures within their own countries and to push for international cooperation to suppress the threat. Other countries concerned with democratic ideals have expressed the belief that freedom of opinion is a right and that only acts of violence against a constitutional government are to be persecuted, repressed, or eliminated.

Thus, while the Latin American nations basically agree that there is a threat of subversion, and that it has a generally Marxist/Leninist orientation, they disagree on appropriate response. At times this disagreement leads to confrontation, which in turn threatens cooperation on other issues.

The principal threat to US interests in Latin America is the social, political, and economic instability of the area. This instability could interfere with US access to strategic materials and permit the establishment of power bases hostile to the United States. The Soviets see the sale of arms, as well as economic incursions, as an effective means of entry. While unsuccessful to date in the sale of missile firing gunboats to Colombia, the Soviets have sold sophisticated aircraft, air defense systems and ground weapons to Peru. With these sales come the attendant Soviet technicians and an opportunity for increased influence.

With the exception of occasional Soviet naval ship and BEAR aircraft deployments to Cuba, there are no Soviet or PRC combat forces operating in the Latin American area. Soviet technicians and military advisers in Cuba assist in the maintenance and operational training of missile firing gunboats, surface-to-air missile sites and jet fighter aircraft. There are also Soviet advisers in Peru conducting operations and maintenance training.

While it is expensive, at approximately $1.0 billion a year, the Soviets take full advantage of their Cuban dependent in the Caribbean. Cuba's techniques in this hemisphere to date have been essentially non-military and generally subtle, to avoid overt military action near the United States which could precipitate a strong US response. Cuba gains entry to Caribbean nations with infrastructure programs, such as economic development projects, medical and educational programs, and cultural exchanges. At the same time, the recipient country's security forces are trained in Cuba. On the other hand, Cuba covertly supports revolution, disruption and terrorism throughout Latin America, through limited training and propaganda assistance.

The Panama Canal Zone is susceptible to disruptions or civil disturbances instigated by

Panamanian radical nationalist groups. Though small in number, these groups have the capability to magnify emotional demonstrations, to threaten the safety of US personnel and property and to disrupt canal operations.

US FORCE POSTURE

In most Latin American and some Caribbean countries, US Military Assistance Advisory Groups (MAAGs), Military Groups (MILGPs), Offices of Defense Cooperation (ODCs) and attaches project US military presence and influence through security assistance programs, advisory roles, and representation duties. This influence will be decreased by the MAAG/MILGP personnel reductions required by the International Security Assistance Act of 1977. US Forces and bases in this region are located at Guantanamo Naval Base, Cuba; Puerto Rico; and Panama. Small Air Force and Navy facilities are located in the Bahamas and Eastern Caribbean islands chain to monitor US missile launches and for ASW weapon systems alignment and calibration.

Forces in the Canal Zone and Guantanamo are maintained in a high state of readiness. Significant disturbances in Panama would require reinforcement by US-based forces. Military activity against Guantanamo would require a US military response from continental United States forces.

ALLIED FORCE CONTRIBUTIONS

The contributions and capabilities of the Latin American military are primarily those of maintaining internal security and self defense. Contributions to hemisphere security do not appear likely until potential threats become more tangible or urgent. Brazil and Argentina have the greatest potential for contributing to the mutual defense of the hemisphere. Panama will contribute to defense of the canal if the new Panama Canal treaties are ratified.

The Inter-American Defense Board (IADB) has military representatives from most Latin American nations and the US Joint Chiefs of Staff. It provides valuable channels of communication and a forum for enhancing professional understanding, cooperation and rapport between US and Latin American nations. Moreover, conferences of the Chiefs of Staff of the military services in the Western Hemisphere provide a forum for increased solidarity and hemispheric cooperation by stressing cohesion and strength.

Combined exercises serve to enhance collective security. Examples of these exercises are AGUILA, the annual joint Central American exercise sponsored by the Central America Defense Council (CONDECA); UNITAS, which involves participation by the US and some South American navies; and HALCON VISTA, the surveillance exercise. One British frigate on call from the North Atlantic and a reinforced battalion in Belize comprise the British military presence in the area. A Netherlands military force of one destroyer, three ASW aircraft and a small marine detachment remains in the Caribbean Netherland Antilles. The French make infrequent, minimal naval visits to Guadeloupe, Martinique and French Guiana.

SUMMARY AND OUTLOOK

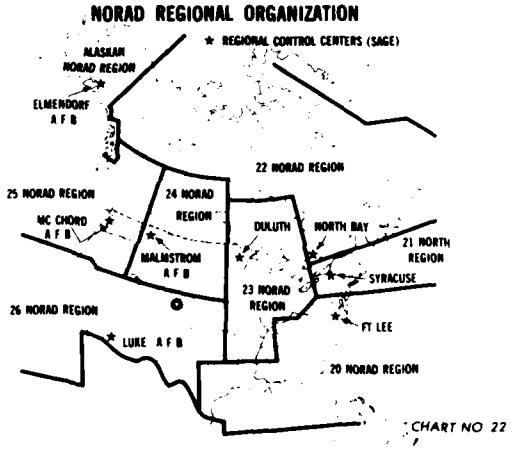
Soviet and Cuban (and to some extent PRC) influence, detrimental to US security interests, continues in Latin America and the Caribbean. Penetration by technical assistance, economic education and cultural cooperation are more subtle methods which promote Soviet and Cuban goals without provoking the United States. Soviet arms sales, such as the recent arms and fighter-bomber sale to Peru, are more obvious.

Rapport between representatives of the US Armed Forces and the Latin American military, though declining, continues. The unique leadership role of the Latin American military makes it important that these traditional military-to-military relationships be furthered. These relationships reinforce understanding and acceptance of the need for basic human rights policies. By being responsive to legitimate force modernization needs, the United States creates a more favorable climate for attaining its political, economic and security goals in this hemisphere. Arms restrictions, sanctions against security assistance to certain countries, cutbacks in international military training money and reductions of military groups have been interpreted as a reduction of US interest in this region.

NORTH AMERICA

STRATEGIC IMPORTANCE

For the United States, security of its people and territory is a matter of first priority. Canada regards her sovereignty and national survival in terms similar to those of the United States. The two nations remain naturally and ideologically allied. For the past several decades, this alliance has been underscored by structuring defensive forces for the protection of North America as a single entity, without regard for national borders. Canada is the United States' only partner in the North American Air Defense Command (NORAD) (Chart 22). Close cooperation in land and maritime defense planning further characterize the importance of Canada in defense of this region.



OBJECTIVES AND GOALS

Increased rationalization, standardization and interoperability among US and Canadian forces in terms of doctrine, materiel, and procedures remains an important objective. During the year a number of improved capabilities for operating effectively and efficiently together in Canada-US defense and NATO endeavors were explored. Unit personnel exchange programs support these objectives. The efforts of the Aerospace Defense Command and NORAD have centered on the surveillance and control of North American airspace and warning of bomber, missile or space attack.

The capability to defend against missile and space attacks remains nonexistent, while defenses against bomber attack are limited to the capabilities of a greatly diminished interceptor force. In the past the United States general purpose forces have trained and exercised with NORAD forces in the continental air defense mission. However, a dedicated force of modern interceptors is still required. The introduction of E-3A aircraft into service this year marks the beginning of modernized forces for air defense. The gradual conversion to the Joint Surveillance System/Regional Operations Control Centers is progressing, although much remains to be done in this mission area. In addition to modernization efforts for air defense, the United States is embarking on improvements in its strategic warning and attack assessment systems, improvements made necessary by increasing Soviet sea and land-based strategic missile capabilities.

Alaska's exposed location requires special consideration during crisis contingencies. Defense plans for Alaska provide for timely augmentation of military force levels as necessary. Vast training areas and varied training opportunities are available in Alaska. A program to utilize this training resource by rotating Army and Air Force units there has been undertaken.

CURRENT SITUATION

During the past year Canada has moved in concert with US objectives by taking positive steps to select, and ultimately secure, a New Fighter Aircraft (NFA). The NFA is to be employed in an interceptor role as a replacement for obsolete CF-101s under NORAD for the air defense of North America, and as a replacement for aging F-104 tactical fighters in NATO Europe. In addition, Canada is cooperating on a joint effort to deploy Regional Operations Control Centers to update the command and control of air defense surveillance and weapon systems.

US and Canadian interceptor aircraft provide NORAD a limited capability to counter probes into North American airspace and to defend against a bomber attack on this continent. Canadian maritime forces provide airborne and seaborne

antisubmarine warfare patrols along her Atlantic and Pacific coastlines. Canadian capabilities will be enhanced by the NFA Program and by the decision to purchase 18 CP-140 versions of the US Navy P-3 as a replacement for old ARGUS patrol aircraft. Both developments indicate continued Canadian resolve to insure an active, although limited, strategic defense of North America.

THREATS TO PEACE

The predominant threat to North America consists of Soviet ICBMs, SLBMs, and long-range bombers. Some 2,000 nuclear delivery vehicles can reach targets in Alaska, Canada, and the United States. Soviet general purpose forces could be employed in time of war against Alaska and parts of Canada lying reasonably close to Soviet staging areas.

A potential threat to North America could be posed by Soviet use of Cuba as a staging base for long- and intermediate-range nuclear capable bomber forces, or as a recovery base for Soviet bombers flying one-way missions from the Soviet Union. The island also represents a potential Western Hemisphere launch point for short-range ballistic missiles (although none are now based there) and as a convenient resupply point for Soviet submarines.

US FORCE POSTURE AND ALLIED FORCE CONTRIBUTIONS

In May 1975, an extensive Canadian review of continental defense concluded with a decision to extend the NORAD Agreement for an additional five years. This decision recognized NORAD as an effective means of dealing with Canadian-US security problems and as a direct contribution to the security of the larger NATO alliance. Canadian forces are postured as a general purpose force to deny the advantage of surprise in armed attack on North America, to contribute to the protection of the land-based US retaliatory capability, and to provide response to other military threats to North America.

SUMMARY AND OUTLOOK

The cooperative basis for North American bilateral defense remains strong. The nature of the threat to North America is changing as Soviet offensive capabilities continue to grow. Moreover, the availability of potential staging areas within this hemisphere cannot be overlooked. Because of changing technology, and the age of existing strategic defense systems, the need to modernize the air defense infrastructure for North America continues to grow. Modernization is best achieved, both militarily and economically, in concert with Canada. We will continue to work closely with Canada to achieve our mutual goals in this strategic area.

CHAPTER IV: GENERAL PURPOSE FORCES BALANCE APPRAISAL

OVERVIEW

This year, as in the past few years, the Soviet Union has steadily improved its general purpose forces.

The Soviets, with their Warsaw Pact Allies, maintain a quantitative advantage over NATO in combat divisions, tanks, armored fighting vehicles, artillery, and combat aircraft, and they are modernizing these forces to close the qualitative gap which, in the past, has favored NATO. Elsewhere, Soviet forces pose a credible challenge to United States military forces and interests. Increases in their current preponderance of force will further reduce the Soviet risk in any undertaking. Such increases, together with Soviet force modernization efforts, no longer permit the United States and its allies to be comfortable with a significantly smaller force structure than theirs.

Land, sea and air forces can be assessed separately. However, major US combatant forces are organized with units of various Services, employed jointly, and commanded by a single commander.

The lessons of REFORGER strategic mobility exercises, CRESTED CAP tactical air deployment exercises, and day-to-day field operations with NATO allies are providing the basis for combined operations doctrine. Security assistance efforts, forward deployment of forces, combined command and control centers, progress in standardization, rationalization, and interoperability, and programs of overseas visits and exercises have enhanced the capability for combined operations.

GROUND FORCES

SOVIET AND WARSAW PACT GROUND FORCES

The ground forces of the USSR are organized into more than 170 divisions, 27 of them in Europe opposite the NATO Central Region. In addition, there are 55 non-Soviet Warsaw Pact divisions.

Over the past 10 years, the USSR has engaged in a sustained effort to build up the combat capabilities of its ground forces. The ground establishment has been transformed from a nuclear-oriented force, austere in conventional artillery and logistics, to one capable of operating in a nuclear or nonnuclear environment.

The number of main battle tanks in a motorized rifle division in 1965 totalled 190. Expansion of tank battalions and incorporation of an independent tank battalion in some divisions raised the total considerably by 1975. Today, three-fourths of the older T-54 and T-55 medium tanks opposite the NATO Central Region have been replaced by the more modern T-62 and T-64 models.

Conventional artillery howitzers and multiple rocket launchers organic to the motorized rifle division substantially increased between 1965 and 1977, while tank division artillery weapons also increased dramatically. In 1965, some 30-35 towed and self-propelled antiaircraft artillery pieces constituted the total air defense assets of both type divisions. Each now has almost twice that number of air defense weapons, including self-propelled antiaircraft artillery and vehicle-mounted surface-to-air missiles. Additionally, a large number of portable surface-to-air missiles are organic to both divisions.

As weapon systems increased, personnel strength rose proportionately. New weapon systems continue to appear with ground units. Recent new systems include the T-64 and T-72 tanks; an innovative infantry combat vehicle, the BMP; new 122 mm and 152 mm self-propelled howitzers, a new heavy-caliber multiple rocket launcher, and several divisional surface-to-air missiles. Soviet tactical nuclear capabilities also continue to grow.

Non-Soviet Warsaw Pact forces are essential elements of the Warsaw Pact capability for attack of the NATO Central Region. Since 1965, East European forces opposite the NATO Central Region have remained constant numerically but were qualitatively enhanced. The Pact could launch a coordinated attack against the NATO Central Region after a short period of preparation and without prior reinforcement.

PRC GROUND FORCES

In response to increased tensions following the 1969 border clashes with the Soviet Union, the PRC initiated a major shift in force deployment. The composition and disposition of Chinese forces in the north underline the PRC's apprehension

regarding Soviet intentions in the area. The PRC maintains the bulk of its armored force in northern China.

Although the PRC has experimented with mechanized units, there are no indications that substantial mechanization or motorization of infantry units will occur in the near term. The primary emphasis appears directed toward upgrading the infantry division armor regiments and independent tank regiments. Additional improvements include expanding river crossing capabilities, increasing the firepower of artillery units, and upgrading local force capabilities.

The majority of China's regular ground force units are deployed in the vicinity of their expected wartime positions and are close to full strength in personnel and equipment.

UNITED STATES GROUND FORCES

In order to support NATO, and to meet the increased Warsaw Pact threat, the United States has raised its Active Army force from 13 to 16 divisions. The end strength for FY 1977 was 781,000. One of the additional 3 divisions achieved deployment readiness status in FY 1977 and the other two will be ready by the end of FY 1978. This will appreciably increase US strategic posture by raising USSR perception of US capability, which in turn is expected to lessen the likelihood of Soviet adventurism.

Permanent deployment of an additional brigade to Europe, from the Fourth Mechanized Division, has been completed as planned. A second brigade has been rotated to Germany and will permanently deploy to the NATO Northern Army Group area in late 1978 as facilities become available.

The conversion of two Army infantry divisions to mechanized infantry will further enhance visible deterrent power and will underscore US resolve to meet its NATO commitments.

MAJOR WEAPON SYSTEMS

OVERVIEW: INVENTORY COMPARISON

Chart 23 provides a comparison of US, USSR, and PRC inventories of selected major ground force weapons and equipment.

MAJOR WEAPONS AND EQUIPMENT - GROUND FORCES

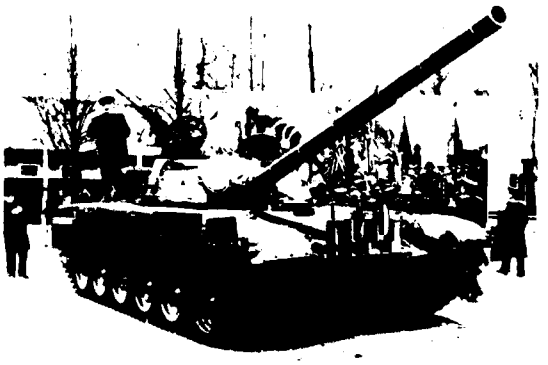
	US	USSR	PRC
TANKS	10,000	45-50,000	8-9,000
APC & FIGHTING VEH.	22,000	45-55,000	2-3,000
ARTILLERY	5,000	20,000	15-18,000
HEAVY MORTARS	3,000	7,000	5-6,000
HELICOPTERS	9,000	3,500	3-400

CHART NO 23

The United States has not attempted to match the USSR in numbers of ground force personnel or weapons, but has relied instead on technology as a force equalizer. However, evaluation of new-generation Soviet tanks, armored vehicles, self-propelled artillery, and missiles shows that the technological advantage of the United States over the USSR is rapidly diminishing.

TANK FORCES

The Soviet tank force consists of 45-50,000 medium and heavy tanks, most of which are in units and mobilization divisions. The T-64 and T-72, the best Soviet tanks, have an improved rangefinding capability, possibly incorporating a laser rangefinder; a 125 mm gun; and an improved suspension system. Owing to their similarity, the T-64s had previously been reported as T-72s. Other major items of equipment in the inventory comprise between 45,000 to 55,000 armored personnel carriers (APCs) and fighting vehicles, almost 20,000 artillery pieces, and about 7,000 heavy mortars.



T-72

The US tank inventory is less than one-quarter of the estimated USSR inventory. The US inventory is now about 10,000; the US Army's authoriz-

ed acquisition objective is approximately 14,000.

The main US battle tank is the M-60 series, which comprises two-thirds of the inventory. The M-60A1 is comparable to the Soviet T-62. A comparison is shown on Chart 24.

The US M-60 series will be in the US inventory until at least 1990. By FY 1979, the 105 mm gun M-60 tank will have replaced the old 90 mm gun M-48 tanks in both active and reserve Marine Corps units.

M-60

The Army and Marine Corps have undertaken a program of product improvement of the M-60A1 tank designed to increase reliability, durability, firepower, mobility and night fighting capability.

COMPARISON OF US AND USSR TANKS

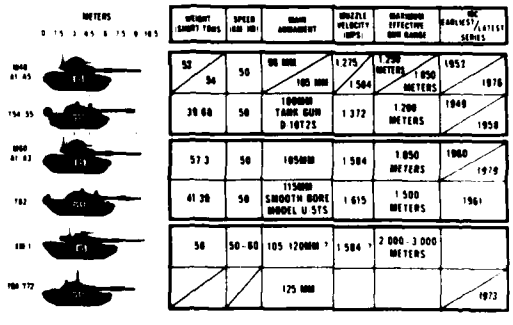


CHART NO 24

Additionally, in order to alleviate the critical near term shortage of 105 mm gun tanks, the Army is converting its 90 mm gun M-48 series tanks to a 105 mm gun configuration. This tank, the M-48A5, is being issued to some National Guard armor units.

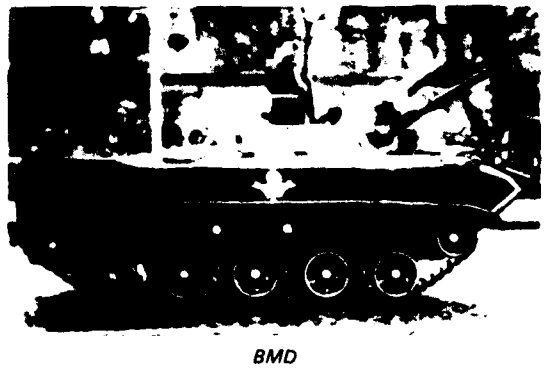
For the 1980s, the Army has developed a new main battle tank, the XM-1, designed to provide a significant improvement in offensive ground combat capability by improving armor ballistic protection, cross-country agility and firepower. However, the XM-1 is not yet in production.

XM-1

ARMORED FIGHTING VEHICLES

The newer Soviet fighting vehicles are the air-transportable amphibious armored combat vehicles, the BMD, and the amphibious armored infantry combat vehicle, the BMP. Both are capable of firing antitank guided missiles, a tank fighting capability not built into the current series of US armored personnel carriers.

The air transportable BMD has been introduced into all Soviet airborne divisions. Both the BMP and BMD are well suited for the Soviet offensive doctrine. They can keep pace with tanks and, if conditions warrant, infantry forces can fight without dismounting from them.



BMD

The United States has no armored fighting vehicle as such, but relies heavily on the lightly ar-

mored M-113 type personnel carrier to transport infantry into battle. This armored personnel carrier first entered the Army inventory in 1959 and is not designed for mounted combat.

BMP

ARTILLERY

The Soviets are developing a family of highly mobile self-propelled artillery. The 122 mm M-1974 and 152 mm M-1973 have been produced and deployed for several years. A new larger caliber (possibly 240 mm) rocket launcher with 10-12 tubes mounted on a modified truck chassis has been deployed in the Group of Soviet Forces Germany, and the Soviet Far East Military District.

The PRC artillery standardization program apparently has adopted a basic "family" of towed pieces, including the 122 mm and 130 mm guns and the 152 mm gun-howitzer, all of which are mounted on the same type carriage.

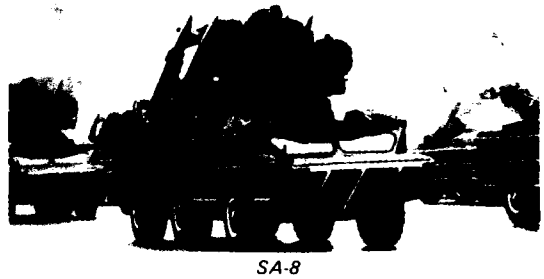
To help counter the USSR and PRC numerical superiority in artillery weapons, the United States is developing a number of improved longer-range cannon systems, the General Support Rocket Systems, and new munitions. A new development is the Army's laser-guided Copperhead artillery projectile which is designed to hit a moving or fixed target with a single shot. The nonnuclear Lance missile and the General Support Rocket System are to be fielded.

