ALLOCATION OF RESOURCES IN THE SOVIET UNION AND CHINA—1980

HEARINGS

BEFORE THE

SUBCOMMITTEE ON PRIORITIES AND ECONOMY IN GOVERNMENT

OF THE

JOINT ECONOMIC COMMITTEE

CONGRESS OF THE UNITED STATES

NINETY-SIXTH CONGRESS

SECOND SESSION

PART 6

EXECUTIVE SESSIONS

JUNE 30 AND SEPTEMBER 25, 1980

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CONTENTS

WITNESSES AND STATEMENTS

MONDAY, JUNE 30, 1980

THURSDAY, SEPTEMBER 25, 1980

SUBMISSIONS FOR THE RECORD

MONDAY, JUNE 30, 1980

THURSDAY, SEPTEMBER 25, 1980

POINTS OF INTEREST

MONDAY, JUNE 30, 1980

THURSDAY, SEPTEMBER 25, 1980

ALLOCATION OF RESOURCES IN THE SOVIET UNION AND CHINA—1980

MONDAY, JUNE 30, 1980

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON PRIORITIES AND
ECONOMY IN GOVERNMENT OF THE
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to notice, in executive session, at 10:10 a.m., in room 5302, Dirksen Senate Office Building, Hon. William Proxmire (chairman of the subcommittee) presiding.

Present: Senators Proxmire and Jepsen; and Representative Wylie.

Also present: Richard F. Kaufman, assistant director-general counsel.

OPENING STATEMENT OF SENATOR PROXMIRE, CHAIRMAN

Senator PROXMIRE. The subcommittee will come to order.

I am pleased to welcome Lt. Gen. Eugene F. Tighe, Jr., Director, Defense Intelligence Agency, who will open this year's hearing on the "Allocation of Resources in the Soviet Union and China."

Before I go on, General, it would be very helpful if in the course of the hearings that you could indicate—I know it's a little difficult to do this, but if you could indicate that part of the hearings which is not classified, if there is a large part of what you're saying that is not, and to be sure, of course, to let me know if there is something that is classified, because I have always followed a policy in the past of not discussing anything that is said here, and waiting until the report came out, at which time it might be dated, the Senate might be out of session. Right now we're having a very important discussion of our defense procurement, and this may or may not have relevance to the allocation of resources in the Soviet Union and China.

At any rate, it would make the testimony far more useful if there were part of it that could be disclosed without any concern. And I'm sure on the basis of our past experience, the overwhelming amount that is disclosed here is not classified. Some is. Of course, information that is classified or even restricted, that classification will be fully respected.

As you know from your previous involvements in these hearings in an effort to look comprehensively at the economics of these two Communist nations, we do so by examining other economic resources that are employed for both military and civilian purposes. Our inquiry, therefore, involves understanding of political and military, as well as economic factors.

This year we wish to pay special attention to Soviet foreign activities including a review of its actions abroad, its trade and aid policies, and the results so far of the United States sanctions against the Soviet Union in response to the invasion of Afghanistan. With respect to China, we hope to receive information about the modernization program, trends relating to leadership and political stability, and Sino-Soviet relations.

General, in the prepared statement you submitted for the record, you have a number of things to say about technology transfer to the Soviet Union and trade sanctions. The Senate Banking Committee, which I chair, plans to hold hearings concerning the trade sanctions later this month, beginning on July 23. I wonder if it would be possible to obtain as much of this part of this statement as well as the dialog that we might have later this morning about these issues, in time to use for the July 23 hearings.

As I said earlier, we would like to know what we can discuss now, if possible. And then have the sanitized hearing available as soon as it can be made available.

Why don't you proceed with your statement?

STATEMENT OF LT. GEN. EUGENE F. TIGHE, JR., U.S. AIR FORCE, DIRECTOR, DEFENSE INTELLIGENCE AGENCY, ACCOMPANIED BY EDWARD COLLINS, VICE DIRECTOR FOR FOREIGN PRODUCTION; FRANK DOE, SOVIET ECONOMIC ANALYST; AND ALAN YURIDITSKY, CHINA MILITARY POLITICAL AFFAIRS ANALYST

General TIGHE. First of all, Senator Proxmire, in order to be most helpful, we have a prepared statement at the secret level and have tried to sanitize as much all-source intelligence down to that level as possible. Going beyond that, it might be most helpful to you if we immediately set about sanitizing this abbreviated prepared statement, emphasizing that information which would be useful to you. We will get that portion back to you very quickly.

Senator PROXMIRE. We very much appreciate that.

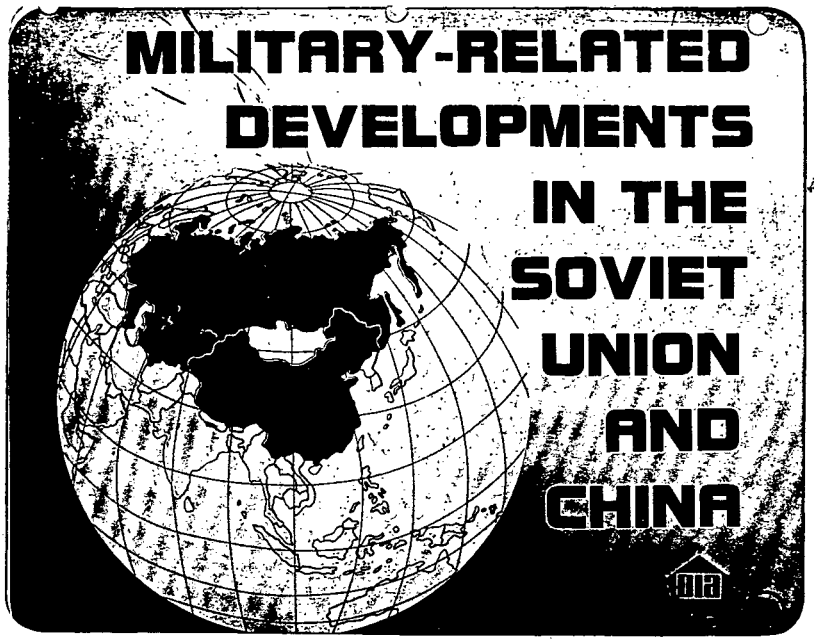
General TIGHE. I'd like to introduce the other individuals that I have with me, Senator Proxmire: Edward Collins is Vice Director for Foreign Production; Frank Doe is the Soviet specialist and economist; and Alan Yuriditsky, is a specialist on China.

We have Major Ken Minihan helping out on the arrangements, and Air Force Staff Sergeant Soloman who will work the slide projector for us.

Senator PROXMIRE. I might say for your information, too, that while Senator Jepsen is recognized, Congressman Wylie has not gotten the identification he should have. It will be forthcoming. At any rate, this is Senator Jepsen.

General TIGHE. If there is a need to answer more completely any of your questions using more highly classified intelligence, I will signify so, and we can furnish those answers at the close of this session in a more appropriate forum.

In accordance with your request, my presentation this morning will emphasize Soviet external affairs.



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The Chinese portion of the presentation will address political stability, modernization, and recent developments in strategic weapons.

My prepared statement for the record, provided to the subcommittee last week, includes a great deal of additional detail on internal affairs, force developments, and other issues for both the Soviet Union and China.

On the Soviet side, let me first briefly examine the resource allocations that provide the capability for projecting power and influence outside Soviet borders. I will then examine Soviet power projection and some of its costs.

I would like to stress at the outset that the Soviet activity we see in Afghanistan is a direct outgrowth of policies the Soviets have followed for decades, rather than a shocking discontinuity.

The People's Republic of China, of course, is a very different case. Here, a tentative opening to the West and an ongoing opposition to Moscow have created new challenges and opportunities for the Chinese and for ourselves.

While Chinese interests parallel ours in many areas, they intend to achieve a position in world affairs commensurate with their size and economic and military potential. It is not the Chinese's intention to become a U.S. ally, in our judgment. I will briefly cover the Chinese question after the Soviet presentation.

Despite the age and physical infirmities of several senior Politburo members, the Brezhnev regime has been further consolidated over the past few years. The power and authority of the General Secretary has increased. He has placed his associates and proteges in important party and state positions.

Soviet Military Trends

There has been basic continuity in the goals of the Soviet nationa strategy and foreign policy. Military power and its direct and indirect application have received increasing emphasis as an instrument the Soviet Union employs abroad, in conjunction with economic and political activities. This trend is evidence of growing Soviet confidence in its military capabilities and the political utility derived from their use.

Moscow's growing activism is consistent with its conviction that the "correlation of forces," the calculus of the struggle between socialism and capitalism, has shifted to their advantage.

The development of Soviet military capabilities over the last decade has, in their view, been one of the decisive factors in altering world political circumstances in their favor. Soviet military might both provides the tangible means to support and execute an expansionist policy, and colors the less tangible realm of national resolve.

LEONID BREZHNEV

GENERAL SECRETARY, COMMUNIST PARTY OF THE SOVIET UNION

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TRENDS IN SOVIET POLICY

- CONTINUITY IN GOALS
- INCREASED EMPHASIS ON MILITARY POWER
- GROWING CONFIDENCE IN MILITARY CAPABILITIES

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SOVIET PERCEPTION OF THE BALANCE OF POWER

"THE CORRELATION OF CLASS FORCES IN THE INTERNATIONAL ARENA HAS CHANGED ONCE AND FOR ALL IN FAVOR OF SOCIALISM. . . . THIS VERY IMPORTANT FACTOR MUST BE TAKEN INTO ACCOUNT WHEN EXAMINING ANY QUESTION OF THE INTERNATIONAL SITUATION . . ."

MAJ GEN I. SIDELNIKOV
RED STAR, 15 JANUARY 1980

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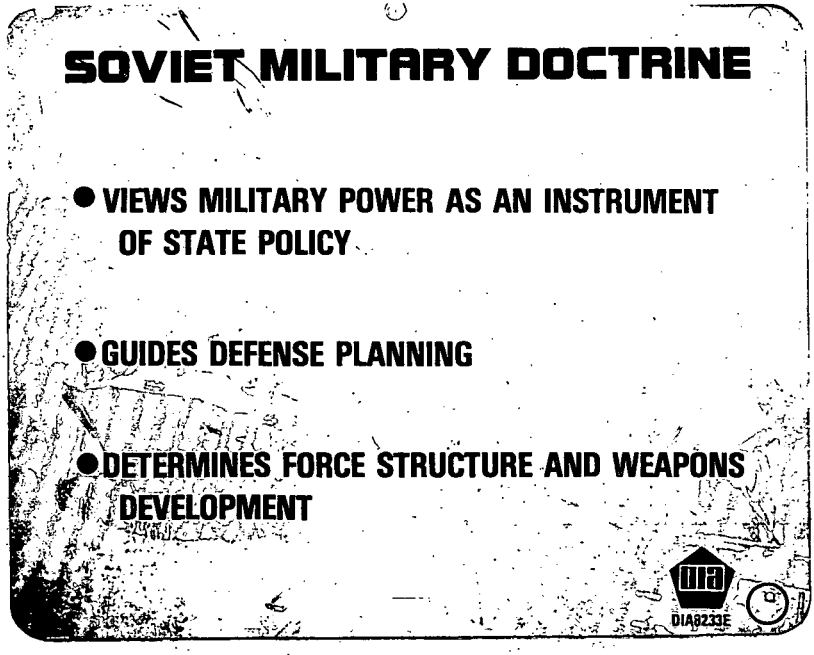
Soviet military capabilities are dictated by a doctrine that continues to view military power as a usable instrument of state policy. Military doctrine guides Soviet defense planning, and it determines the entire range of force structures and weapons development concepts.

The increasing capability of the Soviet military is a direct result of resource allocation policy. Soviet military spending has grown 4 to 5 percent per year since 1970, reaching the range of 58 to 70 billion rubles, in constant prices, last year.

Senator PROXMIRE. That's in real terms. Correcting for inflation.

General TIGHE. That's in real terms. The lower range, 58 to 63 billion rubles, shows Soviet outlays according to the U.S. definition of defense. The upper range adds additional activities that the Soviets may include in their definition. Nearly three-quarters of these outlays are for weapons procurement and research, reflecting the stress on hardware modernization.

In the dollar cost comparison for 1979, the bottom of the ruble range, 58 billion, is equivalent to $165 billion. Comparable U.S. outlays were $111 billion. The upper end of the range, of course, would be equivalent to nearly 200 billion U.S. dollars.