SURFACE-TO-AIR MISSILES

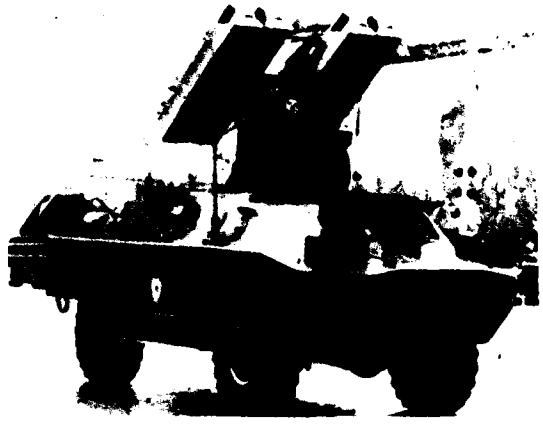
In the 1980s, the US and USSR ground forces will each face an air threat consisting of large numbers of versatile, fast, maneuverable aircraft having electronic devices to neutralize defense systems and capable of delivering ordnance with extreme accuracy.

To meet this threat, the Soviets have deployed several surface-to-air missile systems, the SA-4, -6, -7, -8, -9, which are designed to provide air defense for ground forces.

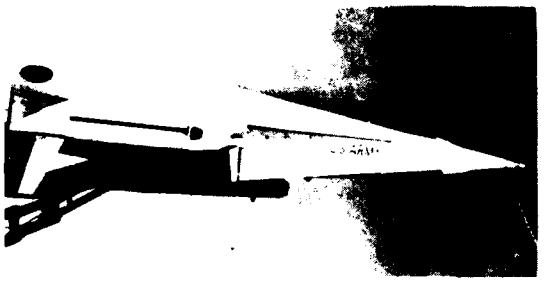
The US NIKE HERCULES and basic HAWK surface-to-air systems reflect 15 to 25 year old technology and are relatively costly to operate and maintain. As a result, the basic HAWK has been replaced by the IMPROVED HAWK system. Both systems, the IMPROVED HAWK and the NIKE HERCULES, are programmed to be replaced during the 1980s by the PATRIOT. Each PATRIOT fire section will be able to engage a number of targets simultaneously, maintain effectiveness in the face of enemy countermeasures, and require less maintenance and fewer operating personnel than present US systems. PATRIOT entered full-scale engineering development in early FY 1977.



SA-8



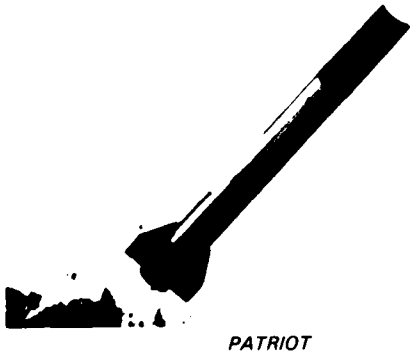
SA-9



NIKE HERCULES

HAWK

The US ROLAND surface-to-air missile will complement PATRIOT in the rear battle area. ROLAND is now in preparation for testing prior to a production decision in September 1978. ROLAND will provide all-weather, day or night, low altitude air defense. A man-portable SAM system, STINGER, is being developed to replace the shoulder-fired REDEYE missile.



PATRIOT

A new Division Air Defense (DIVAD) Gun to replace the VULCAN in the forward battle area will soon begin development. The DIVAD Gun will be a radar-directed air defense gun system with either 35 mm or 40 mm twin cannons in an armored turret mounted on a tracked vehicle.

ANTITANK WEAPONS

The Soviet Union deploys SNAPPER, SAGGER, and SWATTER antitank missiles which are generally ground or vehicle mounted. The dismounted Soviet Infantry squad's primary antitank weapon is the grenade launcher, RPG-7.

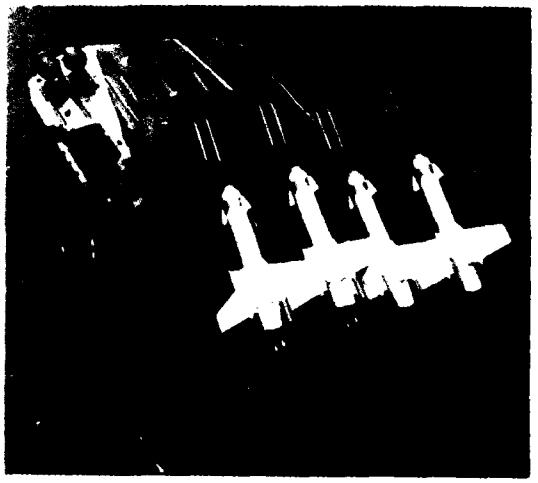
While the PRC does not appear to have an antitank guided missile system, it does have a large inventory of 82 mm recoilless guns, and rocket- propelled grenades. The PRC has expressed interest

SNAPPER

SAGGER

in acquiring Free World antitank guided missile technology and has demonstrated a fledgling capability to develop and use such technology. In view of the armor-heavy nature of Soviet ground forces, the introduction of an antitank guided

missile system into the PRC inventory is anticipated.



SWATTER

US Army and Marine Corps forces are continuing to improve their antitank capabilities with the addition of the TOW antitank missile. TOW can destroy enemy tanks, armored vehicles and field fortifications to a range of 3,000 meters. If a helicopter platform is used, the range is increased to 3,750 meters.

TOW

The DRAGON, now fielded with US ground forces in Europe, is a man-portable, antitank guided missile system, which can defeat the heaviest currently deployed armored vehicle. The DRAGON will be organic to all infantry companies, and will provide antitank or assault fire at ranges of 60 to 1,000 meters.

Although basic development for the TOW and the DRAGON is complete, a thermal-imaging, night sight for both systems is being developed to provide a 24-hour capability.

DRAGON

The October 1973 Middle East conflict has underscored the need for an improved infantry antiarmor weapon. The Advanced Heavy Antitank Missile System (AHAMS) will be designed to defeat advanced armored vehicles, under modern battlefield conditions. In addition, this system will have an improved rate of fire and extended range to improve the odds against a numerically superior force. A secondary capability for self air defense against attack helicopters will be incorporated in the development process. A plan to explore the potential of a NATO cooperative effort has been initiated and discussions are taking place in appropriate NATO groups.

The HELLFIRE is a laser-guided missile system that will provide the AAH with a point targeting weapon for the destruction of tanks and other hard targets at long standoff ranges. Current development is coordinated with the development of the Advanced Attack Helicopter (AAH), discussed in the following section.

HELICOPTERS

About 7,000 civil and military HIP helicopters have been produced to date. MI-8 HIP and MI-24 HIND helicopters are now in Soviet tactical helicopter regiments.

HIP

The United States continues to develop the Advanced Attack Helicopter (AAH). The AAH weapon system will provide a day, night and adverse weather antitank capability not presently available. The AAH will be armed with the HELLFIRE antiarmor missile system and a 30 mm cannon. It will be armored against the 12.7 mm projectile and will include battlefield survivability features.

HIND

Until the AAH is available, the AH-1S attack helicopter, with TOW antitank missiles, will provide US ground forces with additional antiarmor capability. The AH-1S will be retained in Active and Reserve Component units even after AAH becomes available.

The Army's first squad-carrying assault-lift helicopter, the UH-60A BLACKHAWK, will

AAH

replace the current UH-1 in assault helicopter, air cavalry, and aeromedical evacuation units.

The CH-53E Heavy Lift Helicopter is planned for use by the Marine Corps. The CH-53E, with a 16-ton capacity, has twice the lift capability of the present CH-53D.

NAVAL SURFACE FORCES

OVERVIEW

Chart 25 is an inventory comparison of US, USSR, and PRC major active principal surface combatant ships in active service. Summarized at Chart 26 are the US/USSR major active principal surface combatant ships for FY 1978.

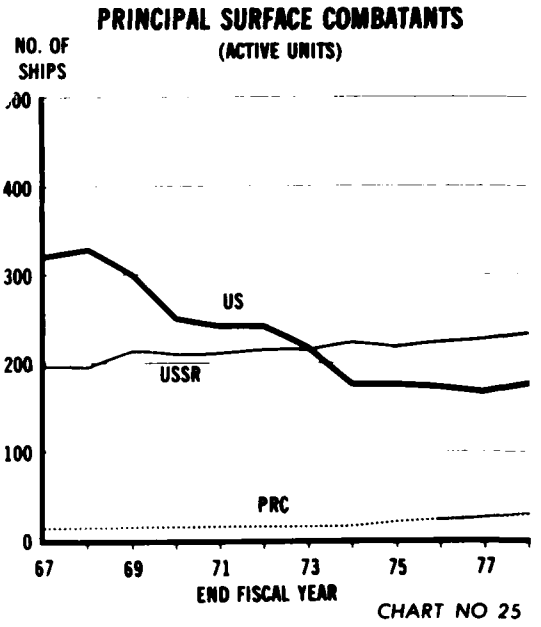


CHART NO 25

PRINCIPAL SURFACE COMBATANTS
(FY 1978)

	US	USSR
CARRIERS (CV/CVN)	13	3 *
CRUISERS (CG/CGN)	27	35
DESTROYERS (DD/DDG)	64	90
FRIGATES (FF/FFG)	65	105
	169	233

* MOSKVA AND KIEV CLASSES

CHART NO 26

USSR SURFACE FORCES

Soviet general purpose naval forces include three aircraft carriers (one an ASW type and two for guided missile helicopters), 25 guided missile cruisers, 10 light cruisers, 35 guided missile destroyers, 55 destroyers, and 105 frigates, for a total of 233 ships. This force is expected to decrease slightly in numbers through the 1980s; however, with the continuing addition of heavier and more complex ships, the force's capabilities will continue to increase.

The main strength of the Soviet surface fleet lies in its increasing numbers of large relatively new, well armed, high-speed missile ships. These ships have excellent communications and electronic warfare capabilities and are equipped with offensive and defensive missile systems capable of firing both nuclear and conventional ordnance. Current principal surface combatant construction and modernization programs indicate Soviet emphasis on improving open ocean capabilities.

Modern Soviet combatants are more heavily armed than their Western counterparts. Many are now equipped with antiship cruise missile systems which pose a significant threat to Western ships. Soviet ships apparently have been designed to optimize their effectiveness for short, intense engagements. Their antiship missiles provide a capability for seizing the initiative in an exchange. While air filtration systems and other chemical, biological and radiological (CBR) measures for crew protection have been provided, Soviet ships have poor habitability in comparison to US ships. Although damage control and underway replenishment capabilities are limited, improvements are being made in these areas. Few Soviet ships have sonars comparable to those common in the West. However, their sonars are being upgraded.

SOVIET FLEET MODERNIZATION

The Soviet naval modernization program continues to introduce new classes of combatants, as well as upgraded variants of older ships.

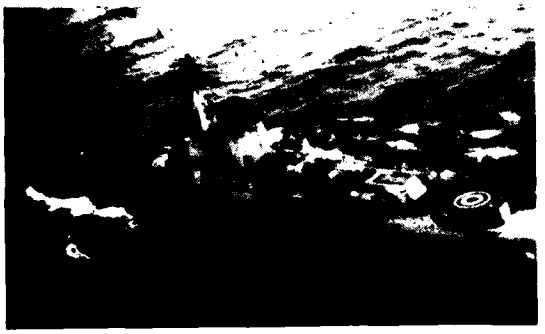
In mid-July 1976, the first KIEV class aircraft carrier deployed to the Mediterranean Sea and transited to the Northern Fleet. A second carrier of the KIEV class is expected to enter service in 1978. Construction of a third ship in this class has begun and is expected to join the fleet in late 1980.

The KIEV is not designed to conduct intensive air operations. Nevertheless, it is the largest combatant ever built in the Soviet Union and represents a significant increase in naval capability. It is expected to carry a mixed air wing complement of 30-36 V/STOL aircraft and ASW helicopters. The KIEV is fitted with surface-to-air and surface-to-surface missiles, antisubmarine rockets and torpedoes, and various gun systems to perform antiship, antisubmarine and antiair missions.

KIEV

Five KARA class guided missile cruisers are now operational and construction continues on this class. This is the largest gas turbine combatant in the world and has two different air defense missile

systems: the SA-N-3 and SA-N-4. The SA-N-3 also has an antisurface capability.



KARA

Nine KRESTA-II guided missile cruisers are completed and one is on sea trials.

KRESTA

The KRIVAK I and II class destroyers are the most heavily armed combatants for their size in the world. These destroyers have two point-defense surface-to-air missile launchers, ASW cruise missiles, two medium caliber gun mounts, and torpedoes.

KRIVAK

The first KASHIN class guided missile destroyer joined the Soviet fleet in 1963. Construction of this class has ended, but a number have now undergone modification.

In 1975, the Soviets launched a new class of frigate, KONI.

The Soviet surface combatant construction program has improved Soviet naval capabilities and a steady rate of construction is expected. In the future, new classes of surface combatants with improved propulsion, electronic countermeasures and weapon systems are expected. Through refit and modernization, the newer classes in operation now will probably be with the Soviet Navy for the next ten years.

The Soviet amphibious assault capability consists of about 12,000 Naval infantry troops and the assault ships to lift them. Amphibious assault shipping appears to be the limiting factor at this time. The Soviet amphibious shipbuilding effort has been consistent, but deliberately paced. The Soviets are also investigating new shipping concepts which might be applicable to the amphibious assault mission. However, the Soviets have not yet tried landing forces against opposition geographically distant from the USSR. The writings of Admiral Gorshkov describe the lack of this particular capacity as a significant shortcoming for a nation seeking world leadership.

The Soviets have increased their naval mining capability. New capabilities have increased the threat to shipping and challenge further the already inadequate US mine countermeasure forces.

PRC SURFACE FORCES

The PRC has an inventory of 19 principal surface combatants, including Soviet and indigenously designed destroyers, and a variety of patrol frigates. Many of these units are armed with the CSS-N-1 surface-to-surface cruise missile. These ships have a good antiship capability, but have only conventional air defense and antisubmarine warfare weapons, limitations which greatly restrict their operational scope and make extended open-ocean operations unlikely. These units are deployed to major naval bases which protect strategic areas.

Responsibility for coastal defense of the PRC rests primarily on the missile boat force, consisting of over 100 OSA and HOKU class missile attack boats armed with the CSS-N-1 surface-to-surface cruise missile.

UNITED STATES SURFACE FORCES

The US Navy's largest problem has been, and remains, too few surface combatants. However, the current program reverses the downward force level trend of the past few years. The aircraft carrier is the principal US surface combatant, performing the fundamental functions of sea control and projection of power ashore. Since the number of large deck carriers is not expected to increase, qualitative improvements in other surface combatants are being sought. For example, the nuclear powered cruiser now under development will have the AEGIS air defense weapon system. AEGIS, with its increased capabilities, is the most advanced shipboard combat system envisioned to date. It is designed to provide area air defense in a high density, high threat, antiship missile environment. Major characteristics of the system include a long detection range, automatic detection and tracking of multiple targets, automatic special threat alert, immunity to current electronic countermeasures, and a high track storage.

The United States has an urgent need to deploy AEGIS to the fleet. The Navy proposes to put it on two platforms, the DDG-47 destroyer approved by the Congress for FY 1978, and the CGN-42 nuclear powered cruiser. A mix of nuclear and conventionally powered AEGIS ships will strike a balance between numbers and individual ship capabilities, thus providing an effective air defense system that is an integral part of all major fleet forces.

It is intended that one CGN-42 class nuclear powered AEGIS cruiser be built to operate with each nuclear powered aircraft carrier (CVN) in order to complement the CVN's high speed endurance. These ships will operate with other nuclear powered cruisers and submarines, composing all nuclear powered task groups. These nuclear powered task groups will have the capability to be immediately dispatched, in time of tension, to proceed at high speed regardless of distance to the scene of a crisis, without pausing to refuel, and arrive in the objective area ready for combat.

The Navy must replace a number of aging cruisers and destroyers between the mid-1980s and 1990s. To avoid force level reductions and loss of capability, new classes of destroyers and cruisers are planned for the Navy's near-term shipbuilding program.

The Navy has also programmed more numerous, less expensive ships, such as the guided missile frigates, for use with amphibious task forces, underway replenishment groups and convoys. These ships have a substantial capability against enemy air, surface and subsurface threats, and provide most of the anticipated force level increase.

US Marine Amphibious Forces (MAF) provide a unique forcible entry capability valuable to a maritime nation with vital overseas interests. In concert with Navy task forces and supported by both Navy and organic aviation, the versatile MAFs are capable of establishing or re-establishing US presence ashore, and conducting follow-on operations. These forces are a fundamental element of the maritime forces required to fulfill the primary naval functions of sea control and power projection.

SUBMARINE FORCES

OVERVIEW

A comparison of US, USSR and PRC general purpose submarines is shown in Chart 27.

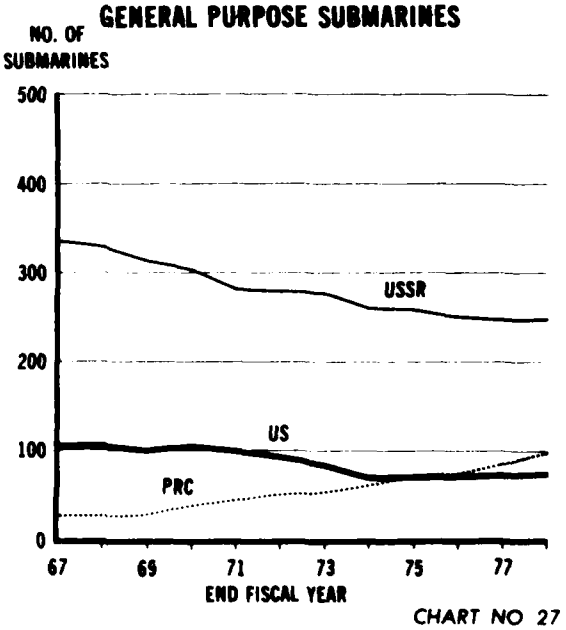


CHART NO 27

USSR SUBMARINE FORCES

The USSR continues to have the world's largest submarine force and is expected to continue replacing older submarines with newer, more effective units. The current decline in numbers of diesel powered submarines is expected to continue.

ATTACK SUBMARINES

The Soviet torpedo attack submarine (SS, SSN, SSR) force consists of 195 active submarines with additional vessels in reserve. Thirty-seven active and two reserve units are nuclear powered.

Four classes of Soviet torpedo attack submarines, two nuclear powered, are currently under construction.

FOXTROT class diesel submarines, which are still being built for export, continue to constitute the bulk of the operational Soviet submarine force.

PRC SUBMARINE FORCES

The PRC submarine force consists of 65 diesel attack submarines; one diesel powered ballistic missile submarine employed as an R&D platform for submarine ballistic missile development, and one nuclear powered attack submarine. This force is still at a comparatively elementary stage of technical and tactical development.

UNITED STATES SUBMARINE FORCES

US attack submarines currently operational include the advanced SSN 688 LOS ANGELES class. Four have been commissioned. All meet or exceed design goals and are the finest ASW platforms in existence today. Thirty-two SSN 688 class attack submarines have been authorized through FY 1978. Construction will continue until at least the mid-1980s.

SSN 688 LOS ANGELES CLASS

This modern nuclear submarine can operate independently and effectively in enemy controlled waters and will deploy in forward patrol areas to conduct offensive operations against enemy submarine and surface forces. The ship will be available to support carrier task groups, convoys, underway replenishment groups, and for open-ocean intercept and cruise missile land attack tasks. The programmed building rate will average two SSNs per year through the early 1980s.

The introduction of the HARPOON and antiship TOMAHAWK will provide US attack submarines with a medium and long-range antiship capability. The introduction of the land attack TOMAHAWK will provide a submarine weapon for use in a theater nuclear role.

NAVAL MISSILES

USSR NAVAL MISSILES

Since the late 1950s the Soviets have employed over a dozen types of cruise missiles on their submarines, surface ships, and aircraft. In the early 1960s, the Soviets began to develop several cruise missile and rocket delivered ASW weapons. Most antiship cruise missiles of the Soviet Navy use terminal homing on a target.

A growing proportion of the Soviet Navy is equipped with air defense missiles which provide an overlapping capability ranging from basic point defense missiles to longer range.

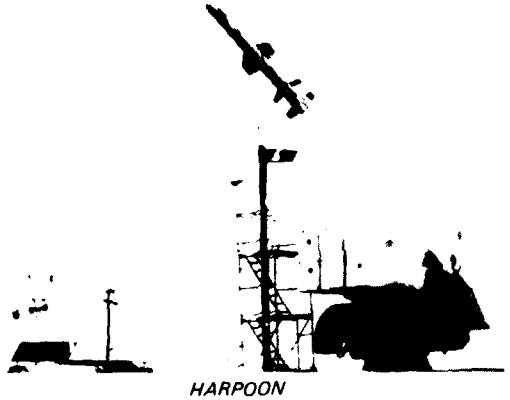
The SA-N-3 is a surface-to-air air defense missile fitted to principal surface combatants such as the KIEV CVSG, the MOSKVA CHG, and the KRESTA II and KARA cruisers which have entered the force since 1968.

The SA-N-4 is a missile system for close-in point defense against aircraft and possibly cruise missiles.

UNITED STATES NAVAL MISSILES

The HARPOON, an antiship cruise missile, has been developed and is currently deployed. The TOMAHAWK, a cruise missile designed to carry out antiship, and, as necessary, land attack missions, is under development.

The HARPOON, an all-weather cruise missile, is to be the primary antiship weapon system for US naval forces, and is planned for installation in most cruisers, destroyers, frigates, nuclear attack submarines, and some shore and carrier based aircraft, including the P-3 and A-6. The ability to employ HARPOON in other patrol and attack aircraft, as well as the B-52 bomber, has been validated.



HARPOON

The basic HARPOON, which is common to all three launch platforms, is powered by a turbojet engine. After launch, it descends to 100 feet above the water. This sea skimming flight profile, along with active terminal guidance radar ensures a high probability of penetrating enemy defenses and hitting the target. The missile has a maximum range of 60 nm with a 500 lb conventional warhead, and has demonstrated excellent hit probabilities against destroyer-size targets out to this range. HARPOON is compatible with launch systems for other missiles.

HARPOON has completed operational evaluation and has been provisionally approved for service use. Full approval for service use will be granted when certain production reliability criteria are met. The initial operational capability for surface ships has been met. Introduction into submarines has begun and introduction into fleet aircraft will take place in mid-1978.

TOMAHAWK is being developed as an all-weather, long-range, high subsonic cruise missile. Available in both land attack and antiship versions, TOMAHAWK can be launched from submarine, surface ship, land and air platforms.

The land attack version will be capable of delivering a nuclear warhead against land targets. The land attack TOMAHAWK will fly at very low altitudes. This, coupled with terrain masking and low radar and infrared cross sections, should make defense against it extremely difficult.

The antiship TOMAHAWK will be capable of delivering a conventional warhead against enemy ships out to 300 nm.

NAVAL AVIATION

USSR NAVAL AVIATION

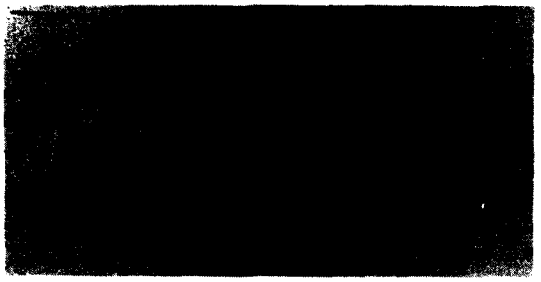
The primary air threat to US Navy surface operations is the Soviet Naval Aviation (SNA) force composed of about 375 BADGERs, BACKFIRE ASM bombers, and BLINDER bombers armed with both conventional and nuclear munitions. These aircraft are supported by

BLINDER

about 150 intermediate and long-range reconnaissance and ECM aircraft, plus a BADGER tanker fleet of some 90 aircraft. Approximately 400 intermediate-range MAY ASW aircraft, short-range MAIL ASW amphibian aircraft, BEAR F long-range ASW aircraft, and the HOUND, HORMONE A, and HAZE A helicopters fill out the force.

The introduction of BACKFIRE into the Soviet

Navy in late 1974 significantly increased the range and overall strike capability of SNA. BACKFIRE is superior to BADGER and BLINDER in overall performance, range, speed and tactical flexibility. Some BACKFIRE probably will deploy in a long-range reconnaissance role.



HORMONE

HAZE

The open-ocean ASW capability of the SNA consists primarily of MAY and BEAR F. The MAIL provides near-zone (i.e., from the coast out to about 200 nm) ASW and maritime reconnaissance. The MAY's patrol endurance compares favorably with the US P-3. MAY and MAIL have magnetic anomaly detection (MAD) capabilities. The Soviets will probably acquire a new long-range ASW aircraft by the early 1980s.

SNA's ASW helicopter force consists of HORMONE A, HAZE A, and HOUND helicopters. The HORMONE A lacks a night and all-weather sonar-dipping capability. The HAZE is being deployed in a land-based ASW role as an apparent replacement for the HOUND. Another new naval helicopter is projected in the mid-1980s for ASW and reconnaissance roles.

SNA has FITTER C/D fighter bombers assigned to the Baltic Sea area that could be used in limited antiship strike roles or to support amphibious operations in that area.

The V/STOL YAK-36 FORGER, which was deployed aboard the KIEV in 1976, may be capable of fleet air defense, strike, close air support and reconnaissance roles. Total production will be determined by the number of follow-on carriers constructed by the Soviets.

FORGER

UNITED STATES NAVAL AVIATION

The Navy's ability to gain and maintain control of selected sea areas and to project power depends in large part on the capabilities of land and sea-based, particularly carrier-based, aircraft.

The embarked carrier air wing's major systems include: the F-14A TOMCAT fighter with PHOENIX missile system, which can combat the SNA BACKFIRE and antiship missile threat; the A-7 and A-6 attack aircraft to provide the sea control strike capability; S-3 and SH-3 aircraft for ASW; and EA-6B, RA-5C/RF-8G, E-2C, KA-6D aircraft for electronic warfare, reconnaissance, early warning and tanking support. The sea-based aviation forces are augmented by long-range land-based P-3 aircraft which provide ASW and surveillance support and, if necessary, certain US Air Force assets which have capabilities which can contribute to sea control and surveillance.

F-14A

Naval aviation forces are further complemented by Marine Corps aviation forces integral to Marine

A-7

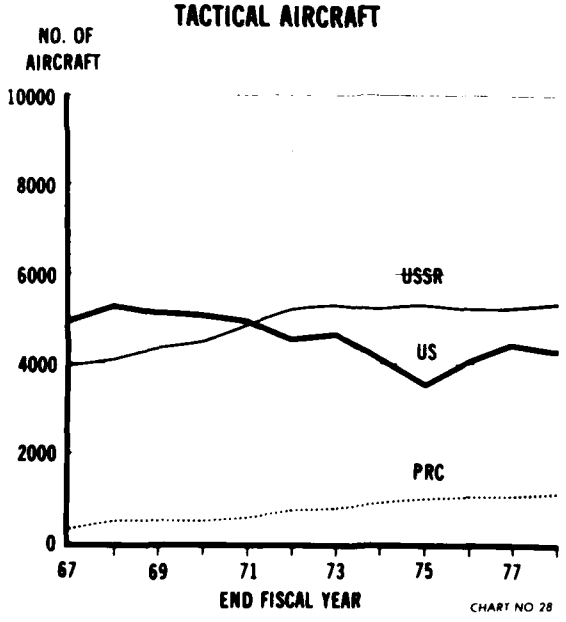
air-ground task forces. Through a flexible operating base capability and common logistic support, the aviation elements of the MAFs can augment carrier based naval aviation forces from austere land bases or from sea-based platforms.

TACTICAL AIR FORCES

OVERVIEW

Since the late 1960s Soviet and Warsaw Pact theater air forces have grown in numbers and improved in quality. During this period, the US tactical aircraft inventory dropped below that of the Soviet Union.

Shown on Chart 28 are the US, USSR, and PRC tactical aircraft inventories, including fighter, attack, intermediate-range bomber, and reconnaissance aircraft.



US figures include all aircraft in active and reserve components of the Air Force, Navy and Marine Corps, except those used for training (about 900 in 1975) and those assigned to Continental Air Defense (about 285 in 1976). Also excluded are aircraft used in research and development, test and evaluation, and spares for attrition losses.

The Soviet figures similarly exclude tactical-type aircraft used for training (about 3,000 in 1977), and fighter aircraft assigned to homeland air defense (about 2,600 in 1977).

Soviet tactical aviation has offensive capable tactical air units in the USSR and with the four Groups of Soviet Forces in East Germany, Czechoslovakia, Poland, and Hungary. The primary emphasis for Soviet tactical aircraft is against NATO's Central Region, with the bulk of the remaining aircraft deployed against NATO's Southern Region and the Far East.

In the PRC, most fighter aircraft, over 4,000 in 1977, are assigned a strategic home defense mission. The PRC figures, therefore, include only the tactical aircraft fighter bombers and medium bombers in the active inventory of the air force and naval air force. However, home defense interceptor units participate in ground support training exercises. It is believed that some of these strategic home defense aircraft would be utilized in a tactical role as required. No reserve aircraft figures are available for the PRC.

TRENDS

USSR TRENDS

The USSR traditionally has emphasized air defense in its tactical air forces and has a clear quantitative advantage over the United States in this category. Since 1972, the new SU-17 FITTER C/D, the MIG-23 FLOGGER B, MIG-27 FLOGGER D and the Sukhoy FENCER A have become operational. Compared to earlier Soviet tactical fighters, these new aircraft have substantially improved range, payload, avionics and electronic countermeasures capabilities, thereby providing a multiple mission potential. The new types now comprise a significant portion of the force.

FENCER, the most advanced tactical aircraft in

the Soviet inventory, is capable of conducting nuclear strike missions from bases in the western USSR against a wide variety of European targets.

The FLOGGER and FITTER C/D are capable of striking targets in most of NATO Europe from bases in the western USSR. During sustained conventional operations, maximum use of their payload and range capabilities could be made if those FLOGGER and FITTER C/D aircraft currently in the western USSR would deploy to forward bases.

The MIG-25 FOXBAT B/D has substantially improved the reconnaissance capabilities of Soviet tactical air forces.

The Soviets are also developing a variety of new air munitions to complement this growing inventory of modern, multi-mission aircraft.

Since 1969, the Soviets have been phasing third generation tactical aircraft into their forces in Eastern Europe. The latest phase in the upgrade of Soviet tactical air force inventories opposite NATO's Central Region is nearing completion.

PRC TRENDS

The PRC tactical inventory of over 1,000 aircraft consists of F-9 FANTAN, MIG-15 FAGOT fighter-bombers, IL-28 BEAGLE, and TU-2 BAT medium-range bombers. The PRC aircraft industry is producing both the FANTAN and BEAGLE.

In August 1977, the PRC forces conducted a joint service exercise opposite Taiwan. During the exercise, attack aircraft were reported bombing and strafing in support of parachute assaults, with the entire force protected by interceptors. Although the exercise was elementary by US standards, it did show increased sophistication in the use of tactical air power in the PRC.

UNITED STATES TRENDS

The number of US tactical aircraft, after declining for several years through obsolescence and attrition, will begin to stabilize at about 4,500 aircraft, if approved programs are fully funded. While the numerical advantage remains with the Soviets, a substantial modernization program for US aircraft would reduce the impact of this disparity. Nevertheless, rising cost associated with high-performance aircraft continues to slow force modernization efforts.

The F-14 and F-15 remain the two most capable fighters in the world. Their primary role is to attack and destroy the enemy air threat and to provide localized air superiority over the land or naval battle area. Having a sufficient number of these aircraft is critically important, if the US is to defeat the growing numbers of sophisticated Soviet aircraft. The high cost of such aircraft precludes equipping the total fighter force with them. Therefore, the USAF F-16 program and the Navy/Marine F-18/A-18 programs are designed to provide less costly, more specialized aircraft to meet tactical aviation requirements.

FIGHTER/ATTACK AIRCRAFT

USSR FIGHTER/ATTACK AIRCRAFT

The newer generation of fighter aircraft, the MIG-21 FISHBED J/K/L/N series, is the backbone of Soviet tactical aviation. A large number are deployed to Soviet units in the forward area, and in the USSR. Export version FISHBED are assigned to Warsaw Pact allies. Additional FISHBED L are assigned to the homeland air defense forces. These newer FISHBED are equipped with cannon, carry up to double the number of air-to-air missiles of the previous D/F versions, and have greater fuel loads to extend their combat radius.

FISHBED

The MIG-23 FLOGGER was first deployed in 1970, and has deployed in accelerated numbers since 1973. The FLOGGER B will soon displace the FISHBED as the primary air-to-air tactical weapon system. The FLOGGER is currently deployed with

Soviet Forces in the forward area and in the Soviet interior. The weapons, avionics and fuel payload of the FLOGGERs are all superior to those of the FISHBED. A ground attack FLOGGER variant, the FLOGGER D, has been deployed with ground attack units.

The SU-17 FITTER C/D ground attack fighter represents a major improvement over the earlier FITTER models. The FITTER C, with its more powerful engine and improved avionics, is in a completely different class from the earlier A and B variants.

The Sukhoy interdiction fighter-bomber, FENCER A, entered operational service for the first time in December 1974. The FENCER is the first modern Soviet aircraft that provides for a weapon systems officer. The FENCER carries a variety of guided and unguided air-to-ground weapons and appears to be the first Soviet fighter specifically designed for ground attack.

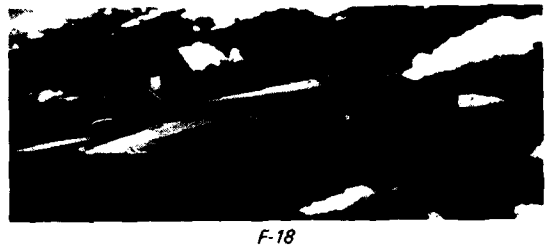
Significant additional deployments of the reconnaissance version of the MIG-25, the FOXBAT B/D have continued.

UNITED STATES FIGHTER/ATTACK AIRCRAFT

The plan for modernization of the tactical air forces continues. In the case of fighters, procurement of 509 F-14s is planned. The fifth full-scale deployment of the F-14 on board the USS J.F. KENNEDY was completed in August 1977. The six-month deployment surpassed the operational readiness statistics of prior cruises. The F-14 PHOENIX weapon system reliability continues to improve, and adds an operational capability to the fleet which is a quantum increase over that provided by the F-4.

The remainder of the Navy F-4 force will be replaced by the fighter version of the F/A-18 commencing in 1984. The first development test flight is scheduled for the fall of 1978. The initial operational squadron for the Marine Corps is scheduled for FY 1983 and for the Navy in FY 1984.

The F/A-18 is a multi-mission aircraft designed for the strike escort fighter and the light attack roles. The fighter version, the F-18, will be a superior close-in fighter, and will have some beyond-visual range missile capability for the air intercept role. The attack version, the A-18, will serve as a replacement for the Navy's A-7E in the late 1980s. It is programmed for an initial operational capability in FY 1985. The weapon control system is optimized for both the air-to-ground mission and the air-to-air mission. Full scale development program indicates that the F/A-18 will be highly maintainable, reliable, and survivable. The F/A-18 will enable the Navy and Marine Corps to meet force level requirements for the mid-1980s and 1990s.



F-18

All-weather attack functions, including close air support for the Navy and Marine Corps, will continue to be provided by the A-6E, a version of the combat-tested A-6A with much improved reliability, maintainability and weapons accuracy. The A-6E system is currently being enhanced by addition of the Target Recognition Attack Multi-sensor (TRAM), which includes an infrared sensor, laser ranger/designator and laser receiver. Coupled with the A-6E all-weather radar, TRAM will provide the capability to acquire, identify, and make a first pass attack on enemy targets. Passive sensors for use at night or in poor weather and laser or electro-optical guided weapons as well as conventional weapons, will be incorporated in the A-6E making it the most advanced strike aircraft in the Navy's inventory.

Marine Corps fighter requirements will be met by retaining the F-4 until introduction of the F-18 in 1983. To fulfill Marine Corps light attack missions, the A-4M and AV-8 will continue in service. The AV-8A vertical/short takeoff and landing (V/STOL) aircraft was introduced in 1971 to provide an attack aircraft capable of operating from ships, bombed-out airstrips, roads or grass airfields. The service life of the AV-8A will be extend-

ed and its capabilities improved through a Conversion in Lieu of Procurement (CILOP) program which will maintain the AV-8 in the active force until replaced by a follow-on light attack aircraft.

AV-8

The Navy is embarking on a plan to convert a portion of its sea-based aviation to V/STOL. Studies indicate that appropriately capable V/STOL aircraft could accomplish the Navy's missions while providing added flexibility to fleet operations. V/STOL should be able to operate from many different ships in the Navy and from Marine remote sites. Design studies will continue, and the Navy and aerospace companies will seek innovative and competitive alternative approaches to V/STOL. First flight of the prototypes will be in 1983 with a planned initial operating capability in 1991.

The Navy's E-2C airborne early warning aircraft, successor to the older E-2B, has now been introduced to the Pacific. The E-2C/F-14 team forms an impressive Fleet Air Defense combination. Recent testing of the new advanced radar processing system (ARPS) on board the E-2C indicates significant improvement in electronic countermeasures (ECM) resistance and in detection and tracking capabilities. Five ARPS aircraft have been delivered. Outfitting of an all E-2C AEW force consisting of twelve four-plane squadrons (six on each coast) and two six-plane training squadrons is scheduled for completion in 1983.

In the US Air Force, the major changes in the tactical aircraft inventory will be the continued addition of the A-10 and the F-15, and introduction of the F-16. In addition to active force improvements, the A-10 is programmed for delivery directly into the Air Reserve Forces starting in FY 1979. In 1977, the first A-10 wing became operational in the Tactical Air Command. Deployment of an A-10 wing to Europe in FY 1979 is being planned. The first 339 aircraft are fully funded; a total procurement of 733 operational and support aircraft is planned.

The A-10 has been developed as a specialized close air support aircraft to destroy armored vehicles, including tanks, at minimum cost. The A-10 is capable of delivering a wide variety of nonnuclear munitions, including MAVERICK missiles, ROCKEYE and laser-guided weapons. An air refueling capability and long loiter characteristics make the A-10 highly responsive to the needs of US ground forces. The A-10's survivability features have been a primary design criterion. Its maneuverability contributes to survivability and permits operations under the low weather ceilings and in the limited visibility conditions that would be experienced in Europe. It has demonstrated excellent capabilities against Soviet made tanks in tests using the depleted uranium antiarmor 30 mm round.

A-10

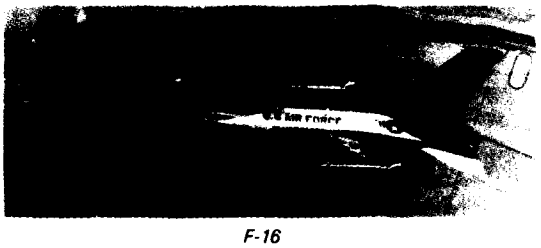
The first F-15 EAGLE squadron became operational in the Tactical Air Command in FY 1977. United States Air Forces Europe (USAFE) received three squadrons of F-15s in FY 1977. The fourth USAFE F-15 squadron will become operational in FY 1979. The programmed procurement of 729 operational and support F-15s will be completed by FY 1981 with deliveries completed in FY 1983. The F-15 provides a night and adverse weather capability to counter the increasing numbers of sophisticated Soviet aircraft and has look-down, shoot-down capability.

The F-15 was designed primarily to provide an air-to-air combat capability superior to that of

enemy aircraft projected for the 1980s. A recently approved modification, which will increase station keeping time, will provide either more beyond-visual-range firing opportunities or an increase in the number of potential targets that can be engaged.

F-15

The first development F-16 aircraft flew on 8 December 1976. The first active combat operational units will be introduced in FY 1980 and funding for a total of 1,388 aircraft will continue through FY 1986. Ten active and two reserve F-16 wings will be organized. The F-16's exceptional maneuvering and handling characteristics provide excellent air-to-air combat capabilities for close-in maneuvering engagements. The F-16 offers a cost effective means of modernizing and equipping US tactical air forces. Arrival of the F-16 will free additional F-4s for transfer to the Reserves. F-16s are planned for direct delivery into the Reserves beginning in the mid 1980s.



F-16

In June 1975, the governments of Belgium, Denmark, the Netherlands, and Norway also agreed to purchase the F-16 to replace older aircraft. Under European/US co-production arrangements, nearly 1.4 billion dollars worth of contracts have been awarded in Europe. The F-16 program represents a significant step toward NATO standardization and interoperability.

The F-16 is also a major step in reversing the trend of rising weapon systems procurement costs. The combined force of F-15s and F-16s forms an affordable and capable mix of tactical air fighters. By moving toward a force structure composed of both types of air superiority aircraft, a larger force can be maintained for equivalent budget expenditures, and block obsolescence of the aging F-4 fleet is avoided.

Suppression of Soviet air defenses in Central Europe is a most critical challenge. Modernization efforts include improvements to threat warning systems, airborne jammers, electronic countermeasures (ECM) pods, and expendable chaff/flares. Other suppression measures are improved artillery range and accuracy, 116 Enhanced Wild Weasel F-4G aircraft (24 in Europe), and continued development of the Precision Location Strike System (PLSS).

The E-3A Airborne Warning and Control System (AWACS) is an airborne surveillance and command and control system capable of detecting aircraft in both clear and ECM environments at all altitudes in strategic defensive and tactical roles. The first operational E-3A was delivered on 24 March 1977, and as of 1 January 1978, five E-3As are in the USAF operational inventory. Twelve aircraft are projected by the end of FY 1978 and 19 by the end of FY 1979. The production phase includes provision for the procurement of 31 AWACS systems. Three prototype aircraft purchased with R&D funds will be refurbished for operational use to provide a total inventory of 34 operational and support E-3A aircraft. AWACS initial operational capability is expected to be reached this year. A detachment will deploy to Iceland in FY 1979 as a replacement for the EC-121. Procurement of AWACS by NATO is contemplated.

UNITED STATES AVIATION ORDNANCE

It is believed that the US currently enjoys a considerable edge over the Soviet Union in tactical air ordnance.

Precision guided munitions raise the single shot kill probability and reduce the combat exposure of the delivery vehicle. These are significant advantages.

The improvement of the accuracy and lethality

of air-to-ground conventional munitions is important. The HARPOON antiship weapon, discussed earlier, and the MAVERICK, an antiarmor weapon, are being developed and procured for use against specific high value targets.

The Navy has deployed the WALLEYE weapon system which provides intermediate-range standoff capability against heavily defended targets. The air-to-ground GBU-15, an Air Force development, has long standoff capability with electro-optical terminal guidance to produce high accuracy. Development in imaging infrared guidance, antiradiation missiles and penetrating warheads will provide future capability against point and hardened targets.

THEATER NUCLEAR FORCES

OVERVIEW

A theater nuclear capability is an essential element of successful deterrence and defense. Theater nuclear forces provide linkage between conventional and strategic nuclear forces.