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DOLLAR COST COMPARISON FOR 1979

	(BILLIONS OF 1979 DOLLARS)
SOVIET UNION	165
UNITED STATES	111

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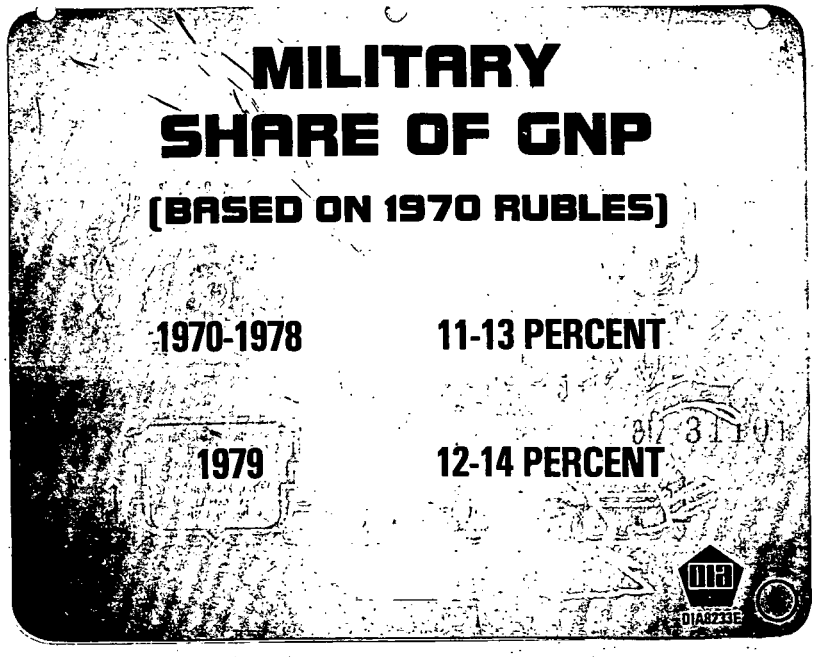
During most of the past decade, the military share of Soviet gross national product was 11 to 13 percent. However, the harsh winter of 1979 slowed Soviet economic growth, while leaving military spending unaffected. The result was an increase in the military share of the gross national product to the 12- to 14-percent level.

Economic Trends

Overall, Soviet economic growth has been slowing as a result of trends that will affect the eleventh Five-Year Plan period, 1981 to 1985. Labor force growth is gradually slowing. Capital investment is less and less effectivc, as unfinished construction projects are backlogged. Labor productivity is low due to absenteeism, alcohol abuse, lack of tangible incentives, and rising discontent at large industrial installations. The 1980 result will be at least a 4-percent shortfall from the original goal for total economic output, even according to the Soviet's own data.

Soviet energy output is also slowing, to a growth rate of between 2 and 3 percent in the 1980's. There is little prospect for a sudden drop in oil production, in our judgment, though gradual leveling is expected. Natural gas will have continued rapid growth. Nuclear energy will rise fairly quickly, not being limited by environmental concerns. Nevertheless, we will see nuclear plants produce only a few percent of their total energy output despite a great deal of attention.

Coal production rose only 1 percent between 1976 and 1979 and continued growth in that area will be very slow.



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SOVIET ECONOMIC GROWTH

- LABOR GROWTH SLOWING
- INVESTMENT BACKLOGGED
- PRODUCTIVITY LOW
- 1980 SHORTFALL

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SOVIET ENERGY OUTPUT

TOTAL: 2-3 PERCENT GROWTH

OIL: GRADUAL LEVELING
GAS: CONTINUED GROWTH
NUCLEAR: REMAINS SMALL
COAL: CONTINUED STAGNATION

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Future Soviet economic growth will average roughly 2 percent annually as a result of these trends. By 1985, the military share of the gross national product will be over 15 percent, if the rate of spending growth is not reduced. There is no indication yet of a spending slowdown for defense.

U.S. Economic Sanctions

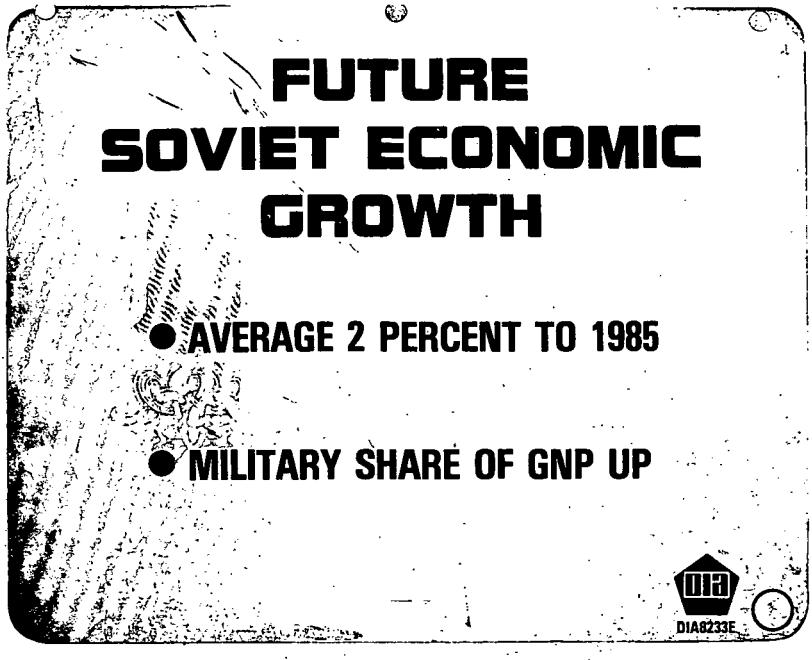
U.S. economic sanctions have left Soviet economic growth projections unaffected. Alternative suppliers for grains, such as Argentina, have been located. The added cost to the Soviets is roughly $1 billion and their supply shortfall will be about 3 percent. Industrial imports are also generally available from other Western countries, though in a few specialized areas some impact is being felt.

Nearly 75 percent of our exports to the Soviet Union had been agricultural, in any case.

Military Production

Despite economic difficulties, Soviet military production continues to gradually increase, reflecting longstanding policy goals. And though the output of military hardware showed variations among different systems, the output of fighters, tanks, and missiles all increased in 1979. I'd like to point out that the majority of these missiles are tactical, defensive weapons for use by the general purpose forces.

Some products did show actual declines in 1979, such as artillery, where new models, mostly self-propelled, are being introduced. I also should mention that we have revised [security deletion] our estimates of [security deletion] aircraft output, based on the evidence acquired since last year's testimony.



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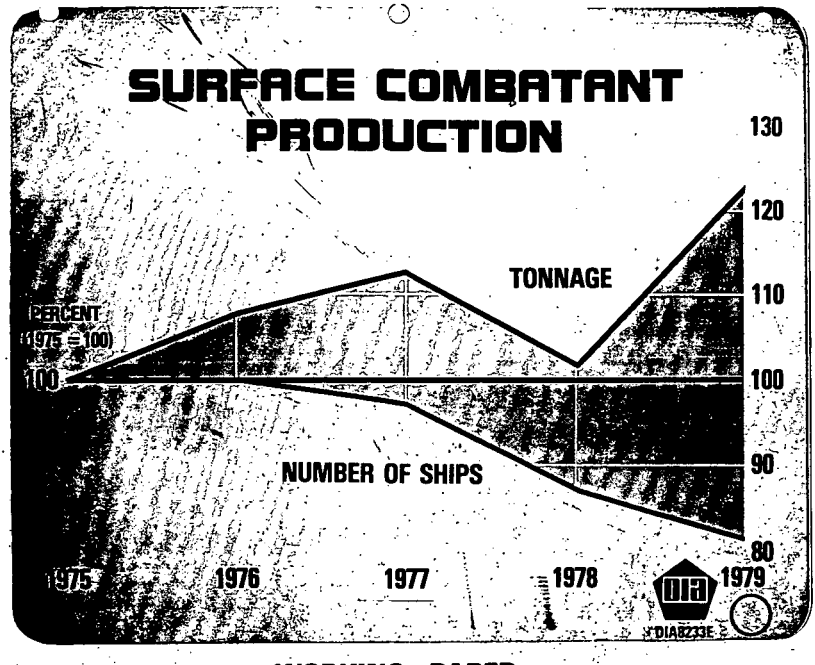
You will recall that the [security deletion] represented the largest single weapons systems procurement program in the Soviet Union.

As is true for most modern navies, larger and more capable, though fewer, surface combatants are also appearing. This is in conjunction with Soviet stress on power projection. The key factor here is not simply quantity. Both quality and sophistication are increasing.

In transport aircraft, the AN–12 is being replaced by the IL–76. The new transport carries more, for longer distances, yet can use a shorter runway. This is a tremendous increase in capability for the Soviets.

Another example is aircraft modernization in the tactical air forces where almost all the aircraft were introduced in the 1970's. These new models are also much more capable than their predecessors.



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TRANSPORT AIRCRAFT

	AN-12	IL-76
IOC	[Security deletion.]	
MAXIMUM PAYLOAD	20MT	40MT
PARATROOP CAPABILITY	[Security deletion.]	
FLIGHT RADIUS	[Security deletion.]	
MINIMUM RUNWAY	[Security deletion.]	

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AIRCRAFT MODERNIZATION

	1978	1979
1970'S AIRCRAFT IN TACTICAL AIR FORCES	[Security deletion.]	

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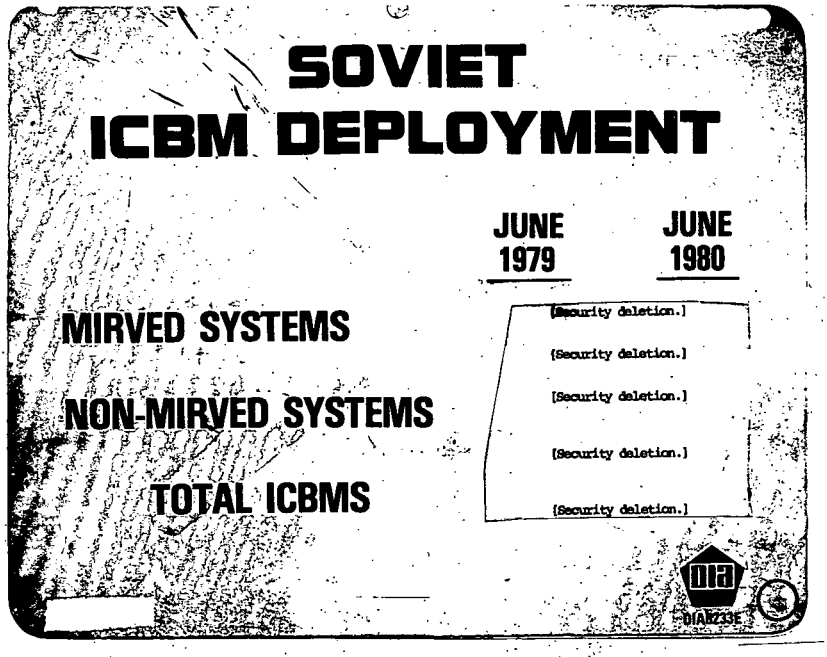
The same is true, of course, in Soviet ICBM deployment where MIRVed systems with greatly improved accuracy are a rising share of the total.

These production trends are likely to continue in the future, as indicated by the expansion of Soviet military industry. For example [security deletion] missile plants have been expanded, and [security deletion] aircraft plants are currently being enlarged, portending higher output levels in the future.

U.S. Technology Transfer

One aspect of production I would like to mention is the Soviet use of equipment produced with the aid of our technology.

U.S. industry supplied equipment such as computers, transfer lines, and a foundry, which make up about one-eight of the cost of the Kama River truck plant, the largest the Soviets have. Kama trucks are now being used by Soviet military forces in both Afghanistan and Eastern Europe. There are over [security deletion] trucks in the Soviet military forces in Germany. Lagging economic growth and the needs of the military combine to make transfer of technology a high priority for the Soviets, and their acquisition effort continues throughout the world.