In the event aggression cannot be contained conventionally, theater nuclear forces provide a capability to fight the battle and an opportunity to terminate conflict short of strategic nuclear war. Theater nuclear weapons are deployed as an integral part of US theater forces to strengthen the deterrent effect of forward defense and to provide immediately available combat power to augment conventional forces.

Theater nuclear force (TNF) modernization within NATO is being pursued within the context of the NATO Long Range Defense Program. Initial consultations within NATO were undertaken last fall as a follow-on to the 1976 US paper which raised the topic of TNF modernization within NATO. Work is now proceeding, in consultation with allies, on development of specific programs to accomplish TNF modernization goals.

LAND-TARGETED FORCES AND SYSTEMS

USSR THEATER NUCLEAR FORCES: LAND FORCES

The Soviets have a significant number of nuclear missiles with which they could launch an attack on the Eurasian continent. Their peripheral missile attack force consists of MRBM (1,050 nm range launchers) and IRBM launchers (2,200 nm range launchers) located mainly in the western USSR. In addition, some of their ICBMs and SLBMs can be fired at short range and can be retargeted.

The Soviet Union has deployed a large number of nuclear-capable tactical missiles and rockets--primarily the SCUD short-range (85-160 nm) tactical ballistic missile, the FROG, a surface-to- surface unguided rocket and the SCALEBOARD, a longer range surface-to-surface missile. Initial deployment of the SS-20 has begun.

The Soviets have also continued active training in nuclear delivery techniques with the tactical aircraft assigned to Frontal Aviation. The most frequently used aircraft on nuclear delivery training missions are MIG-21 FISHBED J/K/L/N; SU-7 and SU-17 FITTERs; MIG-23 and MIG-27 FLOGGERs; and various medium-range bombers. The SU-19 FENCER is also an excellent aircraft for this type of mission.

PRC THEATER NUCLEAR FORCES: LAND FORCES

There is no direct evidence to confirm the size of the PRC's nuclear weapon stockpile.

The PRC has about 70 MRBM/IRBMs deployed in a strategic role. Deployment patterns and minimum range capabilities of these systems indicate that China has the capability to employ some of these missiles in a theater support role.

The primary aircraft available in the PRC inventory for nuclear attack is the TU-16 BADGER. Additionally, TU-4 BULLs and a few IL-28 BEAGLES could be used to conduct nuclear strikes. If configured for nuclear attack, the BADGERs could strike targets along China's periphery to a distance of 3,000 km. About 50 Soviet urban-industrial areas east of the Urals are within its range. The BEAGLE could also be used for nuclear attacks against the Soviet Union. However, the BEAGLE radius-of-action would limit any such strikes to the immediate border area.

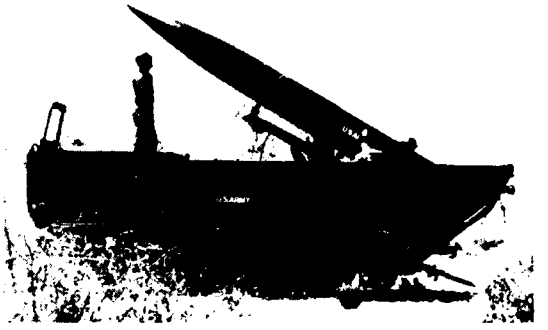
UNITED STATES THEATER NUCLEAR FORCES: LAND FORCES

The current inventory of US tactical nuclear weapons is becoming obsolete and requires modernization. Many weapons now available reflect technology of the 1950s and 1960s. The US inventory does not contain any ballistic missiles in the MRBM/IRBM class. Current US theater nuclear forces consist of nuclear-capable cannon artillery, tactical surface-to-surface missiles, nuclear-armed strike aircraft, nuclear air defense missiles, atomic demolition munitions and ASW nuclear systems. Additionally, a substantial number of POSEIDON SLBM warheads are committed to support the Supreme Allied Commander, Europe (SACEUR).

The 8-inch and 155 mm nuclear artillery projectiles constitute the nuclear cannon artillery stockpile. A new 8-inch nuclear projectile is now in engineering development. The new projectile will provide a substantial increase in range, reduce response time, and improve effectiveness against the Warsaw Pact tank threat. Funds are also being requested to continue development of an improved 155 mm projectile. The 155 mm projectile is critical for support of NATO allies who are in the process of standardizing the 155 mm howitzer as their predominant artillery weapon and will ensure appropriate density of nuclear firepower across NATO's front.

By converting some dual-capable NIKE HERCULES sites to conventional-only batteries, resources can be conserved while maintaining an effective high altitude nuclear air defense deterrent. A detailed coverage analysis is being conducted by SHAPE to determine which sites should be converted to conventional warheads only and which should retain dual capability. Actual conversion could be completed by early 1979. There will be no reduction of NIKE HERCULES batteries as a result of this program.

PERSHING and LANCE are the principal US tactical surface-to-surface missiles. SERGEANT and HONEST JOHNs have been replaced by LANCE in US units but some HONEST JOHNs will be retained in support of allies.



LANCE

Engineering development is proceeding on a modular improvement to the current PERSHING IA. The PERSHING II will feature improved accuracy through the use of radar area correlation guidance. This accuracy improvement will permit a marked reduction of warhead yields.

The inclusion of RB/ER warheads in ground force theater nuclear weapon systems (LANCE) is a significant technological advance which will assist in meeting theater nuclear force modernization requirements. An RB/ER weapon provides over 30 percent of its initial energy in nuclear radiation giving increased battlefield effectiveness while reducing the nominal collateral damage radius by almost one-third. RB/ER weapons can contribute to deterrent capability and flexible response strategy by: making a nuclear response more credible if use of nuclear weapons on friendly territory is required; limiting effects, thereby improving escalation control; allowing effective engagement of targets which could not otherwise be targeted due to collateral damage and troop safety constraints; and increasing the area over which enemy units can be targeted.

A ground-launched version of the TOMAHAWK cruise missile will be considered for deployment in the European theater. This weapon's range and mobility would enhance the survivability of NATO's land-based, long-range theater nuclear forces. In addition, its projected high penetration probability, relatively low cost and high accuracy may offer improved cost effectiveness in comparison with current long-range systems.

Improved versions of the modern B61 gravity bomb, providing enhanced safety and security features, continue to be deployed to theater forces. Completion of the current tactical nuclear bomb modernization program should permit the retirement of tactical versions of the older bombs.

NAVAL FORCES AND SYSTEMS

USSR THEATER NUCLEAR FORCES: NAVAL FORCES

There are uncertainties about the Soviet naval nuclear weapons inventory, but the existence of these weapons is established. The Soviets have a balanced force of antiship, antiair, and antisubmarine nuclear weapons.

UNITED STATES THEATER NUCLEAR FORCES: NAVAL FORCES

The United States is developing the HARPOON antiship missile, and is conducting a feasibility study of a nuclear warhead for this system. The earliest tentative deployment of a nuclear version of this weapon is the early 1980s. TERRIER and TALOS missiles now provide fleet nuclear air defense. TALOS is scheduled for retirement.

The sea-launched version of the TOMAHAWK cruise missile is in engineering development. Deployed aboard nuclear attack submarines, the TOMAHAWK will be a highly survivable weapon for antiship attack, and, as appropriate, for use against land targets with a nuclear warhead. In addition to deployment on nuclear attack submarines, TOMAHAWK will be deployed on about 50 surface ships.

Nuclear ASW weapons have significantly greater effectiveness than conventional alternatives. The US nuclear ASW arsenal consists of air-delivered weapons (depth bombs), surface-delivered weapons (ASROC) and submarine-delivered weapons (SUBROC). Nuclear ASW weapons provide a hedge against the possible inadequacy of conventional ASW. In view of their military utility they will be retained in the stockpile until a significantly improved conventional ASW capability is available.

CHEMICAL AND BIOLOGICAL WARFARE AND NUCLEAR, BIOLOGICAL AND CHEMICAL DEFENSE

USSR CHEMICAL AND BIOLOGICAL WARFARE

The Soviet Warsaw Pact forces continue to maintain a superior capability to survive and operate in a toxic environment, and to employ chemical weapons (Chart 29).

While the Soviet leaders are politically pursuing a total ban on the development, production, and stockpiling of chemical weapons, their military efforts in the chemical warfare (CW) area continue. Chemical, biological and radiological (CBR) training areas are becoming more sophisticated, improved training methods are being developed, and equipment is being improved and fielded.

There is no evidence to suggest slowdown in Soviet efforts to improve their capability to operate in toxic environments. Warsaw Pact doctrine clearly envisions the employment of chemical weapons in conjunction with either nuclear or conventional weapons. Chemical weapons are viewed as playing an important role in neutralizing enemy nuclear delivery means. There is also some evidence suggesting the Soviets would employ chemical weapons in a conventional war. A variety of delivery systems and chemical agents for use against tactical targets in the battle area is available to front commanders.

A large, well-equipped and well-trained CBR organization is organic to the Warsaw Pact force structure. In addition to the CBR troops, all other combat and combat support forces receive CBR training. There are many CBR training sites in the Warsaw Pact area, the majority of which are Soviet controlled. Warsaw Pact forces are unsurpassed in their capability to protect themselves and to conduct offensive and defensive tactical operations when such weapons are used. Decontamination equipment and individual personnel protection equipment are available to all fighting forces and support personnel. Chemical specialists

US-USSR CW CAPABILITY COMPARISON

	US	USSR
	[illegible] nationally prepared to survive chemical [illegible] prepared to conduct sustained chemical [illegible]	Better prepared to engage in chemical warfare than any other nation; formidable offensive and defensive capabilities.
	[illegible] New agent development very limited. Currently developing binary nerve agent munitions and [illegible] agents. No open air testing [illegible] At [illegible] of effort devoted to [illegible]	Known to be extensive and wide-ranging. Publicized research includes numerous areas with CW potential. Evidence of recently increased testing activity.
	Committed to "No first use." Use in retaliation [illegible] release and delegation of [illegible] authority to unified commands.	Committed to "No first use." Requires initial release authority to political level, then delegation to "Front" level as required.
	Extensive, [illegible] dedicated chemical defense [illegible] Army only, has some [illegible]	Dedicated chemical defense units at all levels. "Front" down to regimental [illegible] at company level.
	[illegible] functional and [illegible]	Vertically structured [illegible] control. Chemical Directorate [illegible] to Minister of Defense.
	[illegible] varies widely. Usually [illegible] emphasis in training exercises. [illegible] areas.	Extensive at all levels, in all services. CW normally defensive, included in field exercises. Evidence of training with live agents. Extensive training areas.
	[illegible] to support requirements. Major munitions becoming [illegible] Based primarily, artillery, [illegible] munitions, land mines, limited Pearl deployment. Limited production [illegible]	Total stockpile unknown. Doctrine requires large stockpile. Production capability exists. Munitions include aircraft, artillery, multiple rocket launchers, free rockets over land (FROG) tactical ballistic missiles and possible cruise missiles.
	[illegible] adequate. Significant [illegible] contamination and collective [illegible] individual protective equipment [illegible] insufficient.	All ground, and most air and naval personnel supplied with individual protective equipment.
	[illegible] protective capability, [illegible] individual countries from [illegible] none. Limited standardization [illegible] operative efforts. With the exception of France, rely on US munitions capability.	Warsaw Pact doctrine, [illegible] equipment, and training similar to USSR. Cooperative development and production efforts for protective equipment. Rely on Soviet supplied munitions.

CHART NO 29

are assigned down to company level and chemical units exist in all formations down to regiment. Combat and combat support units are well trained in protective and decontamination techniques. In addition, medical support units receive training and have a special platoon for the care of mass casualties expected from nuclear, chemical or biological warfare.

Increasing numbers of combat and combat support vehicles with integrated CBR collective protection systems are appearing throughout the Warsaw Pact area.

UNITED STATES CHEMICAL AND BIOLOGICAL WARFARE

In accordance with the Biological Warfare Convention, all US military stocks of biological warfare agents and munitions have been destroyed. The only continuing military programs related to biological agents pertain to defensive protective equipment and research on the prevention of disease.

The Geneva Protocol of 1925 prohibits the use of chemical and biological agents in war. The United States, like most major powers, has retained the right to retaliate should chemical weapons be used against it. Specifically, US policy is to retain a chemical warfare capability designed to deter the use of these weapons against the US or its allies, and, should deterrence fail, to permit a reasonable degree of retaliation with chemical weapons. In June 1977, the President directed that US negotiations take a comprehensive CW arms limitation approach with the Soviets during

bilateral talks and that the US CW stockpile be maintained without improvement. Therefore, efforts to improve the CW retaliatory capability have been halted. There is no request for production of chemical filled munitions in the FY 1979 budget.

Bilateral talks with the USSR are now underway; however, little progress on substantive issues has been achieved to date. A treaty must include adequate provisions for verification of compliance, which presents difficult problems. The Joint Chiefs of Staff actively support and are participating in these negotiations to eliminate chemical weapons.

Should United States forces be attacked on a significant scale with chemicals during a conventional engagement, while lacking the ability to retaliate, it could be forced to initiate a nuclear response to defend successfully. If the Soviets achieve tactical nuclear parity, this option would be less viable.

Progress is being made in improving the US defensive chemical warfare posture, but much remains to be done.

The first priority objective is for protective capabilities which will ensure the survivability of the conventional and theater tactical nuclear capability. Current protective capability must be rated as marginal due primarily to shortages of protective clothing, lack of CW protective shelters, lack of decontamination equipment, and the lack of an adequate area warning system.

Procurement of CW defensive equipment for war reserve and peacetime training has increased in FY 1978 and will continue.

Principal US programs for development of protective equipment include: improved prophylaxis and therapy to protect against chemical agents; point-source detection and warning alarms; area scanning alarms; decontamination methods and equipment; protective clothing, masks, gloves, and boots required for individual physical protection; collective protection for vehicles and buildings; liquid agent detector kits, and training agents and devices. These programs are designed to provide equipment for all US forces with maximum standardization. Comparable allied programs parallel these efforts. NATO's force goals already give high priority to CW defenses.

The second objective in the CW program is to enhance the credibility of the retaliatory stockpile by reducing vulnerability, increasing availability of a greater variety of munitions, and improving peacetime security. The basic purpose of a retaliatory chemical capability is to deter the use of CW against the US or its allies. An improved protective posture and more adequate training also contribute to deterrence. The present US CW stockpile is aging and contains a number of obsolescent weapon systems.

The aims of modernization are to provide a sufficient stockpile, allow for rapid deployment of munitions from storage to theater locations, and provide greater employment flexibility through variations in delivery configurations. Modernization of the chemical warfare deterrent and retaliatory stockpile can be accomplished either by upgrading the present stockpile, or by converting the stockpile to binary munitions (munitions which contain two relatively safe, separate chemical components which combine to form a lethal agent while the munition is enroute to the target). Binary munitions offer a feasible, economic, and safe alternative which would limit potential hazards to areas surrounding storage sites, and would provide greater deployment flexibility by eliminating degradation of agent purity. In addition, there would be an elimination of costly disposal programs and reduced cost in government production plant facilities.

ELECTRONIC WARFARE

USSR/WARSAW PACT ELECTRONIC WARFARE

The Soviets have a national doctrine, "radio electronic combat," which requires integrated electronic warfare, physical attacks on enemy command, control and communications (C^3), and the protection of their own C^3. In addition, their national concealment and deception doctrine stresses confusing enemy strategic and tactical information gathering systems. The Soviet Union/Warsaw Pact presents a massive communications, electronic surveillance, and weapon

system array across the NATO Northern and Central Regions. Concurrently, Soviet/Warsaw Pact electronic warfare (EW) units are fully integrated into the air and ground armies and naval forces. The overall picture which emerges from examination of the magnitude of the EW challenge is even more disquieting than a detailed listing of the threat. In order to degrade or negate this capability, the US must accelerate current efforts in the areas of joint employment concepts and doctrine, training, and equipment acquisition.

UNITED STATES ELECTRONIC WARFARE

The US concept of EW is being reoriented from self-protection and surveillance to use of EW as a weapon system, integrated with lethal weapons. Several actions are underway in this area. An Air-Land Forces Directorate composed of US Air Force Tactical Air Command and US Army Training and Doctrine Command EW experts has been established. The group has thoroughly reviewed US doctrine and the Soviet/Warsaw Pact threat to develop a Joint EW Procedures Manual. These procedures are undergoing test in JCS-sponsored exercises, and are being revised with use. In addition, the Joint EW Coordinating Group was established under a Joint Chiefs of Staff charter to provide a forum for progress on EW, with particular emphasis on joint employment.

Current lack of EW training realism stems not from a failure to appreciate its importance, but from the difficulty and costs involved. Nevertheless, the increase in emphasis on EW in exercises has been dramatic. This emphasis will continue in all JCS-sponsored exercises. EW training for overseas forces will be improved when the EW range in the United Kingdom becomes fully operational later this year, and when plans for the aircrew tactics training facility in central Europe are completed.

The continuing Red Flag exercises conducted by the US Air Force expose aircrews to the Soviet EW threat, and provide practice in tactics and equipment operations necessary to ensure mission success. The EW Close Air Support joint test scheduled for this year will be another step forward in providing a realistic environment to examine and test US concepts and technologies for countering the Soviet/Warsaw weapon systems.

US forces lack sufficient EW equipment. Although the technology to counter Soviet Union/Warsaw Pact capabilities is available, increased programming and budgetary support will be necessary to translate this technology into fielded capability in a reasonable time frame.

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UNITED STATES MILITARY POSTURE FOR FY 1979. STATEMENT BY GENERA--ETC(U)
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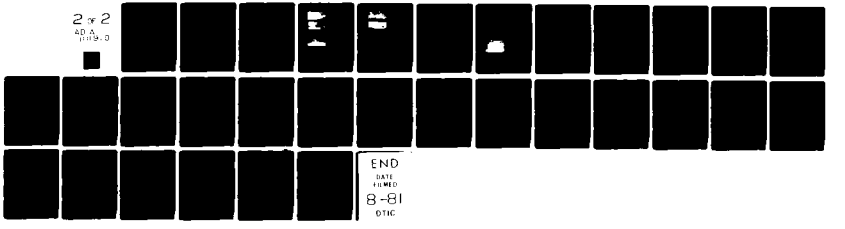


CHAPTER V: OTHER FACTORS INFLUENCING THE MILITARY BALANCE

LOGISTIC POSTURE

OVERVIEW

In the European theater, American resupply and reinforcement depend upon air and sea transport; geography permits the Soviets to rely primarily on a well developed road and rail system, supplemented by air and sea capabilities. An evaluation of logistical postures must therefore compare US intertheater movement capabilities with Soviet intratheater capabilities.

Although the USSR has land routes and shorter distances from their logistics bases to the battle area, the combat postures of both the United States and the USSR depend on large war reserves of equipment and commodities. These reserves allow the Soviet and United States forces to operate for a significant period until major resupply can be established. However, in event of war, current US stock deficiencies will cause early resupply requirements to compete with other movement and mobilization requirements.

USSR OPERATIONAL LOGISTICS

MATERIEL AND SUPPLY

Taking advantage of short lines of communication, the Soviets expect to respond quickly to combat logistical requirements. By pre-positioning stocks they have minimized the time needed for a wartime buildup.

Soviet stocks do not impose significant limitations on military planning.

In addition civilian POL reserves are at least as large as military reserves. If necessary these stocks could be allocated to the military.

TRANSPORT

Transport to the western front would be accomplished primarily by rail and motor, supplemented by inland waterways. The Council for Economic Mutual Assistance (CEMA) crude pipeline, from the Soviet/Polish border to East Germany and Czechoslovakia, could be converted to carry refined POL products. Within combat fronts, mobile pipeline brigades provide additional means for moving POL to field depots.

The major rail lines between the USSR border and East Germany and Czechoslovakia can transport large amounts of supplies in each direction. Secondary routes are available which would increase this capacity and provide flexibility.

Within the Soviet logistic system, motor transport is essential for moving supplies forward from railheads to field depots and combat units. Expanded motor transport requirements can be met from mobilized civilian reserves located in Poland, East Germany, Czechoslovakia, and in the western USSR.

A full buildup of Warsaw Pact forces against central Europe would place the heaviest strain on the line of communications.

MAINTENANCE

Soviet maintenance doctrine is in general use in all Warsaw Pact countries. Under the Soviet maintenance system, damaged equipment must be repaired and returned to the user at the lowest possible level, rather than be replaced. Therefore, mobile maintenance units are used to support combat units. The Soviet maintenance system also requires strict conservation of equipment. A large percentage of a unit's combat equipment is kept in storage, and even those vehicles not in storage are subject to strict usage limitations. Thus, the repair parts supply system is supporting an artificially low active vehicle inventory even by peacetime standards, which may cause problems when the system must support the full operation of the vehicle fleet.

The maintenance concept for the Soviet air force is to limit regimental-level aircraft maintenance to minor and medium maintenance functions, eliminating the need for extensive facilities, sophisticated equipment, and highly specialized personnel at base level. Major maintenance is performed at centralized aircraft maintenance and repair depots located throughout the Soviet Union.

The availability and resupply of repair parts in the Soviet logistic system is a weakness in peacetime and could become a serious problem in war.

PRC OPERATIONAL LOGISTICS

MATERIAL AND SUPPLY

The PRC maintains a war reserve. Stockpiles of supplies, ammunition, and POL are dispersed throughout the PRC.

TRANSPORT

Local self-sufficiency will not totally obviate the necessity for interregional transfer of supplies and troop reinforcement. Mobility is being gradually improved by new rail construction, additional double-tracking, limited electrification, expansion of critical rail yards, and modernization of rail equipment. The rail system, however, remains basically single-track, and most engines are steam operated.

Mobility has also been increased by a nationwide program of bituminous surfacing of highways, by doubling of the national truck inventory in the past five years, and by improvement of military truck quality through imports and new plants. Almost all trucks are 4-ton capacity or smaller, and few have cross country movement capability. The highway system, roughly comparable to the US network of the early 1920s, is being upgraded through elimination of fords and ferries and by improved engineering and paving.

A major conflict would severely test the PRC logistic system. Repeated air strikes on major depots and lines of communication could greatly hamper resupply efforts. Some supplies could be moved by militia elements and civilian organizations; however, the requirements of a major war probably would overwhelm such a rudimentary supply system. In any general war, rail and truck transport would be required to shoulder the major burden of reinforcement and supply. The army would probably experience severe shortages of critical items such as POL and sophisticated ordnance, thus constraining China's ability to engage the enemy in regular, large-scale operations for prolonged periods. Guerrilla and small-unit activities would be least affected by disruptions of supplies.

Any attempt to project combat power beyond China's borders would compound logistic difficulties. The slender logistic support system of the PRC ground forces would be hard pressed to fulfill resupply and maintenance requirements for any major operation outside China. Similarly, if Chinese aircraft began operating from captured airfields, supplying them with POL and ordnance would be a monumental undertaking. The PRC Navy is accustomed to operating in a coastal defense mode and has minimal requirements for extensive logistic support. But if the Navy ventured far from coastal bases, it would immediately face resupply problems.

UNITED STATES OPERATIONAL LOGISTICS

MATERIEL AND SUPPLY

To reduce movement times of early army reinforcing units, the United States has Prepositioning of Materiel Configured to Unit Sets (POMCUS) in the European theater. This materiel is pre-positioned for stateside units scheduled for deployment in the event of war:

- "REFORGER"--pre-positioned equipment for 2/3 of an infantry division (mechanized), an armored cavalry regiment, and 74 nondivisional combat, combat support, and combat service support units.
- "Two + Ten"--pre-positioned equipment for 2/3 each of an armored division and an infantry division (mechanized), and 10 nondivisional combat support/combat service support units.
- "MR LOGAEUR"--36 combat service support units to augment the operation of the wartime United Kingdom/BENELUX line of communication to the Federal Republic of Germany.
- Medical Augmentation--28 medical units.

A portion of the POMCUS package is issued each year during the REFORGER deployment to exercise the system.

Shortages of 5-ton trucks, armored personnel carriers, self-propelled medium artillery, TOW carriers and radio equipment limit the US capability to reinforce NATO rapidly.

By mid-1978, REFORGER and Two + Ten sets will be at a high level of fill except for certain key items. Recent increase in priority of POMCUS on the Department of the Army Master Priority List is resulting in more rapid fill of POMCUS.

Medical equipment for most of the medical augmentation units is in Europe, with the remainder programmed for FY 1978.

In addition to POMCUS, war reserve materiel stocks (WRMS) are pre-positioned in the European theater.

Shortages are being filled after the needs of higher priority claimants, such as forward deployed units, early deploying units (D + 30), and POMCUS are satisfied. War reserve deficiencies are expected to continue for some time. The Five-Year Defense Program contains provisions to rectify the WRMS deficiency.

War reserve air munitions include munitions pre-positioned overseas and in the United States, plus production capability.The major limiting factor is lack of sufficient storage capacity.

US Army, Europe, pre-positioned war reserve ground munitions do not satisfy the total requirement. The deficiency is attributed primarily to recently revised combat consumption rates, which reflect higher levels of firepower anticipated on the modern battlefield, and which increased the pre-positioned stockage objective. Although storage capacity is inadequate, current construction and leasing programs will increase the storage capacity and position the ammunition in the forward area.

The bulk petroleum requirement is calculated to sustain combat operations until resupply from CONUS can be established, plus a safety increment. USEUCOM inventories of bulk petroleum meet war reserve requirements, except for marine diesel and residual fuels used by ships, for which there are inadequate storage facilities in the theater. These deficiencies are not considered critical.

Shortages continue to exist in major items in the pre-positioned war reserves. Although the material posture of US forces in Europe continues to improve, serious deficiencies remain.

MAINTENANCE

In addition to shortages of war reserve materiel, shortages of construction materiel limit the capability for rapid repair of war damage and the development and augmentation of overseas bases included in major unified and specified command plans. An adequate capability exists for the support of minor contingencies.

A requirement still exists for additional aircraft spares for war readiness spares kits (WRSK) and base level self-sufficiency spares (BLSS). This year the WRSK/BLSS reflects the capability to surge the number of tactical fighter sorties in Europe. Shortages of Navy modernization, maintenance and test, measurement, and diagnostic equipment (TMDE), degrade readiness. Stock levels of Navy spare and repair parts have fallen below levels required for high readiness.

At the end of FY 1977, 41 naval ships were overdue for required overhaul and modernization. The FY 1978 program provides for the overhaul of 80 active fleet ships. An additional 22 ships will receive alterations to provide improvements in required operational capabilities. Completion of this program will reduce the FY 1978 overhaul backlog to 30 ships.

STRATEGIC MOBILITY

AIRLIFT

USSR AIRLIFT

The cargo-carrying capability of Soviet Military Transport Aviation (VTA) has almost doubled in the past ten years. VTA today consists of over 700 transport planes, of which about 85 percent are the AN-12BP CUB. The CUB, backbone of the VTA for 15 years, is a four-engine, medium-range turboprop with a maximum lift capability of 20 metric tons (MT). The largest transport, the AN-22 COCK, with a maximum payload of 80 MT, is the only aircraft with an outsize lift capacity capable of

CUB

COCK

carrying the T-62 tank. The COCK went out of production in 1974.

The newest VTA aircraft is the IL-76 CANDID, a four-engine, long-range turbofan jet with a maximum payload of 40 MT. The CANDID became operational in 1974.

The Soviet Civil Aeroflot aircraft available for military airlift include 1,300 medium and long-range aircraft which can provide intertheater support, thereby freeing military aircraft for tactical missions. Although limited by the lack of rear-loading cargo planes, Aeroflot could nevertheless increase military cargo airlift capability by 25 percent, and more than triple the personnel airlift capability. This personnel transport capability has been demonstrated during semiannual troop rotation of forces from the Soviet Union to Germany.

The growing capability and flexibility of both VTA and Aeroflot have been reflected in changes in Soviet doctrine and practice. The USSR is now more willing to employ airlift forces in support of foreign policy objectives, and to take up foreign policy objectives which require airlift to project a Soviet presence abroad. The 1973 airlift to the Middle East and the 1974-75 airlift to Angola are only the most obvious examples. The USSR has also used VTA aircraft to fly drought relief missions in Somalia, and Aeroflot aircraft to fly military supplies to Nigeria. More recently, the Soviet airlift to Aden and Ethiopia demonstrated an unprecedented flexibility, with almost daily shifting of flight routes to minimize the number of transports transiting any given country. With the expected future increases in Soviet airlift capabilities, we expect that the USSR will be even more able to employ those capabilities abroad.

PRC AIRLIFT

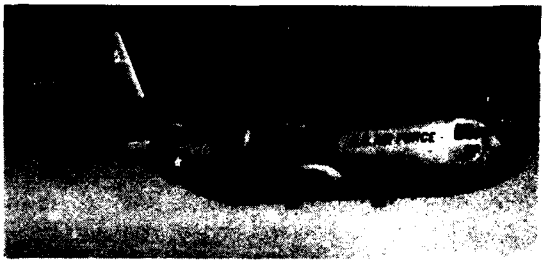
China's airlift capability is a serious weakness within the armed forces. Only half of the military and civil transport aircraft have a round-trip range of 500 nm. The small cargo and troop capacity of these aircraft would also hamper combat operations by requiring the use of a larger number of transports and a high sortie rate.

UNITED STATES AIRLIFT

The US active airlift force is composed of 70 C-5s, 234 C-141s, and 234 C-130s. The four squadrons of C-5s and the 13 squadrons of C-141s have an equal number of C-5 and C-141 reserve associate units which do not possess any aircraft. These associate units are collocated with the active force squadrons and participate in the operation and maintenance of the active force aircraft. This arrangement has the potential for surging the airlift system to heights never before attempted. The Air Force Reserve has been unable to attract sufficient airlift system recruits to reach this potential surge capability. Active duty personnel throughout the Air Force are being identified to help fill this gap while recruiting efforts are being stepped up.

The Reserve and Air National Guard currently possess an additional 368 tactical airlift aircraft. These planes have various cargo-carrying capacities. Bulk cargo, such as ammunition and rations, can be transported in any military or

C-141



C-130

civilian cargo aircraft. C-5s, C-141s, C-130s and wide-bodied Civil Reserve Air Fleet aircraft (CRAF) are capable of carrying oversize cargo, which includes such items as 2½ ton trucks and 155 mm howitzers (towed). Any cargo that is too large to be transported by a C-141 is considered outsize, and must be transported by C-5s if it is to go by air. Examples are CH-47 CHINOOK helicopters, self-propelled artillery, and M-60 tanks. There are some items of equipment which cannot be transported by air, such as heavy cranes. The capability to airlift passengers and bulk cargo, but not outsized cargo, can be augmented by the US CRAF aircraft.

The number of long-range commercial aircraft in the CRAF program this year includes about 128 cargo and 99 passenger aircraft. The actual number allocated would depend on the extent and urgency of non-defense needs. Although the number of cargo aircraft has decreased from 135 to 128 as civil air carriers are replacing older, narrow-bodied aircraft with wide-bodied aircraft, the overall lift capability has remained relatively constant. Of these 128 cargo aircraft, only 34 (21 747s and 13 DC-10s) are wide-bodied aircraft; and of these 34, only 19 are pure freighter aircraft. The remaining 15 are passenger-to-cargo-convertible aircraft. The number of wide-bodied aircraft is projected to increase to 39 by June 1978. The US civil passenger aircraft allocated to CRAF are sufficient to move all personnel anywhere our national strategy required. However, by the end of FY 1982, CRAF passenger aircraft will be insufficient. Although the number of wide-bodied aircraft in the US civil aircraft inventory is increasing, the increase in cargo-lift capability is negligible as narrow-bodied aircraft are being sold or leased to foreign countries and are, therefore, not available under the CRAF program. We have several programs whose purposes are to provide for the modification of existing civil and military aircraft to increase their lift capability.

As a result of our initiatives involving the addition of cargo nose or side doors to the 747 and DC-10 aircraft, the civil air carriers have offered 87 aircraft. We have received funding to modify one of these aircraft as a prototype. We continue to view this as the most useful and cost-effective method for expanding the airlift mobility force. Our NATO allies are considering the possibility of a similar program and are monitoring our progress closely.

In this regard, the North Atlantic Council, in June 1977, concurred in SACEUR's Rapid Reinforcement Concept (RRC). The NATO Senior Civil Emergency Planning Committee (SCEPC) has initiated action to determine availability of European Civil Aircraft, national arrangements required to ensure availability of these aircraft prior to execution of full emergency powers, and peacetime modifications to civil aircraft to enable them to support military operations.

Transit and overflight rights remain a most serious weakness in our strategic mobility capability. We must develop a degree of operational independence and flexibility beyond 3,300 nautical miles. The C-141 is "cube limited." NATO reinforcement load planning studies conducted this year show that the C-141 is "cubed out" generally before we obtain maximum payload capabilities of the aircraft. This is particularly evident in the movement of tactical air units where we are able to achieve an average payload of only 16 short tons. The C-141 has a maximum payload capability of about 32 tons. Progress is being made in overcoming these limitations.

The prototype program for stretching the C-141 and for providing in-flight refueling capability was completed below projected costs with excellent technical results. Flight test data have shown improved handling characteristics over the unmodified aircraft. Extensive service life analyses concluded that the modification would not degrade the 45,000-hour aircraft life. This modification will increase the cargo space of the C-141 by one-third, and will enhance organic airlift capability out to the turn of the century, without increased operating costs.

Preservation of the C-5 with its unique outsize capability is a most pressing need. Without its capabilities, we cannot air deploy complete fighting units. The aircraft wing modification program, designed to increase the aircraft's useful life from 8,000 to 30,000 hours, is progressing satisfactorily. The wing design effort is on schedule for completion during June 1978. Continuing progress in this program is essential if we are to have full mobility for our fighting forces and the ability to provide our national decisionmakers needed options for flexibility. The tanker capability inherent in our existing KC-135 force is well short of that needed to provide mobility independence on a global basis. While we plan to extend the service life of the KC-135s, the capabilities of existing wide-bodied commercial jet aircraft are unique when applied to military mobility requirements. During the past year, we completed our evaluation of the B-747 and DC-10 as potential advanced tanker/cargo aircraft, or ATCA. The DC-10 was selected. Initial procurement will begin, using fiscal 1977 appropriated funds. The ATCA will reduce our dependence on en route support and overseas bases in the deployment and logistical support of general purpose forces. An advanced tanker is the key to strategic mobility on a global basis with minimum dependence on offshore support. The ATCA will be used to air refuel our existing strategic airlift, tactical fighter, and strategic bomber aircraft and provide us with a degree of operational freedom for mobility requirements regardless of offshore support circumstances.

Our tactical airlift modernization program continues to be on schedule. The prototype program for the Advanced Medium STOL Transport (AMST) was completed during August 1977. The prototype program demonstrated current technology; confirmed the feasibility of a modernized tactical transport with the characteristics of improved lift capacities and short-field performance; and provided visibility on cost. A DSARC II, the decision process to enter into engineering development, is scheduled for the second quarter of FY 1978. The current force is aging and will begin reaching the end of its service life in the early 1980s. The Army has modernized its forces with equipment which is beyond the size and weight limits of our existing C-7, C-123, and C-130 aircraft. The AMST is vital to enable airlift to keep pace with evolving Army mission requirements. Two specific things desired in the improved tactical air transport are an aircraft able to take advantage of more airfields (that is, having shorter landing and takeoff capabilities) and an aircraft capable of moving all items currently in the Army inventory.

A major milestone in assuring the responsiveness of our mobility forces to the national command authority was accomplished with specified command status for the Air Force's Military Airlift Command. This arrangement streamlines the wartime chain of command and makes airlift resources directly responsive to the decisionmaking authority.

Serious deficiencies exist in US cargo airlift capacity. The United States must develop greater operational independence and flexibility.

SEALIFT

Airlift can provide immediate reinforcement and limited resupply capability. However, sealift is the only practical means for providing long-term logistics support in quantity.

USSR SEALIFT

As of 1 July 1977, the Soviet oceangoing merchant fleet consisted of 1,717 ships (1,000 gross registered tons and above) aggregating nearly 16.8 million deadweight tons (DWT). This fleet ranks fifth in number of ships and ninth in deadweight tonnage among the merchant fleets of the world. Nearly 1,000 of the USSR cargo-type ships are

considered potentially capable of providing military logistics support.

Although a large percentage of new Soviet ships under construction is of general cargo type, emphasis has recently been placed on roll-on/roll-off (RO/RO) ships. The Soviets began employing the RO/RO in military arms trade in early 1975. They presently have 25 RO/RO vessels in their inventory. RO/RO ships reduce cargo-handling time as much as 75 percent and provide anonymity for most cargoes. Additionally, they are more adaptable to the shipment of military equipment, and require no specialized port equipment. Furthermore, the Soviet Union has two Seabee barge carriers on order from Finnish shipbuilders which will be capable of loading or unloading barges via a stern elevator. These units will significantly increase the overall Soviet military logistic support capability.

ROLL-ON/ROLL-OFF SHIP

Major limitations to Soviet sealift operations are restricted movement through non-Warsaw Pact controlled straits, winter ice conditions, and limited automated port facilities.

PRC SEALIFT

The PRC international merchant fleet is capable of providing substantial logistic support and troop lift. As of 1 October 1977, the PRC merchant fleet numbered 610 ships (1,000 DWT and upward).

This merchant fleet is augmented by a significant number of smaller ships engaged in coastal and inland waterway service and 300,000 to 400,000 junks.

UNITED STATES SEALIFT

Military Sealift Command (MSC) currently has 53 ships in the MSC-controlled Fleet; 6 cargo ships and 21 tankers under direct ownership, and 21 cargo ships and 5 tankers under charter. The MSC maintains about five of these ships in a Reduced Operating Status. This Navy-funded program maintains in readiness ships not continually in use, so they can be placed on-berth on 10 days' notice.

The Sealift Readiness Program (SRP) provides for the acquisition of US dry cargo merchant ships under crisis conditions short of mobilization. Ships are contractually committed for DOD use in contingencies if called up jointly by the Secretaries of Commerce and Defense. Commitment of ships is a prerequisite to sharing in peacetime DOD cargo lift contracts, and requires companies to make 20 percent of committed ships available in 10 days, an additional 30 percent available in 30 days, and the remaining 50 percent in 60 days. Currently this program includes 120 ships. Tankers are not included in the SRP, which provides for the acquisition of dry cargo ships only.

The National Defense Reserve Fleet comprises preserved merchant and ex-Navy ships maintained by the Maritime Administration. Included in this fleet are 129 VICTORY ships and 9 SEATRAIN ships which have been identified for reactivation and use in a strategic mobility sealift role. All of these ships are old.

The Department of Commerce and the Department of the Navy established the Ready Reserve Force (RRF) as an element of the NDRF. Ships are placed in the RRF after being upgraded through a four-phase plan that provides a dedicated fleet which can be placed on-berth within 5 to 10 days of call-up. The RRF comprises five C3-type ships, one VICTORY ship, and two SEATRAIN ships. In FY 1978, three more SEATRAINs will be placed in the RRF. By FY 1981 there will be about 25 ships in the force; optimum ship mix is under study. The authority of the Maritime Administration to activate ships in the NDRF and operate them as the

National Shipping Authority for the account of the Department of Defense will end with the present state of national emergency on 14 September 1978.

In the event of mobilization, additional sealift assets would be available from the merchant fleet, NATO shipping and the Effective US Controlled Fleet (EUSC).

There are 304 dry cargo ships and 234 tankers in the US merchant fleet today; 291 of the dry cargo ships and 215 of the tankers are considered suitable for carrying military equipment, supplies, and POL. Upon mobilization, all of the 291 dry cargo ships and 215 tankers would be available.

There are 64 merchant ships under construction in American shipyards--specifically, 41 tankers, 5 intermodal ships, 5 breakbulk cargo ships, 8 dry bulk ships and 5 miscellaneous ships.

Procedures have been established to make NATO shipping available for the reinforcement of Europe in the event of a NATO war. Six of the NATO member governments now have powers to take control of oceangoing shipping during pre-hostilities mobilization; the remainder have take-over powers when hostilities begin. There are about 4,000 NATO dry cargo ships which could be used for reinforcement. Negotiations are currently being conducted to have up to 600 ships earmarked for US support from the day of mobilization.

The United States also plans for the utilization of foreign flag ships of the EUSC fleet. These are US-owned or US-controlled ships of foreign registry of 1,000 gross tons or more, under contract to the Maritime Administration, which can reasonably be expected to be made available for US use in time of emergency. Although there are approximately 472 ships currently in this category, only 10 dry cargo ship and 130 tankers are desirable for military use.

Peacetime sealift, administered by the MSC, must be augmented in varying degrees by civilian shipping to support contingency operations. In event of mobilization, all US merchant shipping can be requisitioned and, when augmented by NATO merchant shipping, is expected to meet anticipated requirements.

In a non-mobilization situation, sealift resources will be provided from a number of sources and programs.

INDUSTRIAL PREPAREDNESS

USSR PRODUCTION

In general, production of weapon systems in 1977 approximated 1976 production, and is not expected to change significantly next year.

Expansion of the Soviet defense production base is continuing. The Soviets are still attempting to maintain a balance between plants producing strategic weapons, defensive weapons, and tactical weapons.

Soviet aircraft production in 1977 remained high and approximated the impressive levels of the previous year. The USSR continues to improve the design of selected aircraft, such as the FLOGGER and FITTER, in an overall effort to upgrade its inventory.

Production of the T-72 tank increased significantly over last year.

Soviet naval strength is, for the most part, a result of Soviet ship production. All submarines, surface combatants, and minesweepers are domestically built. About half of the auxiliaries and most of the amphibious units have been imported from Warsaw Pact countries. Soviet yards are not only the prime builders of the naval fleet, but are also the prime repairers of naval units.

Although the number of naval units produced has decreased, the overall tonnage of the units has increased considerably.

Because the Soviets have dedicated more resources to shipbuilding than ship repairing, the growth of their naval, merchant, and fishing fleets has placed a considerable burden on existing repair facilities. A partial solution to this problem has been the construction of new repair yards, expansion of older yards, and, when necessary, repair of ships in foreign yards.

The Soviet ammunition industry has not grown appreciably in terms of total production floor-

space, but new loading facilities have improved logistical support to Soviet forces.

The USSR has the ability to increase its output of military weapons significantly under mobilization conditions. This capacity can be characterized as a warm industrial base, in that all known facilities currently manufacture materiel.

PRC PRODUCTION

At present, the PRC economy has a small but growing industrial sector. In terms of floor space, the facilities appear to be larger than needed to support present modest rates of output. The Chinese have probably constructed these plants for greater production in the future when present competing demands on resources, a shortage of scientific personnel, and technological constraints have been overcome.

PRC weapons production in 1977 remained at approximately the same levels as in 1976. Production levels for a number of weapon systems are still below the peak levels of 1971. This may reflect a shifting of resources into the development of more advanced indigenous weapon systems. The Chinese have been engaged in a broad based program since about the mid-1960s to expand and modify their military R&D and production facilities. The major areas of growth have been the aerospace and army materiel industries.

Most PRC materiel is based on Soviet technology of the 1940s and 1950s; however, the Chinese are acquiring selected western weapons technology that may lead to the production of more modern equipment.

In aircraft production, output has declined. The Chinese may have concluded that it is no longer practical to produce the older fighters in significant quantities and are emphasizing the development of new aircraft.