MILITARY INDUSTRY

- [Security deletion.] MISSILE PLANTS EXPANDED SINCE 1976
- [Security deletion.] AIRCRAFT PLANTS CURRENTLY EXPANDING

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TECHNOLOGY TRANSFER

- U.S. SUPPLIED KAMA RIVER TRUCK PLANT
- KAMA TRUCKS IN AFGHANISTAN AND EUROPE
- SOVIET ACQUISITION EFFORT CONTINUES

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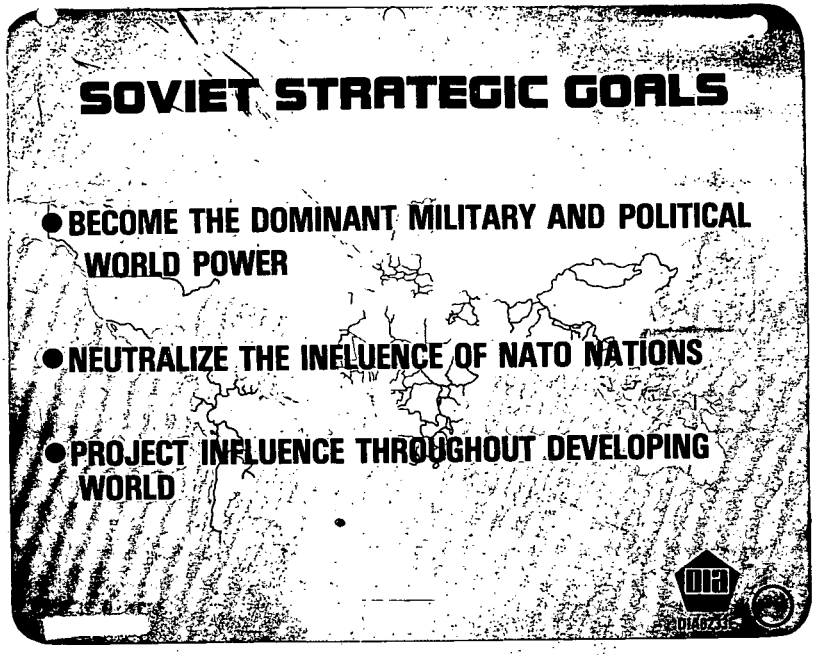
Strategic Goals

The ultimate strategic goal of the Soviet leadership remains to become the dominant military and political power in the world. Soviet leaders have established policy objectives based on this goal and their perceptions of the world situation.

An important objective is to neutralize the influence of NATO. Another key objective is to project power and influence throughout the developing world.

We see the Soviet Union using many forms of power projection—political, economic, and military. These methods allow the Soviets to pursue their objectives without risking a nuclear confrontation with the United States.

The Soviets have a unique ability to exploit opportunities at levels below direct military action. Briefly, I'd like to discuss the Soviet efforts in the final four areas shown on this graph.



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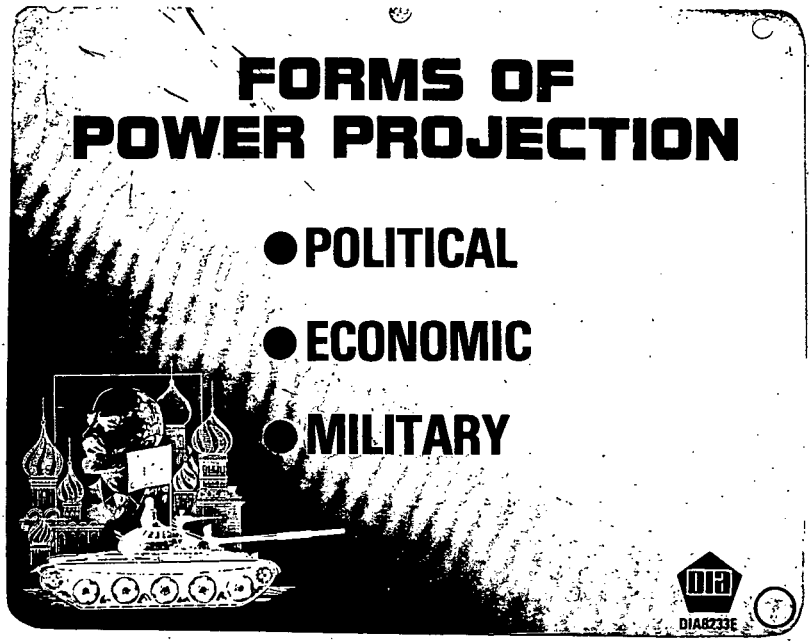

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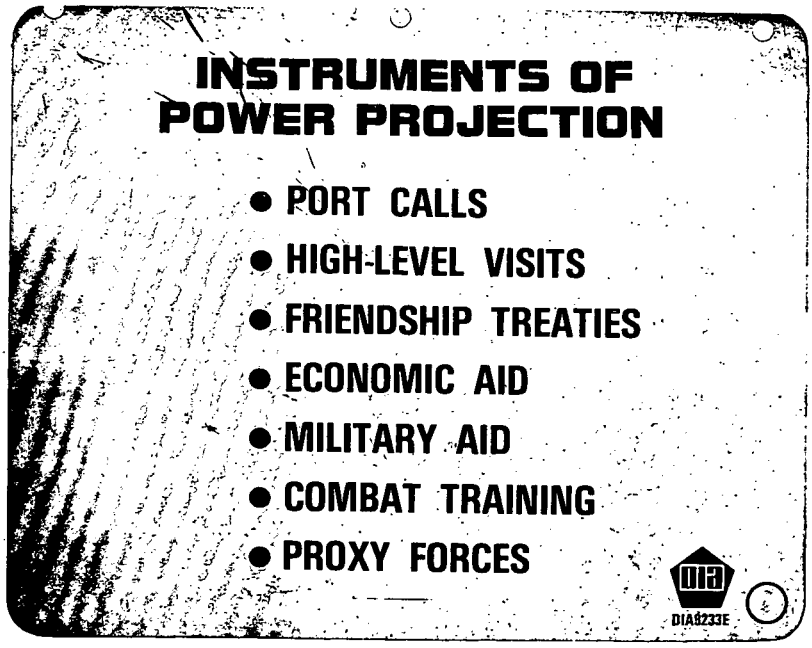

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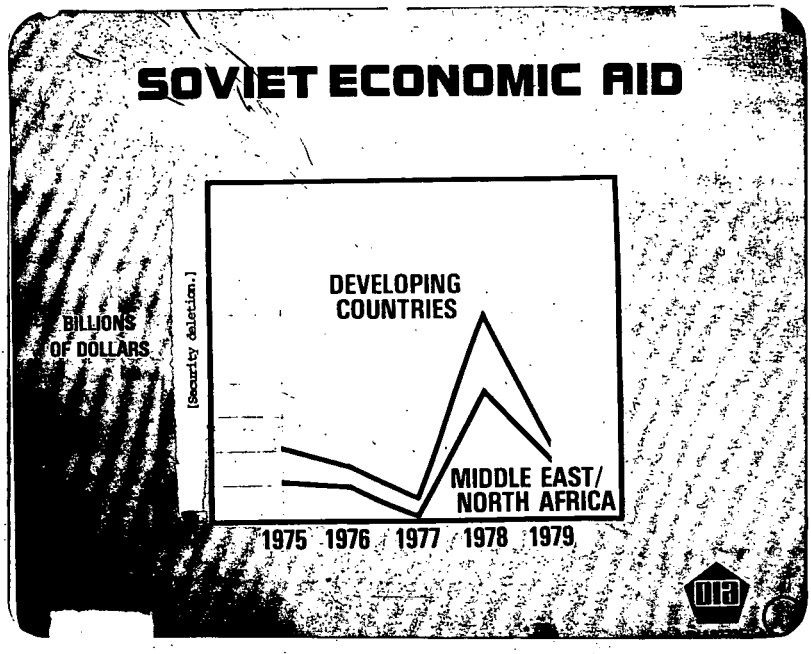
Soviet Foregin Aid

While total Soviet economic aid commitments have varied greatly from year to year, the choice of aid recipients has been very selective. The Middle East and north Africa have received over half the total. These figures exclude economic support for Cuba of $4 billion in 1979, as well as the smaller subsidies for other less-developed Communist countries.

Pure economic aid has resulted in larger numbers of Soviet economic technicians in the recipient countries.

Another instrument used by the Soviets is military exports. In the past 5 years, Soviet military exports to the non-Communist developing countries have totaled $25 billion, with nearly two-thirds of that amount going to the Middle East and north Africa. These exports have begun to include very sophisticated equipment, such as the Mig-23, Mig-25, and T–7 tank. Greater sophistication brings about a more direct dependency upon the Soviets for parts and services.



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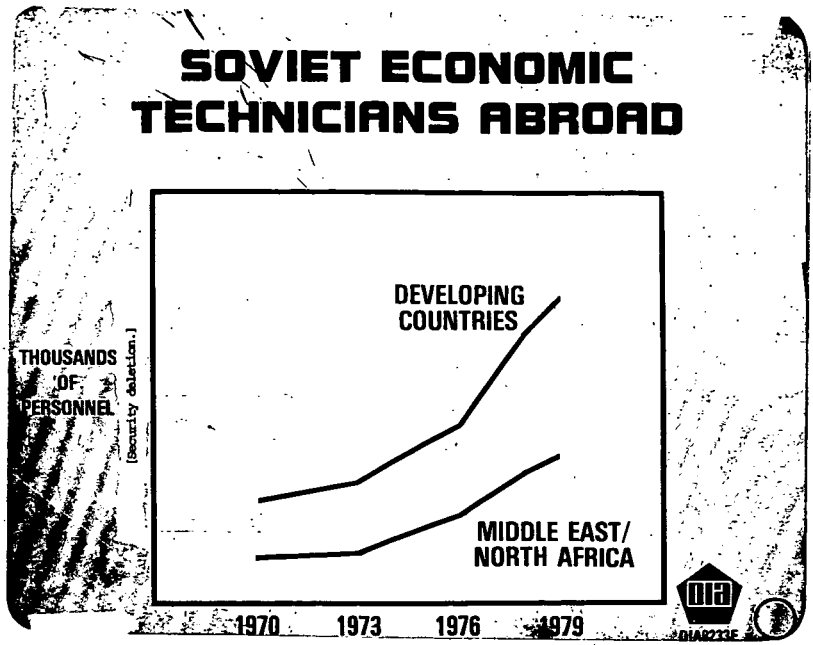

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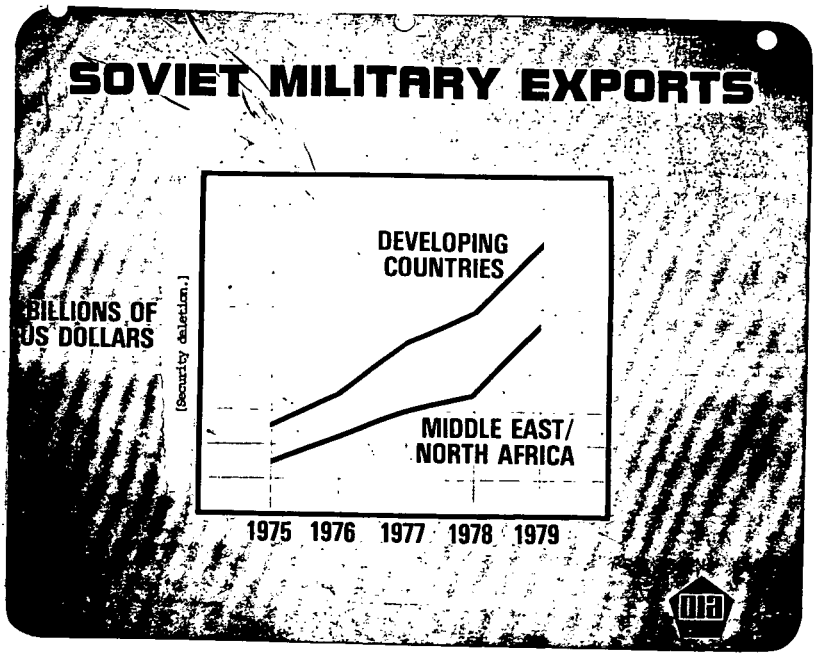

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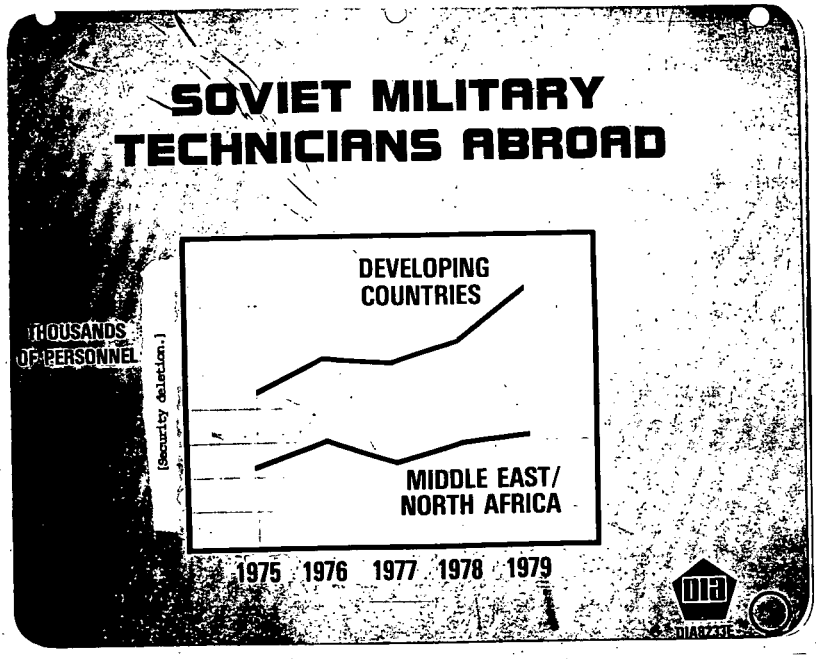
Accompanying these exports, Soviet military technicians abroad have increased over 50 percent since 1975.

But a reverse flow of personnel has also occurred. The number of foreign military trainees in the Soviet Union has risen sharply in the last 5 years. Most of the increase has come from Latin America.

Soviet Proxies

The Cubans and East Europeans are the best known Soviet proxies. Although Cuba's initial military successes in Angola and Ethiopia more recently have degenerated into wars of attrition, Cuban military advisers and troops remain active throughout Africa and the Middle East. The East Europeans have specialized in consolidating the security of pro-Soviet regimes by training security and intelligence operatives, penetrating local goverments, and developing orthodox local Communist parties and front organizations. The number of East European civilian technicians in developing countries has risen by a factor of [security deletion] since 1965. While Cuba and East European countries are obvious Soviet proxies, a more subtle example is Vietnam, which, with Soviet support, is furthering its own and Soviet goals in Southeast Asia vis-a-vis China.



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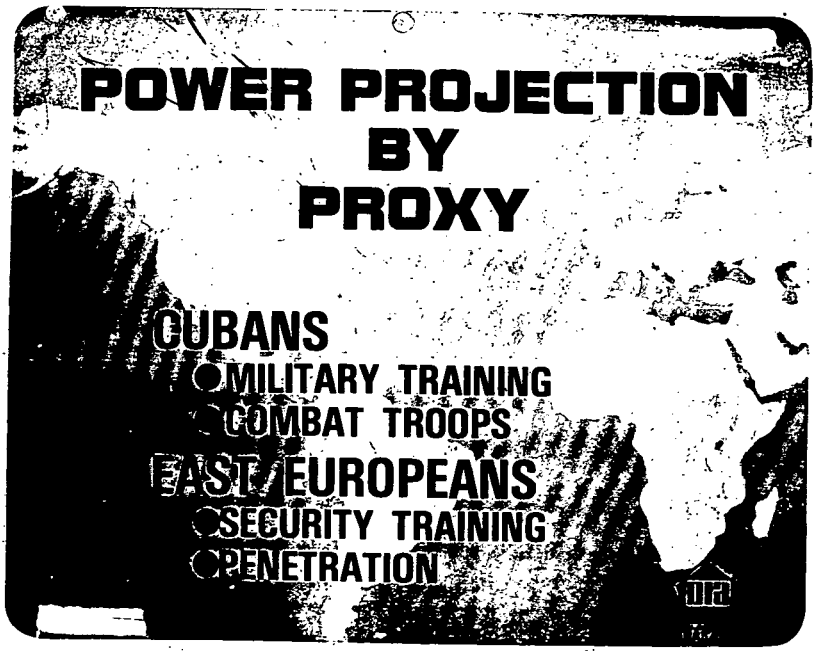

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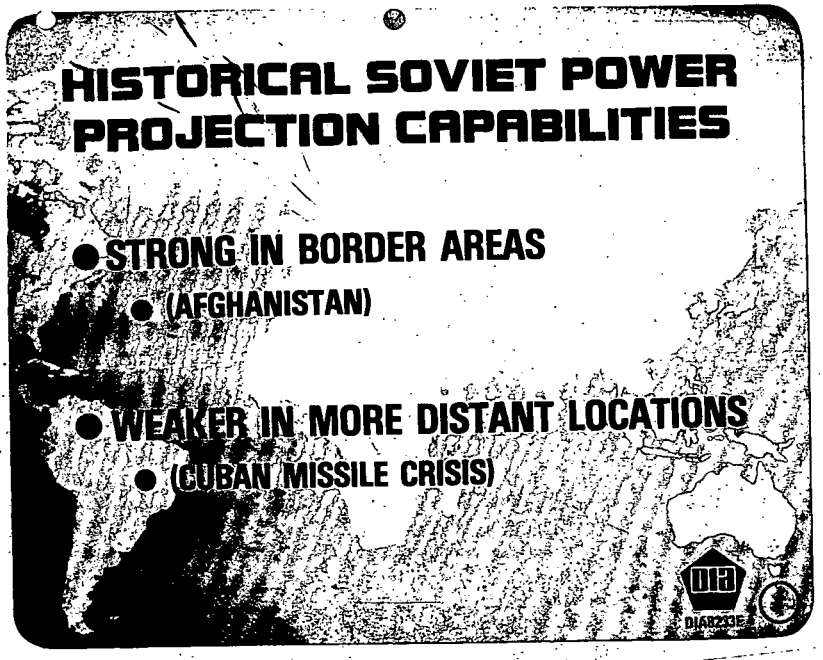
While proxy forces have played a major role in the past, we foresee a growing role for the Soviet's general purpose forces. This will have a varied impact on both the traditional East/West and North/South equations. Geography is an important factor in these equations. The Soviets have always maintained forces capable of operations in border areas as a means of peripheral power projection, while being weaker in more distant locations. This is consistent with the Soviet Union's traditional status as a major land power. Soviet advantages in peripheral power projection are evident today in the northern tier of the Middle East, which stretches, of course, from Turkey east to Afghanistan. And all of these countries are within easy reach of Soviet ground, tactical air, and airborne forces.

New Military Developments

The Soviets have embarked on a diligent, long-term program to develop new types of military forces which will provide a major capability for power projection. They have the means to deploy lightly equipped combat forces, but are quite limited in transporting large combat units by air. Such forces could be expected to cope successfully with the kind of militarily weak opposition which they'd encounter in most of the developing world. An upgraded navy includes a new class of large amphibious assault ships to expand their sealift. The first two of a new class of aircraft carriers are now at sea. Larger carriers are planned for the future. Improved air transport capability is also being developed, as mentioned earlier. Seven well-armed Soviet airborne divisions, including air-transportable light armored combat vehicles, are ready for deployment.



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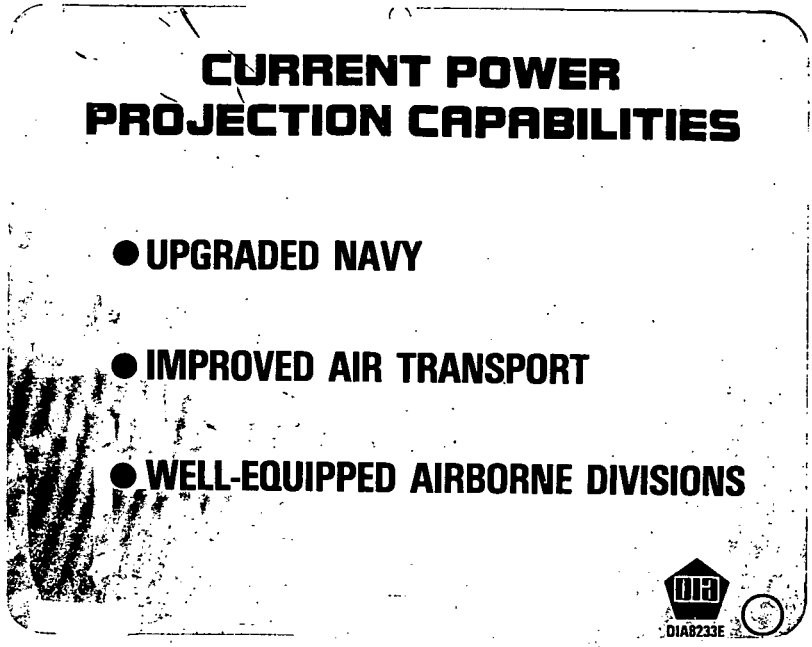

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AFGHANISTAN

Now I'd like to turn to events in Afghanistan. This country has long been subject to Soviet influence through economic and military

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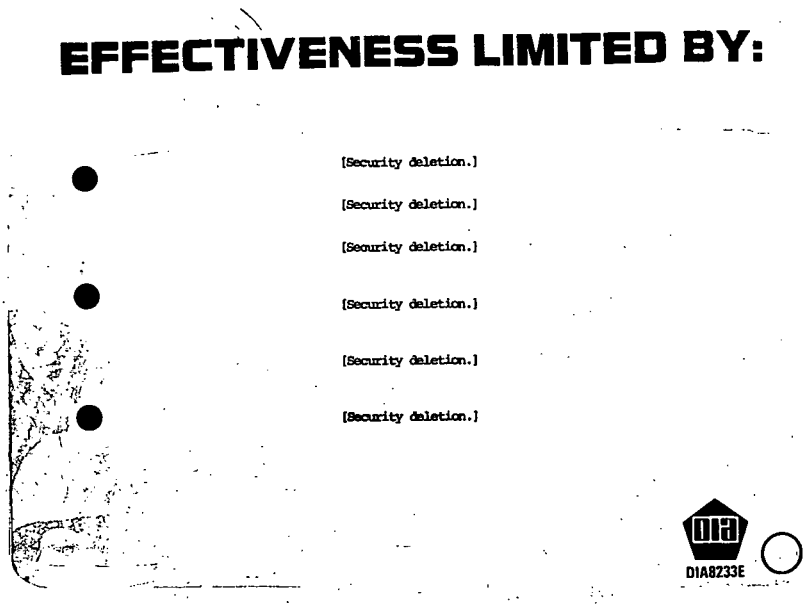
aid, trade, and subversion. The invasion of the country, however, has clearly demonstrated Soviet willingness and capability to directly intervene with military power outside the Warsaw Pact. While the situation in Afghanistan posed no real threat to the territorial integrity of the Soviet Union, the Soviets responded rapidly and massively to political events in that country. Approximately 120,000 Soviet troops have been committed to the operation, including 85,000 in Afghanistan itself. The remainder are supporting the operation from the Soviet side of the border. Units have been formed to employ a combination of [security deletion] to combat insurgent forces.

Although they are able to quickly react to insurgent activity, overall Soviet troop effectiveness is limited by [security deletion]. The techniques they are employing are modifications of normal Soviet tactics, but they reflect the unique counterinsurgency situation and would not necessarily be employed on a conventional battlefield. The types of units currently being withdrawn are neither suitable for this kind of operation nor necessary for the current operations in Afghanistan.

Soviet air power has played a significant role in the invasion of Afghanistan. Air transport was a key factor in the initial airlift of troops and equipment, and it continues to have an important role in the movement of men and supplies. There is increasingly active close air support to the ground forces by fighter bombers and by helicopters.

Given the rugged, mountainous terrain and the elusive nature of insurgent targets, the helicopter is generally well-suited to Soviet requirements in Afghanistan. The Soviets have deployed [security deletion] to provide both firepower and mobility.



ROLE OF SOVIET AIR POWER

- [Security deletion.]
- [Security deletion.]
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[Security deletion.]

[Security deletion.]