The PRC is presently producing a variety of tactical and strategic missile systems ranging from surface-to-air missiles to intercontinental ballistic missiles.

Production of merchant cargo ships, tankers, and naval units has increased, reflecting an improved PRC shipbuilding capability. Still, maritime production lags far behind shipyard capacity. As shipbuilding techniques improve, skilled labor increases, and materials such as shipbuilding steel, marine diesel engines, and other components become more readily available, production should show corresponding increases.

The PRC has the ability to increase significantly its output of military weapons under mobilization conditions.

Barring a major economic or political upheaval, the PRC should be able to sustain its gradual peacetime modernization efforts and its present levels of military production.

UNITED STATES PRODUCTION

US production rates are not equal to Soviet rates.

While the current production schedule can be considered a warm base, certain constraints, such as the production of aircraft components, limit the extent to which production could expand within a reasonable time. The number of foundries available to cast tank hulls and turrets is likewise a limiting factor in increasing tank production to meet mobilization needs.

The defense guidance for a NATO conventional conflict emphasizes assuring an adequate defense during the initial phase of a war and prescribes that the United States and its allies be capable of fighting as long as the Soviet Union and its allies have the will to fight. The primary emphasis for planning is on providing a high level of force readiness on D-day and full logistic support of combat forces during the first months of conflict. As a hedge against a long duration conflict, the industrial base must have the capability of accelerating the production of combat materiel.

The US logistic sustaining capability is composed principally of war reserve materiel stocks and the production capability of the industrial base. At present, war reserve materiel stocks do not completely satisfy initial combat attrition requirements.

There is also reason for concern about the capability of the industrial base to provide a timely response to a NATO conflict, even with a declaration of national emergency. Modern weapon

systems have greatly lengthened production lead-times. Further, the production times associated with consumable items such as electrical components, have increased significantly.

Sustaining capability is further strained by the materiel and ammunition requirements of the Reserve and National Guard units which would be called to active duty to reinforce deployed forces.

Self-sufficiency for production of military items continues to diminish. Foreign sources provide large quantities of such items as fasteners, rubber footwear, precision small bearings, integrated electronic circuits and medical instruments.

Several corrective actions are underway. The Services are attempting to streamline procedures and eliminate bottlenecks in the industrial base. Surge capability of selected weapon systems is under study, as are the sustaining capability of NATO and Warsaw Pact forces, and US dependency on foreign supply sources. Modernization of government-owned arsenals and ammunition plants is underway. With respect to ammunition production, stockpiling of raw materials and long lead-time components, retention of a minimum number of skilled personnel, and methods to reduce lead times, are being considered to improve production base responsiveness.

Recovery of the US industrial base, in event of nuclear attack, deserves careful attention. The current US Civil Defense program includes the provision for population protection, but does not include provision for the protection of industry. To assess the relative effectiveness of the US and Soviet programs, a comparative post-war recovery analysis has been initiated by the Joint Chiefs of Staff.

TECHNOLOGY TRANSFER

The control of design and manufacturing know-how is essential to the maintenance of technological superiority. The exportation of products and technology promotes economic growth; however, a considerable portion of US technology has military security relevance.

The Soviet Union seeks to narrow the technological gap with the United States by importing technology. The inherent openness of the US scientific community assists their efforts. The relaxation of visit and exchange policies during the early 1970s opened the door for the Soviets to explore the technological base of the United States. In 1975, approximately 5,380 Soviet personnel visited the United States. Their itineraries were not closely monitored, so the amount and nature of information they obtained is not fully known. Bilateral cooperative agreements between Soviet and US scientific and economic communities provide another channel for transfer of information. Approximately 57 US companies have signed cooperative agreements with the Soviet Union. In seeking US proposals for cooperative projects or systems, the Soviet Union requires more detailed information than other western customers. For example, the Soviet Union received what amounted to over $300 million worth of new automotive and foundry technology from at least 20 US firms for the Kama River Truck Plant. Although actual construction of the facility is being done by the Soviets, US companies supervised the installation of equipment. Construction of this new plant will significantly increase their military truck production capability. In addition, the Soviets have acquired western automation and air traffic control systems which could enhance their air defense capabilities.

Technology can also be obtained from US companies overseas, and technological information passed to friendly nations may subsequently be provided to the Soviet Union.

While the efforts of the Soviet Union to acquire US technology are extensive, the efforts of the PRC, in comparison, are diminutive. Advanced technological transfers would very likely have only moderate impact on PRC military capabilities in the short term. Immediate value would be limited by: the limited pool of highly trained scientists and technicians; competing demands for available resources; the time required to convert technology into production; and the time required to train personnel to operate more sophisticated equipment.

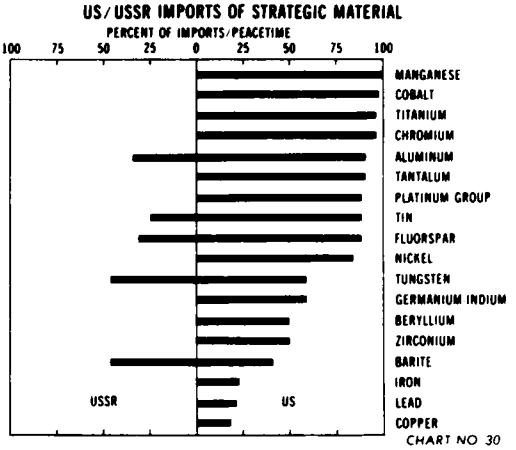
However, new technology could significantly enhance the PRC's military capabilities in the longer term; and the PRC is taking steps to acquire that technology to help compensate for weakness in indigenous technology--for instance, the purchase of the Rolls Royce Spey jet engines. Moreover, China is purchasing manufacturing technology and machinery from other countries, but avoiding substantial dependence on any one supplier. Since 1970, China has contracted to purchase large volumes of machinery, scientific instruments, specialized metals, and turnkey factories.

Foreign technology acquisitions could help cut development time and decrease research requirements and costs of advanced weapon systems, but the PRC is likely to continue to be selective in importing advanced military-related technology, concentrating on imports which have both military and civilian applications. Among these are metallurgy, electronics, communications, manufacturing, and computer technology. Significant purchases in these areas could have a long term impact on correcting deficiencies in engine, airframe, armored vehicles and missile R&D and production.

NATURAL RESOURCES

Peacetime US and Soviet dependency upon selected imported critical raw materials--i.e., materials considered essential for modern industrial operation--is depicted on Chart 30. The United States relies heavily on imports, and will be more dependent on the upgraded forms of these resources in the next decade. Europe and Japan are even more dependent on imported materials, and are more dependent on fewer suppliers than the United States. With a strong national policy of self-sufficiency and its largely untapped natural resource base, the USSR is expected to move closer to self-sufficiency.

In the event of conflict, the national reserves of the USSR and the US stockpile of strategic and critical materials would help to compensate for interrupted foreign supplies. The USSR would be nearly self-sufficient while the United States would still require imports of several materials.



During a conflict, western European nations would depend heavily on imports, since none of them has a national stockpile system.

The PRC is a prominent factor in global strategic resources, producing several important industrial materials and controlling 70 percent of the world's tungsten reserves. To expand its industrial base significantly, however, the PRC must compete on world markets for supplies of chromium, nickel, copper, lead, and zinc. The PRC has been purchasing considerable quantities of these materials.

RESEARCH AND DEVELOPMENT

USSR RESEARCH AND DEVELOPMENT

Military R&D receives regular large infusions of capital investment and foreign equipment, the most highly qualified science and engineering graduates, and the management and guidance efforts of the country's elite.

The Soviet Union continues to grant top priority to the training of engineers. In 1976 more than 260,000 engineers were graduated, an increase of more than 160 percent since 1960. Seventy percent of the engineers are graduated in fields applicable to military R&D, indicative of the large pool of trained personnel available for defense-related R&D.

In 1976, the Soviets awarded an estimated 32,000 candidate degrees, roughly the equivalent to the US PhD. Approximately 80 percent of the candidate degrees were conferred in natural sciences and engineering disciplines. Over 800,000 scientists and engineers are now estimated to be engaged full time in R&D.

The Scientific Research Institutes (NIIs) and their branches provide the greatest part of Soviet theoretical and applied research. There are over 2,800 NIIs, including social science and humanities research institutes. Of this total, 80 to 90 percent are performing research in the natural sciences and engineering. Additional growth in the R&D establishment probably will occur through the expansion of existing facilities rather than through the creation of new institutes.

Sustained expansion of research, design and test facilities, extensive prototyping, and program continuity characterize the Soviet defense R&D sector, to the benefit of Soviet ballistic missile and space development programs, and other militarily important sectors, such as the aircraft industry.

The continuous development of new systems illustrates the magnitude, continuity, priority, and to a degree, the effectiveness of the Soviet military-related R&D effort. In the past 20 years, the Soviets have brought into service many strategic ballistic missiles. The development of ballistic missiles probably has the highest priority in the Soviet military R&D system. The high level of space launch activity, plus the continued development of new spacecraft, points to continued Soviet emphasis on space.

The Soviet aviation industry has shown a similar development pattern, a pattern likely to continue during the next decade.

Soviet naval R&D is also noteworthy. In the coming decade, more than a dozen new classes of major ships are expected to become operational. Emphasis will probably also continue on improving ASW capabilities.

The extensive Soviet effort in ground force weapons-related R&D has resulted in a significant increase in the effectiveness of the weapons and material.

Sustained research efforts in such areas as material· propulsion, electronics, manufacturing technologies and electro-optics have made advances in weapon systems possible. Advanced technologies, necessary to support in high priority development areas are receiving increasing emphasis. Research in the physical and life sciences is also receiving a high level of attention.

Nuclear weapons development has grown steadily; priority has been on strategic attack forces. Increases in numbers of Soviet missile-delivered warheads reflect the development of recently tested MRV and MIRV warheads.

PRC RESEARCH AND DEVELOPMENT

Although the PRC is years behind the US in technology, substantial progress is being made. A modest level of technology imports allows China a certain amount of "catch up", both industrially and militarily, but it is insufficient to overtake the US or the USSR in the foreseeable future. Shortcomings, while significant, will not prevent the PRC from developing a formidable nuclear arsenal. The PRC currently have a variety of strategic systems--dispersed, and with some mobile weapons.

China's activities in some high technology areas, particularly the aerospace sector, indicate that the PRC is working toward technological independence. The growth trends in their technological base attest to the PRC program to expand their weapon systems.

The PRC aerospace design capability has continued to expand during the 1970s to create the opportunity for future development of high-performance, complex ballistic missiles and advanced aerodynamics systems. Shortage of engineers and scientists capable of independent research remains a problem. Even if concentrated on the development of aerodynamic and ballistic missile systems and nuclear weapons, skilled human resources would be stretched thin. Through effective management of their manpower resources, however, the Chinese can make progress in priority development areas.

UNITED STATES RESEARCH AND DEVELOPMENT

Science and technology have been among the principal factors in continued overall US military superiority.

DEFENSE SYSTEMS AND TECHNOLOGIES

Since a research and development breakthrough in strategic defense could conceivably alter the balance of power, long range US R&D is planned to keep pace in defensive technologies and to maintain a hedge against the threat evolution in surveillance and warning, ballistic missile defense, atmospheric defense, and space defense. For missile warning and surveillance, US R&D is investigating the feasibility of advanced sensors, such as sophisticated and highly capable space-based detectors. Development is proceeding on techniques to integrate missile attack data from several space and ground based sensors, in order to provide the clearest possible attack assessment.

The US ballistic missile defense R&D program consists of two separate but closely-related elements--the Advanced Technology Program and the Systems Technology Program. New technologies are being investigated for application to BMD and critical BMD problems are being addressed in a systems context. Both aspects are essential to the overall goals of avoiding technological surprise by the Soviet Union and maintaining the capability to develop and deploy responsively an effective BMD system, if required, in the future.

In space surveillance, advanced ground based radars and optical sensors are being developed, as are satellite-borne sensors which will reduce needs for foreign basing. Development also continues on command and control facilities and software to integrate data on foreign space launches with data on operating satellites to provide warning of satellite attack on US satellites.

For bomber warning, development continues on the over-the-horizon radar, and technologies for unattended or minimally attended air surveillance radars and advanced signal processing.

Defense against the growing bomber threat is enhanced by a broad based R&D program including advanced airborne passive fire control techniques, beyond-visual-range identification, and advanced air-to-air missiles.

Space defense capabilities are also planned.

OFFENSIVE SYSTEMS AND TECHNOLOGIES

The quality of the US strategic TRIAD is of critical importance to maintaining strategic nuclear equivalence with the USSR in the early 1980s.

Since deployment of the MINUTEMAN III, the US strategic missile R&D program has stressed critical system technology, such as guidance and control, propulsion, reentry systems, nuclear effects and, most recently, basing modes. These improvements are specifically directed at maintaining and, if necessary, increasing the overall ICBM effectiveness by enhancing system performance. Increased accuracy, higher yield/weight ratio reentry systems, survivability, and greater range/throw-weight capability are being developed.

Funds for continuing advanced development of the MX are included in the President's FY 1979 budget request. With an initial operational capability of 1987 as a baseline, substantial numbers of boosters would not be available until the late 1980s.

The Navy is developing a MK 500 EVADER maneuvering re-entry vehicle which will be compatible with the TRIDENT I missile. The MK 500 EVADER will be capable of performing evasive maneuver during atmospheric reentry to provide better penetration of defensive systems. An advanced development program will be conducted, through flight testing, but engineering development and deployment will not proceed unless new Soviet capabilities indicate a need.

TRIDENT II missile concept formulation started this year. TRIDENT II is required to increase the flexibility of the US strategic deterrent. It will provide a survivable, larger throw-weight, more accurate SLBM in the 1980s, which will ensure a redundant retaliatory capability against all types of targets.

The Services are actively pursuing cruise missile research and development. Microminiaturization

of avionics, small engine technology and smaller sized warheads with bigger yields promise cost-effective strategic and tactical applications. Technical advances in aerodynamics, materials, structures, propulsion, guidance, and command and control must be achieved in order to realize maximum potential of the cruise missile. Research and development could permit a reduction in missile weight of 25 percent while retaining and even enhancing performance characteristics and operational flexibility. The benefits of weight reduction are: longer range for a given vehicle size; more volume and payload for advanced electronics; smarter missiles; and more cruise missiles per carrier.

Army R&D is focusing on fielding a new generation of combat hardware that will reverse the growing Soviet qualitative advantage in ground combat weaponry. Within the next five years many significant items of combat equipment in active Army units will be replaced. The XM-1 tank is estimated to be superior to its Soviet T-72 counterpart in ballistic protection, mobility and firepower. In combination with the Advanced Attack Helicopter with its HELLFIRE antitank missile, and the TOW antitank missile, the XM-1 should provide a substantial increase in the tank-killing firepower required in Europe. The COPPERHEAD, a cannon launched, laser homing artillery projectile, will provide the artillery with a first-round tank killing capability.

In air defenses, the PATRIOT missile system has had a successful test program, and the Army has initiated a program acceleration. It will handle the long range, mid to high altitude air threat, while two other systems, STINGER and ROLAND, will attack aircraft from treetop level to medium altitudes.

A new division air defense gun to augment the Army's missile systems will soon be selected from a variety of existing US and European weapons.

Intense firepower, essential in the early hours of major conflict, will be supplied by a new General Support Rocket System, a submunition-dispensing rocket launched in multiples from pods which are mounted on a tracked vehicle. PERSHING II, a modification of the basic PERSHING 1A missile, will be capable of delivering nuclear and nonnuclear warheads with pinpoint accuracy at ranges out to 400 miles.

Two new projectile locating radars, the AN/TPQ-36 mortar locating and the AN/TPQ-37 artillery locating radars, when coupled with TACFIRE and other Army systems, will permit rapid counterfire on enemy artillery and mortar batteries.

The Stand-Off Target Acquisition System (SOTAS), which has proven successful in detecting and identifying deep enemy targets, provides target information to LANCE, PERSHING and nuclear and conventional artillery firing units.

The Navy's principal efforts in conventional warfare research and development include tactical aircraft; antiship cruise missiles; advance naval vehicles, such as the air cushion vehicle; and vertical/short takeoff and landing (V/STOL) concepts.

Air cushion vehicles are particularly suited as amphibious landing craft. When introduced into the fleet, the Landing Craft Air Cushion (LCAC) will increase the capability of US amphibious forces while allowing major amphibious ships to remain at a safe distance offshore.

Successful completion of the V/STOL aircraft effort will allow the Navy to reduce the size and cost of the aircraft carrier without a reduction in operational capabilities. In addition, it will provide an air capability to other combatants and support ships.

Also of importance are improved capability to detect, track and destroy hostile submarines, the development of advanced missile systems, mine warfare and command and control capabilities for strategic nuclear forces.

AEROSPACE SYSTEMS AND TECHNOLOGIES

Four basic areas of research and development are of primary interest to the Air Force: defense suppression systems; close air support armament systems; air superiority systems; and technological

improvements in munitions accuracy and all-weather operations.

There has been a significant increase in the use of, and dependency on, US military space systems in crises and conflicts. Likewise, the Soviet Union's use of space is increasing and could constitute a significant future threat to US Forces. For example, the Soviet Union possesses an anti-satellite capability. Air Force research and development plans take into account current and future Soviet offensive space capabilities.

Space defense efforts are being expanded from technology oriented activities to the development of prototype demonstrations and operational systems.

Four major areas of increased emphasis are satellite attack warning, space defense, survivability of space assets, and command and control.

Under satellite attack warning, current efforts emphasize development and deployment of SPACETRACK sensors to warn of attack on critical US military satellites. Improved survivability of US satellites is being pursued. The command and control capability at NORAD will provide a single reporting authority for the military situation in space and recommend and direct responses to an attack. The Navy is modernizing its space surveillance system to assist in this effort.

Other space systems will also be designed to increase US capabilities. For example, space systems using advanced sensors to improve missile warning and targeting of enemy naval forces by ocean surveillance satellites. Follow-on satellites will measure weather and oceanographic parameters and provide information to improve support for commanders of strategic and tactical forces.

The exploitation of laser technology in future space systems is also being considered. Spaceborne lasers could greatly expand communications and satellite tracking capabilities.

The Air Force is participating with NASA in the development of the Space Transportation System, or Space Shuttle. The Shuttle will provide the DOD significantly improved space booster capabilities. This increased capability will allow satellites to be made harder and more maneuverable, and to include greater redundancy of critical systems. These improvements add weight that cannot be handled by existing launch vehicles. Manned space operations promise to make even more effective today's space capabilities. The Shuttle will allow the United States to put large systems, such as a space laser, into orbit, as well as other systems requiring very large antennas.

TECHNOLOGY BASE

The technology base, much of which is basic or exploratory in nature, is a national asset and an investment in the future. The science and technology available to the country from universities, government agencies and industry provide basic scientific knowledge and the engineering know-how to sustain technological strength.

The Department of Defense has invested heavily in technology during this period and has drawn upon the technology base in improving the performance of its systems. Research and exploratory development are funded at a level of effort, and the question, "How much is enough?" is never quite answered satisfactorily for a particular budget year.

READINESS

UNITED STATES READINESS

The readiness of forces must be evaluated in terms of unit readiness and force operational readiness. Unit readiness describes the capability of an organization to accomplish its combat mission assuming that it can be transported to a theater of operations and be sustained once it enters combat. Force operational readiness describes the ability of the Services to assemble, deploy, fight and sustain their forces in combat.

Resource levels are insufficient to allow all elements of the Army to be authorized full wartime levels of personnel and equipment. Authorization levels are based upon the priority of a unit's mission and projected employment. Reserve component divisions, for example, will

deploy after the active divisions. They are authorized to maintain a C-3 (less than fully combat-ready) readiness status. Between mobilization and availability of strategic lift, their readiness will increase as additional personnel and equipment are received and intensive training is conducted.

The overall level of readiness of US general purpose units has continued to improve throughout the past year. The 13 active US Army and three US Marine Corps divisions have remained in the fully or substantially ready for combat category, and the three newly activated US Army divisions are meeting, or are slightly ahead of, planned readiness goals. In the reserve components, the Marine division is now substantially ready for combat. However, the overall status of US Army reserve component divisions has declined. This degradation is primarily attributable to the increasing difficulty in recruiting qualified personnel for reserve units.

The status of US Navy major surface combatants is steadily improving. Additionally, the backlog of ships in deferred overhaul status is being reduced and, if programmed funding support is continued, this backlog should be eliminated in the early 1980s.

The readiness of US tactical air squadrons has remained essentially stable. As supply support for newly introduced aircraft improves, the number of marginally or not ready squadrons will be reduced.

In high intensity warfare, as might be expected at the onset of war in Europe, early combat power and sustaining stocks of ammunition and major end items immediately available could be critical to the outcome of the conflict.

Considerable progress has been made in improving the Army's readiness to provide early combat power. Three new divisions are expected to become deployable in 1978; the posture of combat units now deployed in Europe has been strengthened; new training concepts geared to the modern battlefield have been adopted and new combat equipment has been provided. Other programs also contribute to early combat power. These programs may require some tradeoffs between unit readiness and force readiness, since their accomplishment will require CONUS units to operate at reduced equipment levels. Additional improvements in personnel, equipment and deployment capabilities are required.

The addition of three divisions to the active Army was accomplished by cutting the active force support structure. Reliance on reserve component support units thereby increased significantly. Maintenance of adequate strength in reserve component units, as well as in the Individual Ready Reserve (IRR) pool, is essential if the Army is to have the necessary sustaining units and personnel replacements.

Navy fleet readiness improved over last year. The fleet is capable of performing its major missions and of executing and supporting general war and most contingency plans.