MI-24 HIND-D HELICOPTER

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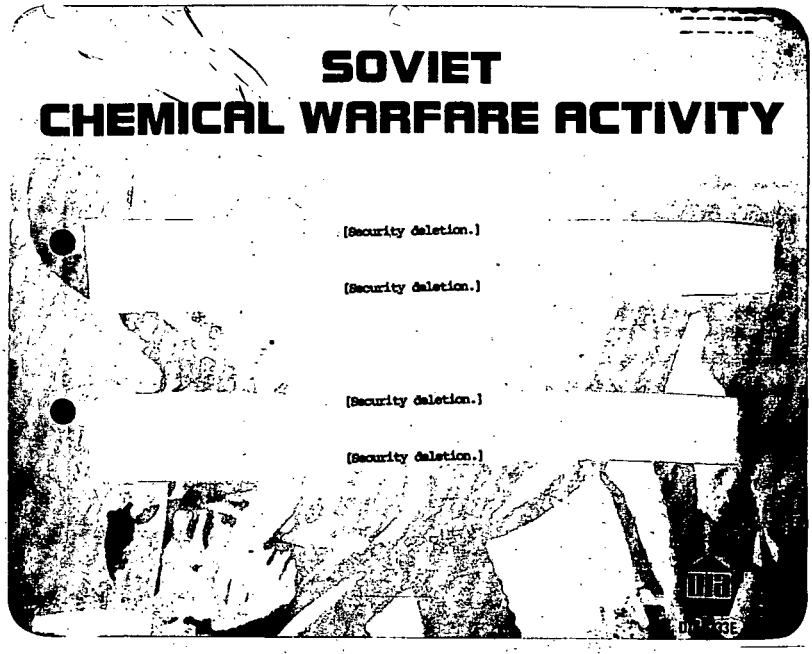
Soviet forces in Afghanistan have probably used irritant agents on a number of occasions. There have been unconfirmed but compelling refugee reports of the use of nonlethal and/or lethal agents within the last 18 months, as well.

In spite of the size and quality of their forces, the Soviets are experiencing problems. [Security deletion.]

To achieve their objective, the Soviets will have to maintain control of [security deletion] into an efficient and reliable counterinsurgency force. From a purely military standpoint, an immediate increase in [security deletion]. However, Soviet leaders may attempt to control the situation [security deletion].

Thus far the costs of the Afghanistan invasion have been relatively low. The incremental personnel and operations costs amount to only a few tenths of 1 percent of total Soviet military spending. When the lost equipment and hardware are replaced, this figure will rise a bit,



STATUS OF SOVIET EFFORTS

[Security deletion.]

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SOVIET REQUIREMENTS

[Security deletion.]

[Security deletion.]

[Security deletion.]

[Security deletion.]

[Security deletion.]

[Security deletion.]

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but as long as force levels remain roughly as they are now, the military situation in Afghanistan will have only a very minor impact on the Soviet economy as a whole.[1]

IRAN

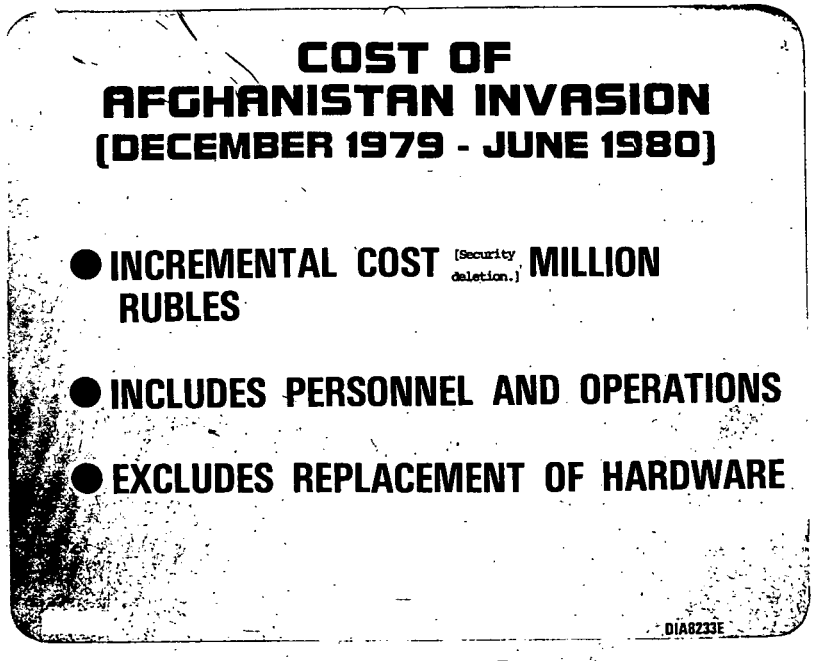
Turning to the Iranian situation, the Soviet ground forces opposite the northwest border consist of about [security deletion]. There is no indication at this time that these forces are preparing to move into Iran. [Security deletion.]

We have concluded that the [security deletion]. I must reiterate, however, there are no indications of any imminent Soviet invasion.

Soviet capabilities in nearby regions are also considerable, and the scope of these actions will probably grow in the near future. Ongoing programs will give them increasing power to project military and political influence abroad. Although the Soviets expect occasional reversals, they state that basic trends favor the Soviet Union. Therefore, more Soviet assertiveness is to be expected as the Soviet leadership seeks to achieve its foreign policy goals.

CHINA

Now if I may turn to China. The current Chinese leadership is determined to insure political stability by establishing an orderly succession process and a continuation of government by collegium. By insuring the continuity of succession, the leadership expects to advance the country's modernization in all sectors and to gain worldwide recognition of China as a major power.



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[1] The slide presented is a security deletion.

SOVIET POWER PROJECTION
SUMMARY

- CAPABILITIES NEARBY CONSIDERABLE
- INCREASING POWER ABROAD
- SOVIETS PERCEIVE FAVORABLE TRENDS
- MORE ASSERTIVENESS EXPECTED

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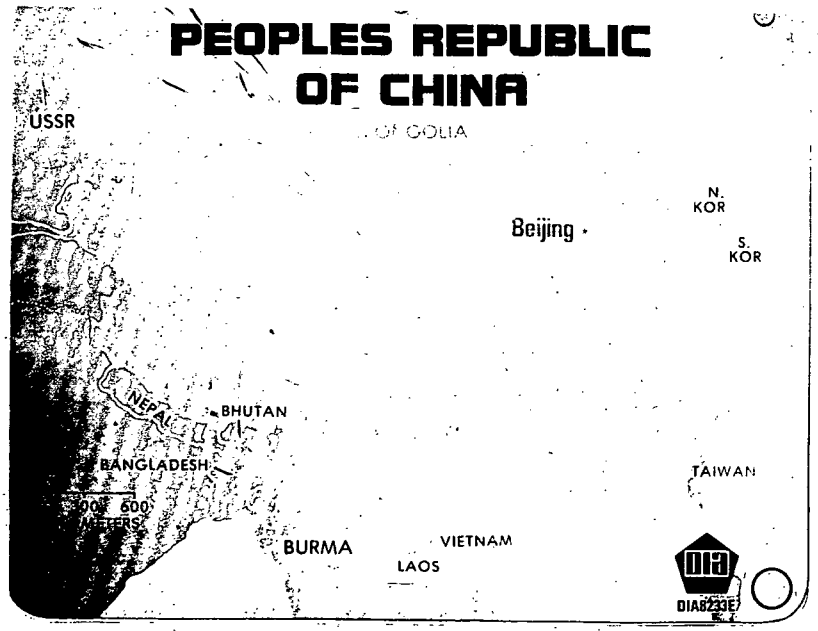
PEOPLES REPUBLIC OF CHINA



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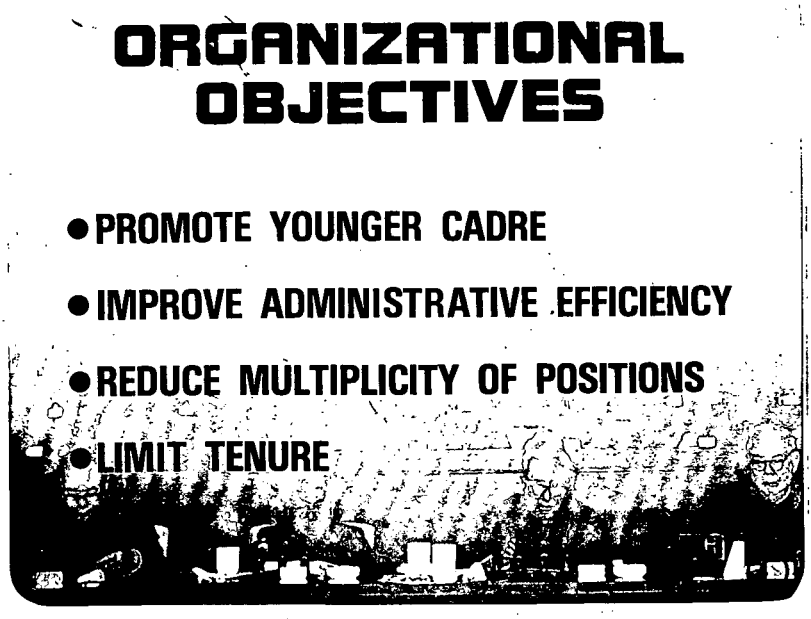
Earlier this year, the National Party Congress reestablished the Central Secretariat. The 11 men in the Secretariat are considered to be among China's top experts in economic, political, and military matters. They also personify the regime's policy of promoting relatively younger cadre to the highest positions in the government thus institutionalizing an orderly succession.

The Secretariat assumes some functions of the governing Politburo. It's authority to direct administrative affairs and initiate party policy—coupled with the personal capabilities and strong personalities of the secretaries—will guarantee its effectiveness.

Improved administrative efficiency is expected to be achieved by reducing the number of individuals holding concurrent positions in the party and state organs. To set an example, Deng Xiaoping has already relinquished his military position as chief of the General Staff Department and has announced that he will resign from his Vice Premier position this fall. In keeping with this developing policy Premier and Party Central Committee Chairman Hua Guofeng may relinquish his premiership later in the year. If this becomes a general practice, more individuals who support the current pragmatic policies will be able to assume positions of responsibility in the national leadership. A plan for limiting terms of office to preclude life-time occupancy of key positions is also being studied.

A recognized impediment to a vigorous, enlightened leadership is the number of Long March veteran party members who occupy key posts in the government. A new category of position, designated as "advisor," has been created. Thus, those veteran leaders who are



physically able to function effectively may retain their positions; others who are less vigorous will be reassigned as "advisers" outside of the chain of command.

Promoting successors, retiring ineffective senior leaders, and streamlining leadership groups are designed to create a core of dedicated managers who will vigorously advance the current modernization objectives.

"Four Modernizations"

The "effectiveness of managers" and "economic management of modern enterprises" are new themes the Chinese have introduced into their "four modernizations" rhetoric. Perhaps as a result of contacts with the West, basic problems in the balance between industry and agriculture have surfaced. The leadership has announced that the economic planners need time to sort out priorities and resource availability. Thus, the years between 1979 and 1981 have been described as a time for readjusting, restructuring, consolidating, and improving the economy, which must lay the foundation for future development.

A major aspect of the economic adjustment is to scale down and redirect resources away from heavy industry toward light industry and agriculture. High priority is still assigned to the energy field—coal, oil, and electric power—and to the transportation and communications infrastructure.

Defense Industries

Indications are that the economic readjustment period applies to defense industries as well. Until 1981, the defense industries will concentrate on laying the groundwork for the future by acquiring foreign technology and managerial practices. Underutilized defense plants are

to produce civilian goods for domestic and foreign sale. The objective here, of course, is to strengthen the overall economy more rapidly by tapping the skilled manpower and more advanced production machinery controlled by the large defense industrial sector. A strengthened economy in turn, will speed defense modernization in the mid eighties and beyond.

External Objectives

While internal goals are in transition, China's external objectives remain constant and have achieved a degree of success. Efforts to improve relations and influence her regional neighbors show China's fear of Soviet encirclement. Conversely, the regional neighbors have a very real concern for a potentially dominant China in Asia. The divergent perceptions have complicated China's relations in the region. The relations range from armed confrontation with Vietnam to close cooperation with Japan.

The Chinese bilateral aid programs to the developing countries are among the world's most successful. Although fiscal constraints preclude provision of substantial amounts of military and economic aid, such aid is generally both technologically adaptable and relevant to the recipient's needs. In 1979, China began to use military sales as a source of foreign exchange, discontinuing its policy of granting free military aid to politically selected developing countries. [Security deletion.]