Areas of improvement in the last year are personnel, antisubmarine warfare (ASW) and air warfare. Specifically, the number and quality of personnel in ships and aircraft squadrons improved as the Fleet Readiness Improvement Program continued to focus on fleet manning deficiencies. Utilization of transiting submarines for training air, surface and submarine units has resulted in increased ASW readiness. Continued introduction and deployment of F-14, S-3A, P-3C, A-6E, and A-7E aircraft have afforded a steady improvement in the air warfare mission area.

Despite improvements, many problem areas continue to degrade readiness: austere ship operating tempo and aircraft flying hour programs; inadequate force levels; petty officer shortages; deferred maintenance of ships and aircraft; inadequate supply support; munitions shortages; secure voice equipment shortages; and bulk POL inventory and storage deficiencies.

The Air Force has made significant progress toward increased combat readiness in the past year. NATO combat capability has been bolstered by the introduction of the F-15 and the positioning of additional F-4 and F-111 squadrons in Europe. Future deployment of the A-10 will further improve NATO force posture. The introduction of the E-3A AWACS will dramatically improve Air Force capability to respond to worldwide tactical contingencies. New personnel training programs,

such as Air University's Theater Air Warfare Course, the graduate degree program in Strategic and Tactical Sciences offered by the Air Force Institute of Technology, and the Soviet Awareness Program, will improve the Air Force's ability to plan for and execute wartime tasks. Increases in funds for aircraft spares and depot maintenance will enhance force readiness in the near future.

The Air Force is continuing efforts toward full equipage of the 26 authorized tactical fighter wings; improving electronic warfare capability; increasing munitions quantities; providing interoperable, survivable command and control ground facilities in Europe; and increasing oversized cargo airlift capability required for rapid deployment of US Army forces. Improved airbase survivability and adequate support facilities for NATO augmentation forces are major concerns. Programs such as the collocated operating bases, alternate launch and recovery capability, and hardening of essential airbase facilities have been initiated, but added emphasis is necessary to increase readiness.

Fleet Marine Force readiness has improved over the past year. The number of fully or substantially ready units has increased slightiy. Recruiting and reenlistment efforts, organizational enhancements, and improved equipment have made important contributions to increased readiness. This improved state of readiness is particularly dependent upon the maintenance of adequate numbers of trained Marines. However, lack of adequate personnel in certain technical areas, shortage of amphibious assault shipping, and limitations on overseas amphibious training exercises all affect the ability to maintain a high state of readiness.

PERSONNEL

USSR/WARSAW PACT PERSONNEL

Soviet military personnel strength, excluding security forces, totals about 4.4 million. East European members of the Warsaw Pact have an additional 1.2 million men in their Armed Forces which provides a combined Warsaw Pact strength of 5.6 million. See Chart 31.

The average Warsaw Pact conscript serves from 16 months to three years on active duty and upon discharge is assigned to the reserve until age 50.

ARMED FORCES PERSONNEL
(MILLIONS)

	US	USSR	PRC	NON US NATO	NON SOVIET WARSAW PACT
ACTIVE	2.1	4.4	4.3	2.8	1.2
RESERVE	1.5*	6.8**	–	3.6	2.0
ARMED MILITIA	–	–	7.0	–	–
TOTAL	3.6	11.2	11.3	6.4	3.2

* INCLUDES ARMY NATIONAL GUARD AND AIR NATIONAL GUARD, BUT EXCLUDES RETIRED RESERVES

** ACTIVE DUTY IN PAST FIVE YEARS

CHART NO 31

Currently, about 6.8 million Soviet and 2.0 million East European reservists have had active service within the last five years. This contrasts dramatically with the reduction in available US reserve strength. Increasingly, Soviet armed forces have been drawing upon urban manpower pools, which has raised the educational and technical level of the inducted force. Since 1967, facilities have been expanded to train conscripts prior to induction. Currently, an increasing number of conscripts, notably specialists and non- commissioned officers, receive up to six months of training prior to being assigned to units.

In Soviet professional officer education, most commissioned officers are obtained from commissioning schools, a small percentage come from university level reserve officer training programs and direct commissioning programs. Subsequent educational opportunities for officers include advanced training, mid-career schooling for two to five years at a military academy, and a two-year course at the Military Academy of the General Staff. Most Warsaw Pact officers have not had combat experience.

UNITED STATES PERSONNEL

MANPOWER

Chart 31 also shows active and reserve component reserve strength for US and other forces.

Within the active operating forces, sufficient personnel are available and assigned to units, but shortages exist in particular grades and skills. Difficulty in retaining technically skilled personnel impacts on the readiness of units dependent on such

skills, a particular problem in the Navy. Shortages continue in the supervisory enlisted grades of E-9 through E-5.

Serious manpower shortfalls are continuing in certain reserve component units and in the Individual Ready Reserve (IRR). The Joint Chiefs of Staff are concerned that the decline in reserve component forces may have a severe impact on the overall readiness of the forces. There are 150,000 fewer personnel in the reserves than at this time last year. Shortages are being felt not only in total numbers but in specialized units. These shortages are particularly acute in the case of the Army reserve components, because of the reduction in individuals leaving active service with a reserve obligation. It is doubtful that the reserve component strength can be brought up to standards without a massive recruiting effort complemented by incentives for enlistment and reenlistment. In this regard, the Army has recommended an incentive program to bolster reserve component unit strength. The Congress authorized funds to test a portion of this program during FY 1978. The Services hope that successful test results will also lead to an expanded permanent program for FY 1979.

Recruiting efforts in FY 1977 and the first quarter of FY 1978 have enabled the Armed Forces to maintain their active strength at the authorized levels. Projections for the mid-80s through the 90s, show a decline in the male population available for entry into military service. This decline is of concern. The Services have developed plans for the expanded utilization of women. The number of women projected in the Army alone at the end of FY 1979 will more than double that of FY 1974. Specific plans for the introduction of women aboard ships are being developed by the Navy. The Air Force has totally integrated women into all skills except those prohibited by law and plans to more than double the present 39,000 women by FY 1983. Quality of recruits continues to require careful attention; fewer high school graduates were recruited in FY 1977 than in FY 1976. Efforts are being made to reverse this trend.

QUALITY OF MILITARY LIFE

There is continued and mounting concern among the Service members about their compensation, entitlements, and overall standard of living. Some of the changes represent an actual loss of benefits while others are perceptual. The Service member today is a volunteer who expects his leaders to commit themselves to ensuring a standard of living commensurate with the growing demands placed on military people. Since 1972 there have been repeated attempts to reduce, eliminate, transfer, and transform military compensation and entitlements--factors which help to induce the individual to enlist or to make the military service a career. (Chart 32). Pay raises have not kept pace with the cost of living resulting in reduced purchasing power by the Service member (Chart 33). The impact is particularly felt by increasing numbers of married junior enlisted personnel assigned to high cost of living areas. This issue must be defused before it severely impacts on readiness.

SERVICE MEMBERS VIEWS OF THE PROBLEM

GAINS

1. RETIRED CPI SEMI ANNUAL AUTOMATIC COST OF LIVING INCREASE
2. GI BILL PARTIAL RESTORATION OF EDUCATIONAL BENEFITS
3. PER DIEM INCREASES
4. SURVIVOR BENEFIT PROGRAM IMPROVED SURVIVOR BENEFITS
5. PAY RAISE 7.05% IN 1977

LOSSES

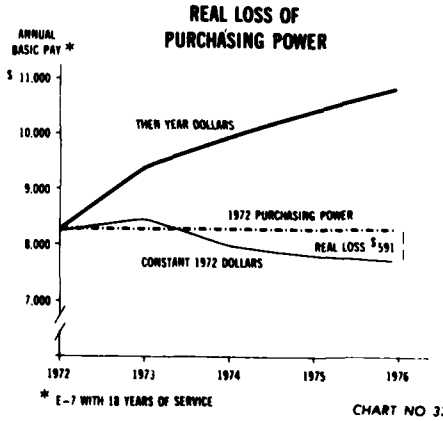
1. TRAVEL PAY LAG MILITARY PER DIEM WAS INCREASED 1½ YEARS AFTER CIVIL SERVICE
2. CLOTHING ALLOWANCE CURRENT ALLOWANCE HAS FURTHER DECREASED DUE TO INFLATION
3. 1% KICKER ELIMINATED METHOD USED TO ADJUST RETIRED PAY FOR INFLATION
4. CHAMPUS REDUCTIONS IN REIMBURSEMENT FROM 90 TO 70 PERCENTILE
5. LEAVE SELL BACK CAREER LIMIT OF 60 DAYS
6. PAY CAP PRESIDENTIAL CEILINGS IMPOSED ON 1975 AND 1976 PAY RAISE
7. REALLOCATION IMPACTS ON RETIRED PAY

PERCEIVED LOSSES

8. RETIREMENT ATTACKS ON THE CURRENT SYSTEM
9. GI BILL REDUCTION IN BENEFITS
10. HEALTH CARE REDUCTION IN SERVICES PROVIDED
11. FMR AMPLIFIES ALREADY EXISTENT DIFFERENCES IN PAY BY GEOGRAPHIC LOCATION
12. COMMISSARY CLOSURES OPERATING REDUCTIONS

CHART NO 32

REAL LOSS OF PURCHASING POWER



* E-7 WITH 18 YEARS OF SERVICE

CHART NO 33

TURBULENCE

The Joint Chiefs of Staff support every reasonable effort to reduce military personnel turbulence and the costs incurred by permanent change of station (PCS) of Service members. Actions such as the Army's Homebase and Advanced Assignment Program for soldiers assigned to dependent restricted duty, the Air Force's voluntary increases in overseas tour lengths, and the approval of intertheater long tours are some of the initiatives recently undertaken to reduce turbulence and hold down PCS costs. However, overemphasis on reducing PCS costs will impact adversely on combat readiness. Equity of tour assignments, particularly among young Service members, should be maintained if possible. Moreover, certain military duties place extraordinary demands on the Service member; timely reassignment contributes to maximum effectiveness. These types of duties include: service with naval forces afloat; drill instructors; recruiters; and security guards serving in remote, sensitive posts.

UNIONS

The Joint Chiefs of Staff are unequivocally opposed to unionization of the Armed Forces. The concept of unionized Armed Forces is incompatible with the military chain of command and undermines the role, authority and position of the military commander. Additionally, the unionization of the military could have the effect of creating an adversary relationship between the Service members and Service leaders and between the Service members and their Congressional representatives. Unionization of the US Armed Forces could severely hamper readiness. Legislation and/or directives prohibiting unionization of the Armed Forces are not enough. Fundamental causes that would make union membership attractive within the military must be addressed, such as uncertainty about the economic stability of a military career.

MILITARY EDUCATION

A key to development of effective military forces is the development of professional military leaders. The military now has a system to educate their best and most promising officers in order to prepare them for positions of higher responsibility. It is necessary to maintain a system of professional military education as an integral part of professional advancement to ensure that our military forces are prepared. Civilian institutions cannot fulfill this role. The complexities of modern-day warfare sustain the continued need for the Armed Forces to direct maximum efforts towards educating officers in the specific mission-related fields of their Services. Strides to modernize our military education system must continue to ensure it complements and prepares combat ready forces through the development of competent professional leadership. Recent reductions in funds for officer education reduce the number of highly qualified officers from which to assign mid-and senior-level managers.

SENIOR OFFICER GRADE STRUCTURE

Over the past six years a series of actions have been taken to reduce senior military grades. There are several factors which bear on the requirements for general/flag officers. Top management assignments are based on the qualities (managerial skill, perspective, breadth of experience, authoritative representation) that the top-level manager brings to the position. The number of people the top-level manager must supervise or statistical correlations, such as ratios of general and flag officers to all other officers or of general/flag officers to total strength, cannot provide for the essential qualitative factors that must be considered in any assessment of the requirements for senior leadership. Therefore, the determination of the need for high-level military management should use as a beginning basis the managerial skill, expert judgment, experience and special qualifications that are required for a particular senior leadership position.

In the same light, basic military force structure requires certain numbers of officers at all levels and officers are allocated within it in response to a need for experience, expertise and authority required to perform particular functions. Outside the basic force structure (positions in OSD, the DOD Agencies, certain attaches, etc.), the functions to be performed also govern the requirements for officers in a particular grade, but less rigidly.

General/flag officer positions are established independently, based on the qualitative factors described above; therefore, the downgrading of a general/flag officer position will not automatically entail the elimination or downgrading of other positions unless functions are also changed.

The number of general/flag officers required is driven by demands for top leadership in combat forces, command and control agencies and resource management. The requirements have increased over the past 25 years in response to the growth of the Department of Defense and the added pressures for improved management. Despite these pressures, the number of general/flag officer positions has been reduced by 11 percent during the period FY 1973 through FY 1978. Additionally, the general/flag officer leadership environment has undergone significant and almost constant change, and demands have increased for high-level executives in the military establishment. Advancing technology has yielded more complex management control systems, weapons, and command and control networks, while the threat to national security has become greater and more complicated. Cost escalations for manpower and materiel have compounded these challenges. In view of these factors, there are insufficient general/flag officer authorizations today to meet all the valid requirements.

Extensive data show that the leadership of our military forces at the senior level is austere in relation to other departments of the Federal Government, the armed forces of most other nations, and the private sector. Further reductions will be to the detriment of our military forces and will lower the capability of the Armed Forces to retain and develop the talented leaders required to command deployed forces and fill other high-level military leadership positions in the future.

OPERATIONS, TRAINING AND EXERCISES

USSR/WARSAW PACT OPERATIONS, TRAINING AND EXERCISES

The unit training system of the Soviet ground forces is designed to rapidly forge conscripts into an efficient element of the unit to which they are assigned. Programs consist of individual and small unit training, field training exercises and command post exercises. Most major exercises are in the form of a command post exercise with limited participation by troops maneuvering in the field.

The training of Soviet units is organized according to an annual schedule, normally divided into two six-month periods keyed to the semi-annual troop rotation. Individual training is emphasized in the first several weeks of each cycle. Unit training is emphasized in the remaining portion. All troops receive frequent chemical, biological, and radiological training in their units, including the wearing and use of protective clothing and equipment and the use of detection and decontamination equipment. The Soviets emphasize the need for field personnel to be able to perform their duties while wearing full protective clothing and occasionally require that such clothing be worn while performing strenuous tasks under simulated combat conditions.

Training is keyed to wartime missions. Training emphasizes rapid transition from a peacetime to a wartime footing, continuous command and control, operations in a nuclear and chemical environment, combined arms operations, rapid movement, and maneuver. Units are required to carry out a set number of field training exercises each year.

Major Soviet exercises conducted at division level and higher usually involve joint operations of several branches of the Soviet forces, the ground, air, naval, and strategic rocket forces.

In the Warsaw Pact forward area, a significant trend away from large-scale training exercises has been observed in recent years. Multi-army, multinational maneuvers have been deemphasized. High level staffs are now trained primarily by command post exercises with limited field training activities. To date, seven exercises have been announced by the Warsaw Pact countries in advance in conformance with final accords of the Conference on Security and Cooperation in Europe.

Most Soviet pilots fly about 100 hours annually. Training includes formation flying, air-to-air missile firing, rocketry, bombing, gunnery, interception, mobility, ground attack, night and poor weather

flying, and deployment exercises. The forces also participate in both small and large scale joint and multinational exercises, most commonly at the squadron or regimental level.

PRC OPERATIONS, TRAINING AND EXERCISES

There has been a noticeable increase in PRC joint operations over the past year and a half but they are still rudimentary by US standards. Most joint operations have been noted in the coastal areas of the PRC. These have been defensive in overall orientation, which probably reflects both existing capabilities and perceived threat.

The PRC ground force training schedules are intended to produce what the Chinese consider to be an ideal balance between ideological indoctrination and practice in military techniques. By Western standards, an inordinate amount of effort is devoted to political indoctrination. Apart from political training, emphasis is on weapons familiarization; field training in accordance with local conditions; and endurance under hardship conditions. Although heavy emphasis is still placed on small unit tactics, some division-level and higher training--including combined arms, regional inter-regional and joint service exercises--has been noted.

UNITED STATES OPERATIONS, TRAINING AND EXERCISES

US operations and training have improved during the past year. Generally, improvements have been qualitative and resulted from Service efforts to obtain the maximum training value from each operating hour and training event.

The joint exercise program is an essential element in the readiness posture of unified and specified commands. Exercises help commands to prepare for contingency and other operational requirements. The cancellation, reduction in scope, or deferral of joint exercises has a cumulative adverse impact on force readiness. While the effectiveness of joint training is difficult to quantify, its value is made demonstrably clear when conflict or contingencies require immediate and flexible reaction. Forces do not operate independently; and unless these forces are exercised jointly, total force readiness can be neither assessed nor assured.

The major strategic mobility exercise in 1977 continued the initiatives begun in 1976. The return of Army Forces to Germany--REFORGER-- exercised all transportation operating agencies, and host nation support was again thoroughly tested. A five-year program has been developed and approved by all Services which provides for annual deployments of Army forces to Europe. CONUS and European forces will maneuver in the Central and Northern Army Group areas. This major annual strategic mobility exercise will be integrated with the NATO AUTUMN FORGE series of exercises.

As part of REFORGER 77, one mechanized brigade was transported to the theater by the Military Sealift Command, and a concurrent exercise in the Mediterranean, DISPLAY DETERMINATION, demonstrated the US capability to reinforce the southern flank of Europe. Exercise DISPLAY DETERMINATION culminated in amphibious landings along the Turkish Coast and in Northern Italy.

New weapon systems entering the force and growing requirements for collective combined arms live fire training make real estate for training especially important. The Army has been increasingly constrained by the available land as well as increases in weapons range and lethality. Airmobile, antiarmor weapons, electronic warfare, and US Air Force support in training require increased training areas. As a result, the Army will need to expand some existing installations and seeks to establish one or more National Training Centers which can support realistic combined arms training.

US Navy participated with navies of Brazil, Chile, Colombia, Ecuador, Peru, Uruguay, and Venezuela in the annual UNITAS XVIII, an exercise designed to conduct antisubmarine, antiair, electronic warfare and gunnery operations in conjunction with naval and air forces of the South American countries.

Naval air units were exercised in BRAVE

SHIELD XVI and VIGILANT OVERVIEW exercises. Airborne EW assets played in BRAVE SHIELD XVI, and the VIGILANT OVERVIEW exercise series tested early warning capabilities. Naval surface units participated in VARSITY SPRING 2-77 in the Southern California sea operating area, and in joint exercise SOLID SHIELD 77 off the Georgia coast.

The Air Force has improved combat readiness through innovative training operations and expanded exercise programs. The Tactical Air Command's RED FLAG program is designed to provide aircrews with the most realistic training short of actual combat. Using sophisticated threat and data collection equipment, realistic targets and a dedicated "enemy force" which employs Soviet tactics and concepts, the RED FLAG program is able to simulate wartime conditions. Ten one-month exercises are conducted yearly on the Nellis Range Complex. Participants have included units from the Army, Navy, Marines, Royal Air Force, and Royal Canadian Air Force, as well as Air Force tactical, airlift, rescue and strategic forces. Similar programs on a smaller scale have been implemented in the Pacific and European theaters.

The BLUE FLAG program, at Eglin Air Force Base, Florida, places emphasis on command and control systems and the interoperability of communications and intelligence. In addition to training, BLUE FLAG facilities are used for developing requirements, concepts and procedures for new command and control systems.

The Tactical Deployment Program, in which augmentation units are deployed to the theater environment, develops and tests mobility concepts, evaluates host unit reception and support, and provides the unified commander the opportunity to integrate augmenting forces. In addition, it demonstrates to allies and potential adversaries US capability to honor its commitments. The Air Force has increased its Tactical Deployment Program in the past year and placed special emphasis on deploying forces to allied collocated operating bases.

MOBILIZATION

OVERVIEW

Mobilization must not only marshal and deploy the active and reserve forces, but must also expand the military force rapidly and convert the industrial base of the nation to a wartime footing.

USSR/WARSAW PACT MOBILIZATION

The Warsaw Pact has some 225 active divisions, of which over 170 are Soviet.

The Soviets have 2.5 million ground reservists who have served on active duty within the last five years; the non-Soviet Warsaw Pact countries have approximately 2 million men in this category. Further, the Soviets are known to maintain, in storage, large quantities of equipment. They have identified equipment from the civilian sector, such as trucks, medical stocks and construction materials, for mobilization, and have detailed mobilization plans which are exercised periodically. Soviet mobilization procedures are believed to be operationally effective.

UNITED STATES MOBILIZATION

Twenty-eight US active and reserve component divisions are currently planned for deployment in event of full mobilization. Active forces will provide the primary initial reinforcement of NATO. Reserve component units will be required to deploy with the active units or be sent later as augmentation. Under present conditions, some reserve units would have to be deployed at less than full combat ready status.

There are serious readiness deficiencies in certain of the reserve components, and in the ability to mobilize and deploy the force in a timely manner. Among the problems are: the shrinking size of the Individual Ready Reserve (IRR); serious shortages of personnel and equipment in the reserve component units; inability of the Selective Service System to provide a significant number of inductees early enough to influence the outcome of a war; and insufficient interdepartmental planning for mobilization necessary for protracted combat. The Joint Chiefs of Staff support a Standby Draft System to provide for inductions within 30 days. Upgrading of the Standby Draft System to this 30 day response time would provide inductees to the battlefield within four months of mobilization in-

stead of the current seven months, thus lessening the mobilization manpower shortage. The Joint Chiefs of Staff have also requested a comprehensive interagency assessment of the US industrial base, to be conducted under the auspices of the National Security Council. To supplement this effort, the Joint Chiefs of Staff are developing a Mobilization Planning Directive to provide guidance on joint mobilization and deployment.