CURRENT MODERNIZATION OBJECTIVES

- IMPROVE MANAGEMENT OF ENTERPRISES
- REALIGN RESOURCE ALLOCATIONS
- STRENGTHEN OVERALL ECONOMY

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EXTERNAL OBJECTIVES

- POWERFUL SOCIALIST STATE
- SPOKESMAN FOR DEVELOPING COUNTRIES
- PREEMINENCE IN ASIA
- COUNTER SOVIET WORLDWIDE INFLUENCE
- SECURITY OF BORDERS

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PRC ECONOMIC AID 1975 - 1979

SUBSAHARAN AFRICA _____

ASIA _____

MIDDLE EAST/NORTH AFRICA ___

LATIN AMERICA _____

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Sino-Soviet Relations

Sino-Soviet bilateral relations continue to be influenced by deep-rooted antagonisms growing out of ideological and territorial disputes and ethnic animosities.

However, the annual Sino-Soviet trade agreement was concluded recently with no major changes from previous years. The total trade is somewhat reduced, but this probably reflects China's increased trade with the West and decreases reliance on Soviet goods, rather than a policy change.

Negotiations on an agreement to replace the 1959 Treaty of Frendship, Alliance, and Mutual Assistance, which was abrogated by China last year, are still in abeyance.

SINO-SOVIET RELATIONS

- **IDEOLOGICAL DISPUTES**
- **TERRITORIAL DISPUTES**
- **ETHNIC ANIMOSITIES**

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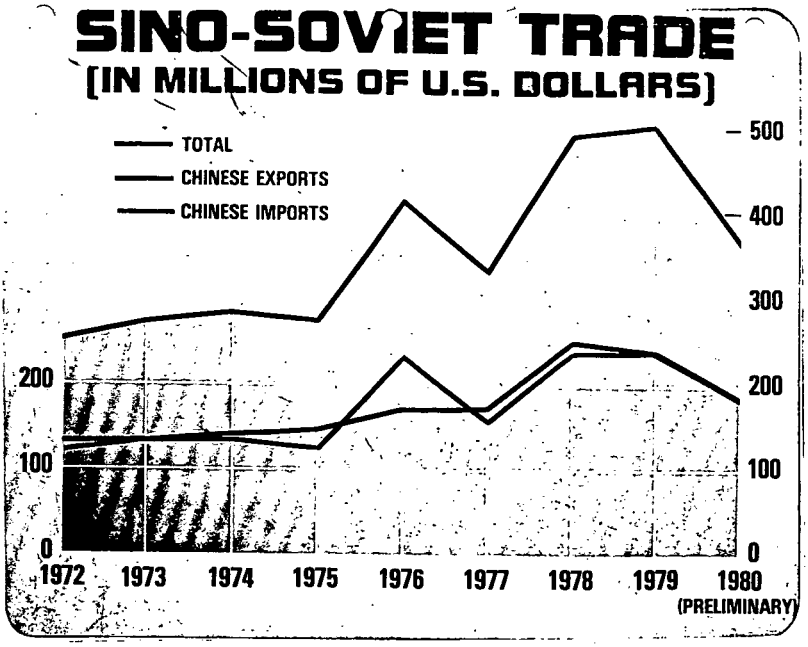

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The first plenary session for a political agreement to replace the 1950 treaty was held in Moscow last October. The unrealistic demands presented by China virtually assured that the negotiations would be bogged down in procedural and agenda disagreements.

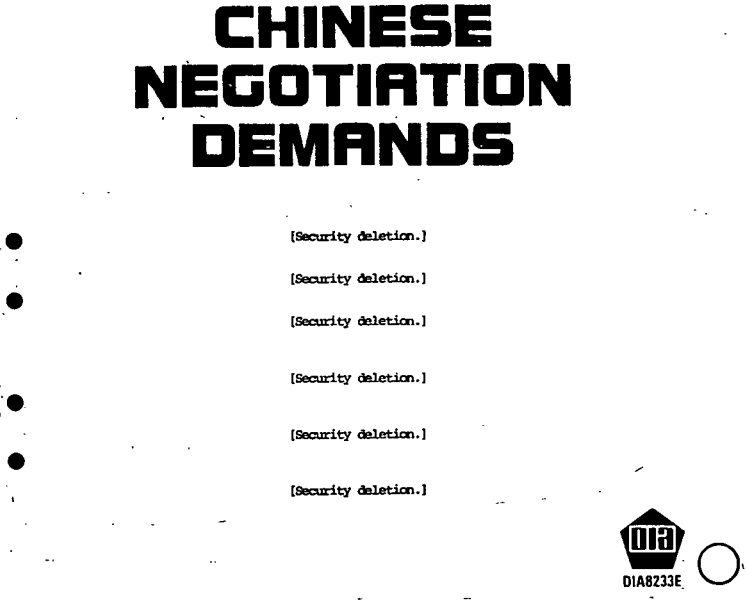
The Soviets did not present a list of demands, per se, but rather suggested a series of principles to govern future relations.

There appears to be little chance for improvement in bilateral relations in the near term. China's leaders brought political negotiations to a halt following Moscow's invasion of Afghanistan.

They have stated that relations cannot be improved or tensions reduced while Moscow continues hegemonistic actions. Instead, Chinese rhetoric in the international area has become more pointedly anti-Soviet. The Chinese continue to call for a complete withdrawal of Soviet forces from Afghanistan and are unlikely to agree to a resumption of negotiations until that occurs.

While desiring improved state-to-state relations, the Soviets are not prepared to make significant concessions on territorial issues or arms reductions on the border. In the Soviet view, accommodation must be based on unilateral concessions from China, and in light of Chinese initiatives and momentum on the international scene, this must appear as a very unlikely prospect.[1]

During the past year, both the Chinese and Soviets have [security deletion].



[1] The slide presented is a security deletion.

SOVIET PRINCIPLES FOR FUTURE RELATIONS

- PEACEFUL COEXISTENCE
- NON-USE OF MILITARY FORCE
- ANTI-HEGEMONISM
- BILATERAL CONSULTATIONS
- MUTUAL RESTRAINT
- EXPANSION OF CULTURAL EXCHANGES

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SINO-SOVIET RELATIONS ARE UNLIKELY TO IMPROVE

- CHINESE DEMAND SOVIET WITHDRAWAL FROM AFGHANISTAN
- SOVIETS ARE UNWILLING TO ACCEDE TO CHINESE ON DISPUTED ISSUES

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A mutual concern to counterbalance the U.S.S.R., coupled with Chinese interest in Western technology, provided the catalyst for expanding relations between China and the West.

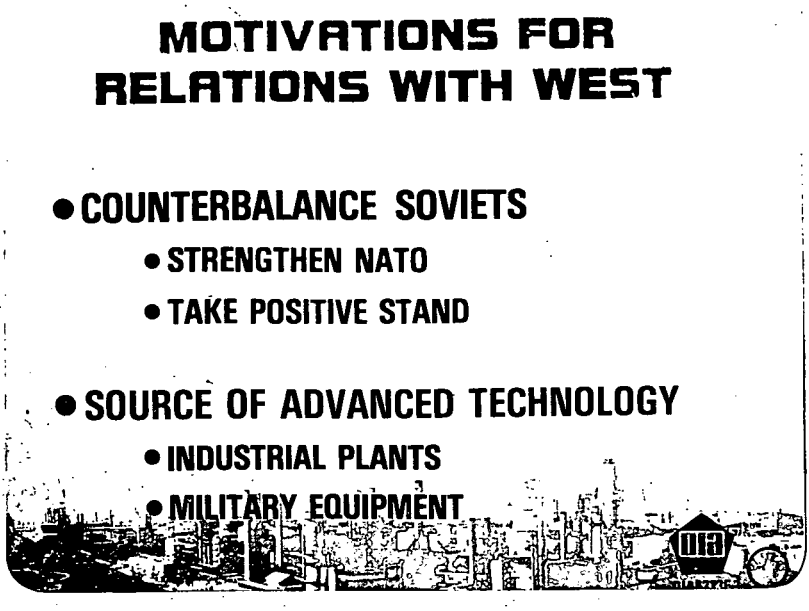
Chinese interests and efforts in the world arena frequently parallel Western objectives, and there is a mutual interest in projecting at least a facade of cooperation for Soviet consumption. The Chinese are vocal in their insistence that the main Soviet threat is to Europe. They strongly support increased military participation in NATO by Western Europe to insure the validity of the alliance. Chinese leaders also have urged their Western counterparts to take a stronger anti-Soviet stance and have stated that Western indecisiveness permits aggression and exploitation of world trouble spots by the Soviets and Soviet surrogates. A direct result of Western indecisiveness, in the Chinese view, has been the Soviet invasion of Afghanistan, which is seen to be indicative of Soviet designs on the Persian Gulf states.

While the Chinese have been unsuccessful in transmitting their view of the Soviet threat to Western European nations, they have elicited Western cooperation to improve Chinese capabilities vis-a-vis the Soviets.

The Chinese realize the shortcomings of their own industrial and weapons design capabilities, and have stated that they wish to obtain foreign production technology and licensing arrangements rather than finished items.

Chinese Military Delegations

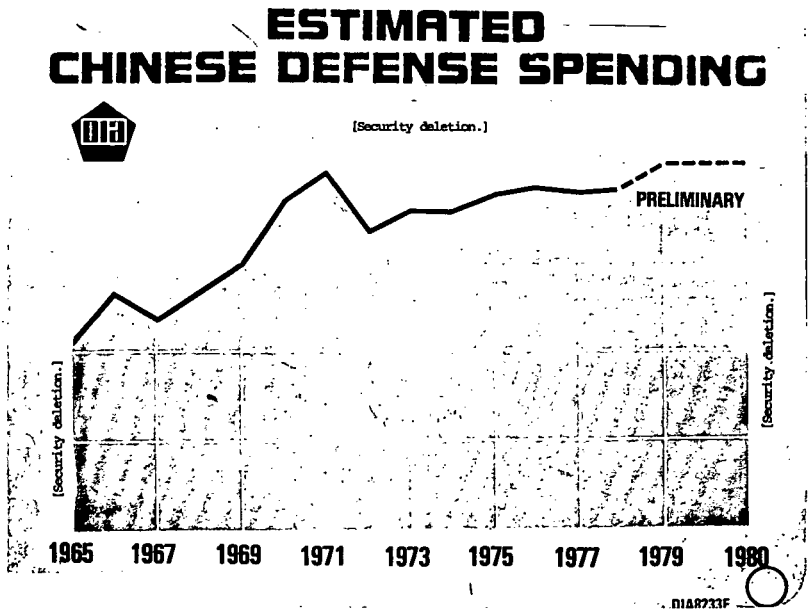
The slight increase in 1979 defense spending was probably due to the incursion into Vietnam. The projected leveling off in 1980 reflects



overall fiscal constraints which contribute to Chian's inability to acquire foreign weapon systems. The numerous Chinese military delegations to Western Europe have studied a wide range of weapon systems and technology, but few purchases have been made. Contacts with the West have enabled the Chinese to obtain free advise about advanced weapons, vast amounts of technical literature, and in some cases training for production engineers and technicians. China may be applying freely acquired technology to the production of indigenous weapons, [security deletion].

In contrast to the military delegation visits to Europe which conconcentrated on weapons systems, the two Chinese military delegations which visited the United States [security deletion] than the acquisition of advanced technology.[1]

While the high-level military delegations were in the United States, China's credibility as a military and political power was enhanced by the successful ICBM launch into the Pacific. This was China's first broad ocean test of the CSS–X–4 ICBM, a missile capable of reaching all of the continential United States. Equally significant for Chinese force developments was the successful 10,000 mile roundtrip voyage of the 18-ship task force supporting the launch in an open ocean impact area near the Fuji Islands—another first for the Chinese. The Chinese have downplayed the second IBCM launch [security deletion] which fell short of the intended impact area. The Chinese are expected to conduct additional tests of the missile and are in the process of [security deletion] for their ICBM's. When completed and operational, the Chinese will have elevated their nuclear missile capability from a regional to a world-wide capability.