COMMAND, CONTROL, AND COMMUNICATIONS

USSR COMMAND, CONTROL AND COMMUNICATIONS

GENERAL

Soviet command, control and communications C^3 systems are extensive and modern, and their doctrine emphasizes centralized control, survivability, redundancy and flexibility.

During the past year the Soviets have demonstrated new communications systems, with wide reliance on aircraft and satellites, particularly for their strategic offensive forces and continental (peripheral) offensive forces. An equally strong emphasis has been placed on development and improvement of the Soviet Ocean Surveillance System.

Utilizing the general staff of the Ministry of Defense as agent, the Soviet "National Command Authority" controls its military commands.

Survivability is achieved through various means such as dispersal, redundancy, hardness, concealment and mobility.

Redundancy includes multiple command centers, to assure continuity of control of armed forces, and communications means and modes. Redundancy of Soviet C^3 facilities also is achieved through the establishment of main and alternate command posts.

RADIO AND TELECOMMUNICATIONS

In the Soviet Union, a highly centralized government-controlled system maintains rapid communications with civil and military authorities all over the country. The system comprises extensive networks of cable and open-wire lines, radio-relay links, radio-communications stations, and communications satellites.

The major national telecommunications complex is known as the Unified Communications System. In the event of an emergency, the entire system could be readily converted into a nationwide military communications complex.

Modern Soviet telecommunications engineering concepts stress flexibility, survivability and reliability of the system to meet national military command and control requirements for continuous telecommunications operations.

AUTOMATION

Automation of Soviet command and control is evolving slowly. The Soviet air defense forces and the Moscow Antiballistic Missile system probably employ automation most extensively.

A major strength of the Soviet/Warsaw Pact automation program is that systems are being developed specifically for military requirements, rather than adapting other systems to military use.

AIRBORNE COMMAND POSTS

Survivability of the Soviet command function is enhanced by airborne command posts, which can be dispersed to different locations to serve as alternate communications means in case of jamming or destruction of ground-based facilities.

Soviet airborne command posts have been active during crisis situations.

SPACE COMMUNICATIONS SYSTEMS

Soviet satellites provide communications support to military, diplomatic, intelligence, and civilian organizations.

The predominant communications satellite used in support of military command and control has been the MOLNIYA I system in the ICBM forces. Since the mid-1960s, when the first MOLNIYA I was launched, the Soviet Union has continued to

improve its communications satellite program. The Soviet Union has launched the improved MOLNIYA II and MOLNIYA III systems and geosynchronous STATSIONAR, all of which can be used for military command and control. The MOLNIYA I and II stationary military ground sites are deployed at many major headquarters throughout the Soviet Union and stations are beginning to be deployed in East Europe.

SPACE NAVIGATION SYSTEMS

Russian navigation satellites were first launched in 1967. Their principal mission appears to be support of naval users who can determine their positions by correlating data transmitted from the satellites.

PRC COMMAND, CONTROL AND COMMUNICATIONS

China has devoted major efforts toward strengthening its command and control capabilities.

Central planners have devoted major efforts toward ensuring the adequacy and efficiency of the overall system. Nevertheless, notable weaknesses exist on both national and regional long-distance communications networks.

China has other communication problems, including terrain which hinders construction and maintenance of landlines and radio-relay links.

In spite of the many problems, PRC is moving to achieve a rapid, flexible and secure command, control and communications capability for crisis management.

UNITED STATES COMMAND, CONTROL AND COMMUNICATIONS

Development and improvement of the US C^3 capability, for normal peacetime command and control, for crisis management, and for conflict control, retains a high priority. Responsiveness, survivability, and flexibility are stressed. C^3 functions are performed by the interaction of command centers, warning systems, data processing equipment, communications facilities, personnel, and procedures incorporated in the Worldwide Military Command and Control System (WWMCCS).

The priority component of the WWMCCS is the National Military Command System (NMCS), which supports the National Command Authorities. It provides for the national level command and control of strategic and general purpose forces and is a major user of information collected by attack, strike, damage, and residual assessment.

SURVIVABILITY AND RELIABILITY

The capability to support the national security policy and military strategy through all levels of conflict is directly related to the survivability and reliability of C^3 systems. Survivability and reliability of C^3 systems are hazarded by reliance on easily disrupted fixed systems, the vulnerability of non-secure systems to interception, the susceptibility of terrestrial and space systems to jamming, and the shortfall in strategic lift resources for required C^3 augmentation during contingencies.

The Defense Communications System and the systems operated by the Military Departments, which support WWMCCS, are adequate for peacetime requirements. However, in time of war, fixed facilities and non-tactical transmission systems are vulnerable to enemy attack, electronic interference and sabotage. While the Soviets have hardened most of their critical fixed C^3 sites, the continental United States has only three major hardened sites at the Alternate National Military Command Center (ANMCC), Strategic Air Command (SAC), and the NORAD Combat Operations Center (NCOC). The United States remains heavily dependent upon airborne command posts for survivability. In addition, heavy reliance is placed on leased communications services and host nation telecommunications support. US forces under NATO operational control must depend upon both US and allied communications facilities during combat operations in Europe. Automated US systems are not interoperable with the low capacity manual NATO systems--which themselves comprise a mix of national facilities. Both short and long term actions are underway to automate and increase the capacity of the NATO systems and to

provide automatic interoperability with US systems.

There is a shortfall in strategic lift for deploying bulky C^3 equipment early, due to competition for lift assets between European designated combat forces and theater support communications. Modernization of existing communications-electronic forces, current military satellite communications programs, and the WWMCCS developments, will provide needed mobile, transportable, and recoverable communications assets. These measures will help alleviate communications-electronic force inadequacies until additional communications-electronic forces can be made available.

C^3 INITIATIVES

Implementation of the WWMCCS Architectural Plan will improve communications connectivity, survivability and flexibility. It also provides improved command and control capabilities for crisis situations and higher levels of conflict.

Data processing support for commanders is being upgraded to provide more timely information to decisionmakers. More flexible and timely interchange of data and information among the major command centers supported by the WWMCCS computers is being developed. This intercomputer capability will provide improvement in the amount and quality of information for crisis management and planning, and for routine command and control. NATO is now introducing WWMCCS-type ADP equipment and software within Allied Command, Europe, and the United States is now sharing WWMCCS computers with both Allied Command, Atlantic and Allied Command, Europe.

The Defense Communications System (DCS) satisfies basic peacetime long-haul communications needs and supports US command and control worldwide. The major subsystems of the DCS are AUTOVON (global telephone system), AUTOSEVOCOM (secure voice system), AUTODIN (secure message and data transmission system) and the DSCS (Defense Satellite Communications Systems). Upgrade of the European DCS to a digital system has begun with the Digital European Backbone (DEB) program. Improvements to these systems will increase the capability, efficiency and economy of operations of the C^3 system.

Initiatives have been taken to improve tactical C^3 for theater commanders. Testing of Tactical Air Control System and Tactical Air Defense System integration continues to progress. A demonstration of the system interface was successful. Development is progressing on much needed digitized, antijam and secure tactical communications equipment. The family of Single Channel Ground and Airborne Radios Subsystems (SINCGARS), which will provide total voice security, improved electronic warfare protection, and more efficient use of the radio frequency spectrum, is in the development phase. These initiatives will provide improvements in tactical C^3 in the mid to long range. In the short range, additional transmission and switching systems are needed to provide tactical C^3 needed by unified and joint task force commanders in potential areas of conflict.

Although the US has, for several years, denied potential adversaries access to classified messages by encrypting all of its printed telecommunications, existing voice communications are highly susceptible to intercept and compromise, due to a shortage of secure voice equipment. Programmed procurement of tactical secure voice equipment, coupled with use of existing equipment will permit the securing of critical (but not all) tactical voice communications.

The strategic secure voice improvement program (mostly AUTOSEVOCOM II) requires prompt attention from Congress if it is to guarantee that National Command Authorities, theater commanders and major subordinate commanders are immediately accessible (individually or all together) by a secure telephone system. The current AUTOSEVOCOM I system is a collection of narrowband and wideband systems with the older, and less capable, narrowband systems prevailing, especially at lower levels of command. However, the need and importance of a wideband secure voice system, with conferencing capability down to the on-scene commander was demonstrated during the Saigon, Phnom Penh and Lebanon evacuations, the Mayaguez incident, and the Korean tree-cutting incident. Narrowband

technology cannot effectively be used in such a manner.

Practically speaking, the employment of a worldwide secure voice conferencing system is dependent upon (1) the current wideband Defense Satellite Communications System, and (2) wideband AUTOSEVOCOM I and II programs. However, the AUTOSEVOCOM II program was subjected to restrictions, budget reductions and possible reorientation towards a narrowband approach, and there is little confidence that a technological breakthrough will occur in the narrowband approach which will afford rapid secure voice interoperability and conferencing. State of the art development, as well as ongoing program procurement practically dictate proceeding with wideband secure voice development and implementation for military communications systems. Total voice security will be expensive. However, that goal will be pursued, as funding becomes available, for the foreseeable future. Accomplishment of this goal will significantly reduce the enemy's access to planning and operational intelligence.

SPACE COMMUNICATIONS SYSTEMS

Two US Defense Satellite Communications Systems (DSCS) satellites were successfully launched in May 1977 to join one other DSCS satellite and a NATO III B satellite (on loan to US from NATO) to form a four satellite network that provides relay capability worldwide (less the two polar areas). The DSCS mission is to provide the Department of Defense with communications which, by their nature, cannot adequately or reasonably be provided by commercial service or other military systems. The DSCS utilizes super high frequencies (SHF) geosynchronous satellites for relay between a variety of relatively high capacity earth terminals. Two additional pairs of DSCS satellites are scheduled for launch in 1978. By 1979, the DSCS is expected to comprise four operational and two spare satellites in orbit. The DSCS has the capacity to satisfy communication requirements of DOD users for surveillance, warning, and other command and control functions. In addition, the State Department Telecommunication Service has numerous earth terminals that are authorized access to the DSCS satellites.

The Fleet Satellite Communications System (FLTSATCOM) was originally planned to consist of four equatorial synchronous satellites utilizing both SHF and UHF frequencies to interconnect naval forces at sea and to provide links from the fleet to naval shore terminals. In FY 1978 budget decisions, Congress eliminated funds for FLTSATCOM vehicles 4 and 5 and directed that DOD lease the required UHF services. Presently DOD is leasing three UHF satellites called GAPFILLER which were to be used until the FLTSATCOM satellites became available. It now appears that the FLTSATCOM system will consist of a mixture of FLTSATCOM spacecraft and satellites leased from commercial sources.

The Air Force Satellite Communications System (AFSATCOM) originally was to consist of a communications relay capability in the four FLTSATCOM geostationary spacecraft and a relay capability in other host satellites in near polar orbits. With the number of FLTSATCOM spacecraft reduced to three, some of the AFSATCOM required services will be unavailable at the lower latitudes or routed over Satellite Data System (SDS) satellites. The purpose of the AFSATCOM is to provide low-data rate, teletype service to improve worldwide command and control between selected strategic force elements of the SIOP and ground or airborne command posts. AFSATCOM terminals will operate on UHF and will be installed in the majority of the US Strategic Air Command bomber aircraft and ICBM launch control centers as well as airborne command posts.

Tactical satellite communication support for selected ground mobile forces of the Military Services will be provided by a family of highly mobile terminals that will share in the use of the space segment capacity of the UHF and SHF satellite communications systems already described. A new general purpose satellite communications system is also under development to satisfy this need.

SPACE NAVIGATION SYSTEMS

The US presently employs a satellite navigation system, known as TRANSIT, principally for naval use. R&D continues on the Global Positioning System (GPS), a highly accurate positioning

system to satisfy a broad spectrum of military and civilian requirements. It is intended to improve coverage and precision for positioning aircraft, artillery, ships, and other weapon delivery systems, and for other purposes. The GPS should help reduce the proliferation of positioning and navigation systems.

SECURITY ASSISTANCE

COLLECTIVE SECURITY

A key lesson of World War II was that collective resistance to aggression is essential to US security and interests. Since then, collective security has been a cornerstone of US foreign and national security policy.

Collective security means that in those contingencies for which military force is appropriate, and where the interests of the United States are common with one or more of its allies and friends, military action will be undertaken collectively by the military forces of those nations. The United States alone cannot counter all military threats to its interests and those of its allies and friends. The military forces of the US and those of its allies and friends are additive and complementary. In combination, they meet the military requirements of any contingency and provide the essential basis for combined operations.

USSR SECURITY ASSISTANCE

For over 20 years the Soviet Union has used military aid in expanding its influence in the less developed countries (LDCs). During this period Soviet arms and supporting services valued at nearly $19 billion were delivered to the LDCs; some $12 billion of these deliveries occurred during the period 1972 to mid-1977, nearly 80 percent to Middle East and North African recipients. In addition to exports to non-communist nations, the Soviet Union provided some $9.5 billion in military assistance to communist recipients during the same period.

The USSR has provided modern equipment. Soviet arms deliveries have covered the entire range of nonnuclear weaponry. The USSR was the first to export supersonic jet fighters, surface-to-air missiles, guided missile patrol boats, self-propelled radar-controlled antiaircraft guns and surface-to-surface missiles to LDCs.

During 1976 alone, Moscow delivered more tanks, artillery pieces and missiles to the less developed countries than the United States. The USSR also exported almost the same number of fighter/attack bomber/aircraft and naval ships as the US. The Soviets respond to arms orders more rapidly than the United States (often in six to 18 months) because they often fill these orders from domestic stocks. Even before the recent acceleration in arms sales, the United States' two-to-four-year lead time had resulted in a substantial backlog. Delivery times for more complex US systems are longer.

Soviet objectives for their military assistance program are to develop and expand Soviet influence and leverage with non-communist nations, to encourage the shift in regional power relationships in favor of the Soviet Union, to gain access to strategic naval and air facilities, and to improve their balance of payments position.

UNITED STATES SECURITY ASSISTANCE

The public statement issued by the President on 19 May 1977 established stronger restraints and prohibitions on US arms transfers than those which have governed security assistance since the end of World War II. US arms transfers, intended to serve US national security objectives, have been geared toward providing friends and allies with the means for self defense as an alternative to direct US deployments.

The restraint program can be effective and serve our security requirements if it is evenly applied and conducted in concert with other arms exporting nations. Denial of legitimate defense requests or perceptions of an uneven application of the restraint program by friends and allies could jeopardize US security interests, including our access to important port and air facilities, overflight privileges and critical raw materials.

The value of the program is best illustrated by our efforts to provide assistance to Israel in her time of need. The massive US air program is now recognized as a key factor in stabilizing the Middle

East situation and fostering the initiatives which we all hope will bring peace to that area.

The unified commanders play a key role in our security assistance program. They provide the important advice and comment on country program issues from both a regional perspective and as the cognizant military area commander responsible for the security of the region.

In the final analysis, the basic purpose for security assistance programs is international defense cooperation. More than 70 sovereign nations have looked upon this form of defense endeavor as an essential element of cooperation with the United States across the entire range of political, economic, social and military relationships.

GLOSSARY

AAH	—	advanced attack helicopter
AAM	—	air-to-air missile
AAW	—	antiair warfare
ABM	—	antiballistic missile
ACE	—	Allied Command Europe
ADP	—	automatic data processing
AEW	—	airborne early warning
AFLANT	—	Air Forces, Atlantic
AFSATCOM	—	Air Force Satellite Communications System
ALCM	—	air-launched cruise missile
AMST	—	advanced medium STOL transport
ANG	—	Air National Guard
ANMCC	—	Alternate National Military Command Center
ANZUS	—	Australia, New Zealand, United States
APC	—	armored personnel carrier
APVO	—	(Soviet) Air Defense Aviation
ARPS	—	advanced radar processing system
ASEAN	—	Association of South East Asia Nations
ASM	—	air-to-surface missile
ASW	—	antisubmarine warfare
ATBM	—	antitactical ballistic missile
ATCA	—	advanced tanker/cargo aircraft
AUTODIN	—	Automatic Digital Network
AUTOSEVOCOM	—	Automatic Secure Voice Communications
AUTOVON	—	Automatic Voice Network
AWACS	—	Airborne Warning and Control System
BLSS	—	base level self-sufficiency spares
BMD	—	ballistic missile defense (program); also Russian infantry fighting vehicle--no long term for acronym
BMEW	—	ballistic missile early warning
BMP	—	Russian infantry fighting vehicle--no long term for acronym
BW	—	biological warfare
C^3	—	command, control and communications
CBR	—	chemical, biological, and radiological
C-E	—	communications-electronics
CENTO	—	Central Treaty Organization
CEP	—	circular error probable
CILOP	—	Conversion in Lieu of Procurement
CINCLANT	—	Commander in Chief, Atlantic
CONDECA	—	Central America Defense Council
CONUS	—	continental United States
CRAF	—	Civil Reserve Air Fleet
CW	—	chemical warfare; continuous-wave (radar)
DCS	—	Defense Communications Systems
DEB	—	Digital European Backbone
DIVAD	—	Division Air Defense Gun
DOD	—	Department of Defense
DSCS	—	Defense Satellite Communications System

DSP	—	Defense Support Program
DWT	—	deadweight ton
ECCM	—	electronic counter-countermeasures
ECM	—	electronic countermeasures
ELINT	—	electronic intelligence
EUSC	—	Effective US Controlled (ships)
EW	—	electronic warfare
FA	—	(Soviet) Frontal Aviation
FLTSATCOM	—	Fleet Satellite Communications System
FRG	—	Federal Republic of Germany
GCI	—	ground controlled intercept
GDR	—	German Democratic Republic
G-I-UK	—	Greenland-Iceland-United Kingdom
GPS	—	Global Positioning System
GSFG	—	Group Soviet Forces, Germany
HF	—	high frequency
IADB	—	Inter-American Defense Board
ICBM	—	intercontinental ballistic missile
IFV/CFV	—	infantry fighting vehicle/cavalry fighting vehicle
IOC	—	initial operational capability
IRBM	—	intermediate-range ballistic missile
IRR	—	Individual Ready Reserve
km	—	kilometer
kt	—	kiloton
LCAC	—	landing craft air cushion
LDC	—	less developed country
LOC	—	line of communication
LRA	—	(Soviet Strategic) Long-Range Aviation
MAAG	—	military assistance advisory group
MAF	—	Marine Amphibious Force
MARAD	—	Maritime Administration
MBFR	—	mutual and balanced force reductions
MIDEASTFOR	—	Middle East Force
MILGP	—	military group
MIRV	—	multiple independently targetable reentry vehicle
MLBM	—	modern large ballistic missile
mm	—	millimeter
MRBM	—	medium-range ballistic missile
MRV	—	multiple reentry vehicle
MSC	—	Military Sealift Command
MT	—	metric ton, megaton
NCA	—	National Command Authority(ies)
NDRF	—	National Defense Reserve Fleet
NFA	—	new fighter aircraft (Canadian)
NIIs	—	Scientific Research Institutes (Soviet)
nm	—	nautical mile
NMCS	—	National Military Command System
NORAD	—	North American Air Defense Command
OPEC	—	Organization of Petroleum Exporting Countries
OTH	—	over-the-horizon (radar)

PARCS	—	Perimeter Acquisition Radar Attack Characterization System
PBV	—	post-boost vehicle
PCS	—	permanent change of station
PLA	—	(Chinese) People's Liberation Army
PLSS	—	Precision Location Strike System
POL	—	petroleum, oils, and lubricants
POMCUS	—	pre-positioning of materiel configured to unit sets
PRC	—	Peoples Republic of China
R&D	—	research and development
RB/ER	—	reduced blast/enhanced radiation
ROK	—	Republic of Korea
RO/RO	—	roll-on/roll-off (ship)
RRF	—	Ready Reserve Force
RV	—	reentry vehicle
SAC	—	Strategic Air Command
SAL	—	strategic arms limitation
SALT	—	Strategic Arms Limitation Talks
SAM	—	surface-to-air missile
SHF	—	super high frequency
SIGINT	—	signal intelligence
SINCGARS	—	Single Channel Ground and Airborne Radios Subsystems
SIOP	—	Single Integrated Operational Plan
SLBM	—	sea-launched ballistic missile; also submarine-launched ballistic missile
SNA	—	Soviet Naval Aviation
SOSUS	—	Sound Surveillance System
SOTAS	—	Stand Off Target Acquisition System
SRAM	—	short-range attack missile
SRBM	—	short-range ballistic missile
SRP	—	Sealift Readiness Program
SRV	—	Socialist Republic of Vietnam
SS	—	attack submarine, conventional powered
SSAG	—	auxiliary submarine
SSB	—	conventional powered ballistic missile submarine (Soviet)
SSBN	—	nuclear powered ballistic missile submarine
SSG	—	conventional powered cruise missile submarine
SSGN	—	nuclear powered cruise missile submarine
SSN	—	nuclear powered attack submarine
SSR	—	attack submarine, reserve force, conventional-powered (Soviet)
STOL	—	short takeoff and landing
TAC	—	Tactical Air Command
TASM	—	tactical air-to-surface missile
TMDE	—	test, measurement, and diagnostic equipment
TNF	—	theater nuclear forces
TOW	—	tube-launched, optically tracked, wire-guided
TRAM	—	Target Recognition Attack Multisensor
UHF	—	ultrahigh frequency
UK	—	United Kingdom
UK/NL	—	United Kingdom/Netherlands
UN	—	United Nations

USAFE	–	United States Air Forces, Europe
USEUCOM	–	United States European Command
UTTAS	–	Utility Tactical Transport Aircraft System
VHF	–	very high frequency
VLF	–	very low frequency
V/STOL	–	vertical/short takeoff and landing
VTA	–	(Soviet) Military Transport Aviation
WRMS	–	war reserve materiel stocks
WRSK	–	war readiness spares kits
WWMCCS	–	Worldwide Military Command and Control System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