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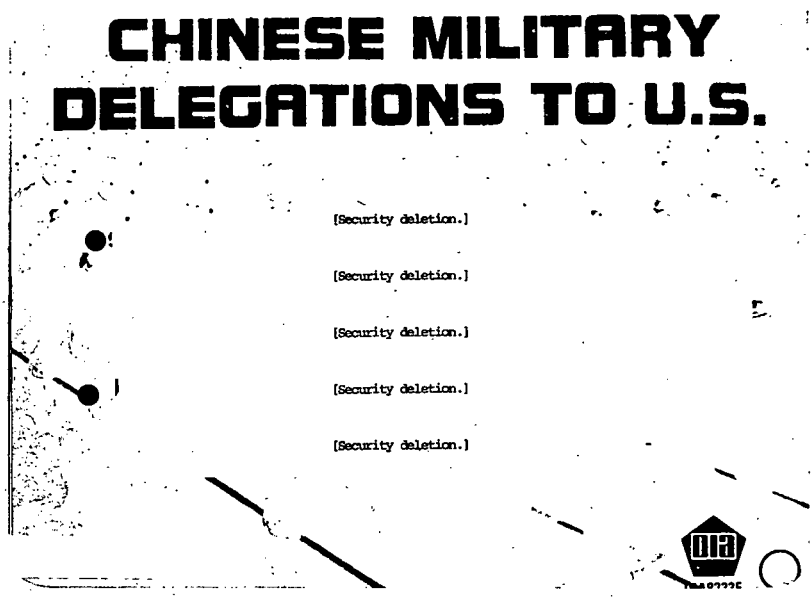

That's the conclusion of my remarks, Senator Proxmire.

Senator PROXMIRE. Thank you, General, we appreciate your testimony.

[The prepared statement of General Tighe follows:]

PREPARED STATEMENT OF LT. GEN. EUGENE F. TIGHE, JR.

Military-Related Developments in the Soviet Union and China

This statement examines the impact of internal, external, and purely military affairs on the increasing power of the two major Communist countries, the Union of Soviet Socialist Republics (U.S.S.R.) and the People's Republic of China (P.R.C.). The U.S.S.R. has increased its ability to influence events throughout the world by following a policy of allocating increased resoures to the full range of power projection instruments and using these instruments decisively. This policy has culminated in the direct exercise of military power in Afghanistan.

The People's Republic of China is currently in a period of economic retrenchment and its leadership is taking action to strengthen internal political stability. In the international arena, China continues to stress the need to counterbalance Soviet actions throughout the world, and has also continued to improve relations with the West. China's international prestige was enhanced by its first successful launch of an Intercontinental Ballistic Missile to an open ocean impact area.

I. Soviet Internal Affairs

A. POLICY TRENDS AND ATTITUDES

The Soviet leadership continues to advance in age, the current average now being 70 years. As the events in Afghanistan have shown, however, the gerontocratic nature of the Politburo has not affected its capacity for action and bold initiative. Despite the age and physical infirmities of General Secretary Brezhnev and several other senior Politburo members, the prospect of leadership succession has to date had little apparent effect on either the composition or functional efficacy of the CPSU Politburo and Secretariat.

Over the last few years, Brezhnev's regime has been further consolidated. This is reflected in the steady increase of the power and authority of the General Secretary, and the placement of his associates and proteges in important party and state positions. Thus, a Brezhnev-style regime may persist long after Brezhnev is gone.

In keeping with the continuing vitality of the Brezhnev regime, there has been little change in the main objectives or direction of Soviet national strategy and foreign policy. The U.S.S.R. has pursued its expansionist strategy toward the developing countries in parallel with a steady buildup of both theater and strategic forces. Military power and its direct and indirect use have received increasing emphasis in the repertoire of instruments the Kremlin employs abroad. In evolutionary fashion, concomitant with their military capabilities, the Soviets have projected power in the direction of the developing countries. Beginning with political and then major material support for wars of national liberation, Moscow has moved further to use Cuban proxy forces in Africa, Vietnamese in Indochina, and finally, regular Soviet forces in Afghanistan. This trend is evidence of growing Soviet confidence in its military capabilities and the political utility derived from them. Moscow's activism is congruent with its conviction that the "world correlation of forces," a calculus of the struggle between socialism and capitalism, has shifted to its advantage. The invasion of Afghanistan thus represents less of a watershed in Soviet policy than a capstone. The burgeoning development of Soviet military capabilities over the last decade has in the Soviet view been a decisive factor in altering world political circumstances in their favor. Soviet military might not only provides the tangible means to support and execute an expansionist policy, it also colors the less tangible realm of national will and resolve, the operational climate facilitating Soviet action.

B. MILITARY DECISIONMAKING AND RESOURCE ALLOCATION

In the Soviet system, the Party is the initiator and partner in a process intent on harnessing society and the economy to military-oriented goals. The Soviet military decisionmaking structure is designed to ensure a high level of responsiveness to the party leadership. Basic military priorities in the Soviet Union are approved by the Politburo of the Central Committee of the Communist Party of the Soviet Union (CPSU). The Politburo also approves Soviet military doctrine, the official policy on the probable nature of the next war and what kind of military forces will be necessary to fight it. The Ministry of Defense is currently represented on the Politburo by Defense Minister Ustinov, who is also a key member of the Defense Council, a joint party-military body which functions as a high level military decisionmaking board for the Politburo. Chaired by Brezhnev, the Defense Council is the real focal point for national security policymaking. It reviews recommendations on CPSU military policy and Soviet military doctrine, with substantive inputs from military professionals and defense industry officials. Defense Council membership probably includes Premier Aleksey Kosygin and Foreign Minister Andrey Gromyko. Chief of the General Staff Marshal Nikolay Ogarkov and other senior military men probably also participate. The Defense Council provides the top uniformed military with institutional access to the top forum for political-military policy; it also provides a mechanism to ensure that military needs are taken into consideration in all aspects of policymaking.

The high priority that Soviet policymakers have placed on defense interests ensures that military requirements receive preferential treatment in resource allocation. The military sector in the U.S.S.R., substantially insulated from most of the organizational and resource constraints of the civilian economy, is able to outperform dramatically the nonmilitary sector. Military R&D and production are cases in point. The Soviets maintain a captive, continuously operating military R&D and production capability which is much less subject to the economic and bureaucratic impediments which hamper the nondefense sector in a centrally planned economy. Military programs enjoy a special status in the planning, resource allocation, and management process and are accorded favored treatment over civilian programs in the competition for scarce resources. There is no indication that the expected manpower and other resource constraints of the 1980s will cause a shift in the consistently high priority the Soviet leadership has placed on defense.

C. ECONOMIC TRENDS

Soviet policy goals can be achieved only by utilizing the scarce resources provided by their economy or obtained from abroad. Decisionmakers in the Soviet Union are well aware of the concept of opportunity cost. Resources allocated to any specific use are no longer available for other purposes, so priorities are very important in Soviet economic decisionmaking. The allocation of resources to the Soviet military reflects the high priority placed on increased military and political power. The reluctance to significantly restructure the economy in the face of declining economic growth reflects the high priority placed on retaining centralized authority within the Party.

1. Soviet military expenditures

a. The published defense budget

The Soviet Union includes a figure for expenditures on defense in the state budget published each year. The specific items covered by the "Defense" appropriation are not revealed by the Soviets, and no breakdown of the expenditures by military services or resources has been given in recent years. It is known that a detailed "estimate" (*smeta*) of expenditures on items for military use is compiled each year. The Soviets have not made this "estimate" public, but they have indicated that it is not defined in the same manner as the published "Defense" budget.

The level and trend of the published "Defense" budget in the past two decades have not matched the observed changes in Soviet military manpower, operations, and weapons procurement. Rather than leveling off or declining in the 1970s as the "Defense" budget indicates, Soviet military activities have actually expanded fairly steadily year to year. Although Soviet military budgets through 1950 were fairly accurate reflections of the Soviet military effort, the coverage of the "Defense" budget is believed to have been reduced during the 1950s. The official figure no longer reflects total Soviet military spending and is manipulated for political purposes. There are a number of reasons for the Soviets to disguise their actual level of defense spending:

Soviet proposals in the United Nations have called for reductions of military budgets by a specific percentage and allocation of those funds to developing countries. This gives the Soviets a clear vested interest in keeping their "Defense" budget as low as possible;

Continued verbal attacks on Western countries' military budgets are more credible if the Soviets can point to their own stable or declining level of defense spending;

Internal dissatisfaction with resource allocation policies, though not a significant threat to the regime, may be reduced if the cost of the military establishment is understated; and,

The level and trend of military spending cannot be used by potential enemies as even a rough indicator of Soviet priorities and increase in military capability.

The unreliability of published Soviet data on military spending make it necessary to estimate the level and trend of their military effort using other approaches. The Intelligence Community begins by determining in detail, the manpower and material goods used by the Soviet military each year. These diverse quantities are converted to the common denominator of monetary cost using specific values for each component of the military effort. Both the Soviet ruble and the U.S. dollar are used as common denominators.

b. The ruble estimate of Soviet military activity

Estimated Soviet defense spending in rubles reflects the costs of military activities within the Soviet economy and is meant to replicate, in a general sense, the resource allocation choices confronting the Soviet leadership. Prices and pay rates are those that were in effect in the Soviet Union in 1970. This eliminates the impact of price change and allows the underlying trends in manpower and physical quantities to be revealed. Most of the Soviet military activities are costed directly in rubles. Some items are costed by converting the dollar costs of Soviet activities into rubles using ruble-dollar ratios. These ratios reflect the relative price structures in the two countries.

Ruble defense spending is defined in two ways. A lower range of spending estimates is based on the definition of defense used in the U.S. and is comparable to the coverage of the dollar costs. The definition of spending is broadened in the

TABLE 1.—*Announced defense budget of the Soviet Union, 1918–80*

[In billions of current rubles]

1918	15.589.
1919	39.003.
1920	132.741.
1921	NVAL.
1922/23 [1]	0.2281.
1923/24	0.4024.
1924/25	0.4181.
1925/26	0.5694.
1926/27	0.651.
1927/28	0.765.
1928/29	0.880.
1929/30	1.046.
1930T [2]	0.434.
1931	1.2884.
1932	1.2962.
1933	1.4207.
1934	5.0191.
1935	8.1858.
1936	14.8827.
1937	17.4810.
1938	23.2.
1939	39.2.
1940	56.8.
1941 [3]	70.9; 83.0.
1942	108.4.
1943	125.0.
1944	137.8.
1945	128.2.
1946	73.6.
1947	66.3.
1948	66.3.
1949	79.2.
1950	79.4; 82.9.
1951	96.4; 93.0.
1952	113.8; 109.6.
1953	110.0; 105.0.
1954	100.0; 100.0.
1955	112.1; 107.359.
1956	103.0; 97.0.
1957	97.0; 91.0.
1958	96.3; 92.630.
1959	96.1; 93.726.
1960	96.1; 92.987.
1961 [4]	9.255; 12.40 (revised); 11.5947 (actual).
1962	13.41; 12.6448.
1963	13.89; 13.8688.
1964	13.29; 13.2801.
1965	12.79; 12.7802.
1966	13.43; 13.4033.
1967	14.5; 14.5.
1968	16.700.
1969	17.702.
1970	17.854.
1971	17.854.
1972	17.900.
1973	17.8537.
1974	17.650.
1975	17.430.
1976	17.43.
1977	17.23.
1978	17.20.
1979	17.20.
1980	17.124 (plan).

[1] On Nov. 1, 1922, the ruble was revalued at a rate of 10,000 old rubles for 1 new ruble. The budget was also placed on a fiscal year basis during this period.
[2] This transitional period was used to readjust to a calendar year for budgeting purposes.
[3] When 2 figures are provided, the 1st is a planned amount, the 2nd is reported actual expenditures. When single figures are provided, they reflect actual expenditures. The 2 figures coincide after 1966.
[4] The ruble was revalued at a rate of 10 rubles for 1 new ruble in 1961.

upper range to include additional military-related activities which the Soviets may view as part of their defense effort. These include civilian space activities, which would be run by the National Aeronautics and Space Administration in the U.S., construction, railroad, and MVD internal security troops, foreign military assistance, military stockpiling, and some civil defense activities. The ruble values are aggregated by resource category and military service as required for analytical purposes. Estimated ruble defense spending in 1979 totaled between 58 and 63 billion rubles for the narrow definition of defense, and as much as 70 billion rubles for the broad definition. In contrast, the official Soviet "Defense" budget for 1979 was 17.2 billion rubles.

c. The dollar estimate of Soviet military activities

The estimated dollar value of Soviet defense activities represents what it would cost in the U.S. to hire the manpower, procure the hardware bought by the Soviet military, and operate that force as the Soviets did in a particular year. The activities covered by the estimated dollar costs include those military functions which would be funded in the U.S. by the Department of Defense, the Department of Energy, and the Coast Guard. These estimated costs are denominated in constant 1979 dollars in order to remove the effects of inflation and reveal the underlying trends in physical quantities and actitities. Dollar costs are useful in determining the overall size and trend of Soviet military activities in terms familiar to U.S. policymakers and in making comparisons with U.S. expenditures on similar activities. The cost of Soviet military activities in 1979 totaled $165 billion. U.S. outlays for similar military activities in 1979 totaled $108 billion.

d. Growth in Soviet military spending

The Soviet military effort expanded steadily during the past decade at an average rate of between 4 and 5 percent per year, based on the ruble estimate. There have been some variations in the rate of growth from year to year as certain major weapons systems were replaced by more modern technology, but the overall trend has been fairly consistent.

The rate of growth of the dollar costs of Soviet military activities has also been consistent during the past decade. Estimated dollar costs have increased at roughly 3 percent per year during this period. The growth rate is lower, in large part, as a result of the different price structures in the two countries. The Soviet Union practices universal male conscription to obtain its military personnel and pays them only a few rubles per month, about 4 percent of the average industrial wage. This results in a very small weight for personnel pay in total Soviet military spending calculated in rubles. In contrast, the dollar cost estimate incorporates U.S. volunteer army pay rates which much more closely approximate average wages in the economy. Manpower pay has a heavy weight in the dollar cost estimate of Soviet military activities.

When these two very different price systems are applied to the slowly growing level of Soviet military manpower, the result is two different growth rates for total military costs. The ruble value of procurement, construction, operations. maintenance, and research is much greater than that of ruble military pay. The slow growth in pay does not reduce the overall rate of growth in rubles significantly. In the dollar cost estimate, however, military pay is a large proportion of total costs. The slow growth of Soviet military manpower is then heavily weighted, pulling down the growth rate of total costs to 3 percent.

The existence of two different growth rates for the value of the same set of physical quantities is one aspect of the "index number problem," which is universal in value comparisons between countries or over time. The chief point regarding the Soviet military effort is clear regardless of the currency used: growth has been steady throughout the past decade at a rate of approximately 4 percent per year.

2. Economic impact of the military

The most general indicator of the economic impact of the military is the share of total economic output used for the military. This ratio is calculated in rubles for the Soviet Union because it represents most faithfully the economic environment confronting the Soviet leadership. When military spending and gross national product are denominated in constant 1970 prices, the share of the military has been in the range of 11 to 13 percent during most of the past decade. This share has risen to the 12 to 14 percent level in the past year due to slackening economic growth. If Soviet economic growth slows as we anticipate, the share of GNP allocated to the military will rise to over 15 percent in the mid-1980s (calculated in 1970 prices).

3. Economic growth trends

The Soviet Union is currently finalizing the Eleventh Five-Year Plan, covering economic development during the 1981–1985 period. When dealing with their economic future, the Soviets must confront a number of problems which have affected their performance during the Tenth Five-Year Plan ending in 1980.

Soviet labor force growth declined steadily from nearly 2 percent per year in 1970–1975 to roughly 1 percent during the late 1970s. By 1985 the Soviet labor force will include 155 million people, or less than 4 percent more than at present. This growth rate of less than 1 percent will have a negative impact on the economy. While there are some new incentives being instituted for retired people to take full-time jobs, and some adjustments to the length of time spent in school, there is little likelihood that such methods will appreciably raise the growth rate of the labor force.

A second problem facing the Soviets is poor utilization of capital investment. The Tenth Five-Year Plan was to be one of "efficiency and quality." For the first time in Soviet history, output was to rise more quickly than new capital investment. A key ingredient was stated to be the reduction of the large stock of assets tied up in unfinished construction projects. As shown below, this reduction not only failed to occur, but unfinished construction increased rapidly.

TABLE 2.—VOLUME OF UNFINISHED CONSTRUCTION IN THE SOVIET UNION

	1975	1976	1977	1978	1979[1]
Billions of rubles	76.7	84.1	92.5	99.0	109.5
Indes, 1975=100	(100.0)	(109.6)	(120.6)	(129.1)	(142.8)

[1] Preliminary.

Unfinished construction was to have dropped to 65 percent of annual capital investment by 1980. Instead, the ratio will be nearly 90 percent. The plan for 1980 continues to stress the need for reducing the backlog of projects, but there is little likelihood that such efforts will be successful. So long as such misallocation of investment occurs, larger volumes will have to be invested to achieve the same rate of economic growth. This directly reduces the rate of growth of the Soviet population's standard of living.

A third problem area has been labor productivity. The Tenth Five-Year Plan called for added output per worker to account for 85 to 90 percent of economic growth. In 1979, however, increased labor productivity, as calculated by the Soviets, caused only about three quarters of the increased economic output. A part of the reason for the shortfall is the lack of material incentives in the form of high-quality consumer goods. A vicious circle has appeared; low economic growth requires more capital investment, which reduces consumption, which reduces incentives, which reduces labor productivity, which reduces growth.

These trends accounted for the failure of the Soviet economy to meet the output goals specified in the Tenth Five-Year Plan. The goal for Soviet national income, roughly equivalent to Western GNP excluding services, was originally set at 457 billion rubles (in 1973 prices) for 1980. The plan for the single year 1980 calls for national income of 437.5 billion rubles (also in 1973 prices) a 4 percent shortfall.

The difficulties cited will adversely affect economic growth during the next 5 years. Soviet GNP growth may drop to as low as 1 percent during the last years of the Eleventh Five-Year Plan, compared to nearly 4 percent in the early 1970s. Soviet attempts to revise their economic system have met with little success in the past and are unlikely to have an appreciable impact in the future.

This slowing trend has not yet had a noticeable impact on Soviet military spending. There is also no indication that any large changes in resource allocation policy are imminent.

4. Energy

The Soviet Union is the world's largest producer of oil. In 1979 it produced about 11.7 million barrels of oil per day, enough to satisfy domestic requirements and to permit the export of nearly 3 million barrels of oil per day to Eastern Europe and non-Communist purchasers. Oil production in 1980 is planned to reach or exceed 12.0 million barrels per day, and we see no reason this goal cannot be reached. Soviet oil production is expected to continue to grow, though probably at a slower rate, through 1985. From 1985 to 1990 we expect a leveling off of production, followed by a resumption of growth resulting from the completion of the necessary infrastructure in West Siberia.

The Soviets are expected to continue to meet their fuel export commitments for Eastern Europe through 1985, supplementing oil exports with increasing amounts of natural gas whenever feasible. In the early 1970s the USSR announced it could not continue to meet Eastern Europe's oil requirement indefinitely. Eastern Europe has and will continue to seek increased imports of non-Soviet oil, probably from the Middle East and North Africa. Eastern Europe's intent on these non-Soviet imports is supported by the recent completion of the Adria pipeline. This line permits importation of 680,000 barrels of oil per day, of which about 480,000 barrels go to Yugoslavia. Yugoslavia's main suppliers are the Middle East and the Soviet Union.

The Soviet military has and will continue to have first priority use of available fuel. Fuel availability will place no restrictions on the Soviet armed forces now or in the future. We estimate the Soviet military peacetime consumption rate at about 3 percent of production. Full military mobilization and wartime

consumption rates probably require about [security deletion] million barrels per day, or [security deletion] of domestic oil production.

5. Impact of U.S. economic sanctions

Soviet trade with the United States has focused heavily on gains which make up about 75 percent of the value of U.S. exports. The balance is mostly advanced industrial equipment. Two-way trade in 1978 totaled $2.8 billion in U.S. exports and $600 million in imports of Soviet chrome and other metals. This trade accounted for only 10 percent of Soviet trade with the industrial West. However, these figures belie the importance of U.S. imports in fulfilling Moscow's long-term plans for specific sectors of the economy, particularly food.

The Soviet agreement to buy 8 million tons of grain annually under the Long Term Agreement and the massive purchases above this level were designed to support a new livestock and poultry industry. A better diet, with more meat and dairy products, is the cornerstone of Chairman Brezhnev's commitment to provide more consumer goods and a better living standard to the Russian worker. This plan reflected the leadership's painful realization that only more consumer goods, especially food, could provide the incentive for workers to increase output.

U.S. sanctions were intended to deny the Soviets 17 million tons of grain, primarily livestock feed. Soviet efforts to offset U.S. grain sanctions thus far have proven fairly successful. In the July 1979–June 1980 marketing year, the Soviets are likely to import [security deletion] million tons of the [security deletion] million tons they had planned to buy, a shortfall of [security deletion] million tons. Firm figures will become available later this summer.

Although most other exporters agreed not to sell the Soviets more than usual, private Argentinian grain traders have not followed the guideline. It now appears that their exports will total [security deletion] million tons, about [security deletion] last year's level. Additionally, Moscow is pressuring [security deletion] to supply more grain by swapping domestic grain for imported U.S. supplies. Soviet activity on world grain markets has driven up prices considerably and they will end up having to pay about $1 million more than U.S. commodities would have cost. This is a preliminary figure.

Even with these efforts, supplies will fall about [security deletion] million tons short of original requirements. As a result, the country's tight food supply situation is becoming even worse.

Flour, bread, and potatoes are usually available, but all meats, dairy products, coffee, and sugar are scarce and consumers routinely wait hours in long lines for these products. People are increasingly turning to private markets, even for staples, where prices are three to four times higher than in state stores, forcing them to spend as much as 75 percent of their income on food. The leadership's plan to provide more food as an incentive to workers has been in serious trouble, and when measured against specific quantitative goals, has failed.

The impact of sanctions on U.S. industrial exports is more difficult to assess due to the longer lead time involved. Soviet purchases of manufactured goods from the United States have been designed to improve Soviet capabilities in computers, oil and gas recovery, machine tools, electronics and communications, chemicals, fertilizers, and motor vehicle production. However, in value terms, most Soviet industrial imports are from Western Europe and Japan and the denial of U.S. goods will not have a significant impact on total trade levels. There is some minor impact in a few specialized areas, but these factors will not appreciably affect economic growth.

Firms in these countries are willing and largely able to provide the Soviets with those manufactured items or technologies no longer available directly from the United States. [Security deletion.] Some Soviets claim that Moscow will never again consider the United States to be a reliable trade partner.

D. MILITARY PRODUCTION

1. Output trends

Over the past 5 years, the U.S.S.R. has produced substantial quantities of a wide variety of weapons and weapons-related equipment. The Soviet industrial base allows self-sufficiency in meeting the requirements of the Soviet armed forces, those of their Communist allies, and many developing world clients. Soviet industry also permits a balanced approach to improving strategic, tactical, and defensive capabilities and has allowed them to become a major arms supplier. The trend during the past 5 years reveals a gradual increase in weapons production that will probably be maintained for the next 5 years.

In 1979 the overall number of Soviet missiles produced increased by about 3 percent from 1978, [security deletion]. In absolute numbers, defensive missiles dominate the output. Some 80 percent of the total were antitank guided missiles (ATGMs) and [security deletion] surface-to-air missiles (SAMs). Many of these are handheld weapons. A significant increase in short range offensive and tactical missile production occurred in 1979. Of particular significance were increases in several new short range ballistic missiles (SRBMs) and ATGMs. SAM production declined slightly in 1979.

Production of strategic missiles (ICBMs, IRBMs, and SLBMs) actually declined slightly as older systems were phased out of production. Production of the SS–17, SS–18, and SS–19 liquid ICBMs continued in 1979 at levels approximating 1978 output. Production of the [security deletion].

The Soviets continued to produce the SS–20 IRBM in 1979 at a high rate of about [security deletion] missiles per month, supporting continued deployment of this system. In addition, the Soviets are currently developing a new [security deletion]. At the same time the Soviets continued to devote considerable resources to the development of newer and modernized [security deletion] missiles. [Security deletion.]

High levels of military and civil aircraft production were achieved during the 1970's and continued in 1979. The Soviets produced some 2,590 aircraft in 1979, a modest gain in aircraft output of about 5 percent over 1978. These included [security deletion] bombers [security deletion] fighters and fighter/bombers [security deletion] transports, [security deletion] helicopters [security deletion] trainers [security deletion] antisubmarine warefare (ASW) aircraft, and [security deletion] small utility aircraft.

Backfire production is continuing on the order of [security deletion] aircraft annually with output totalling about [security deletion] as of January 1, 1980. In the context of the proposed SALT II agreement, General Secretary Leonid Brezhnev has stated that output would not exceed 30 per year. Backfires are deployed both to Long Range Aviation and Soviet Naval Aviation. Annual production of the BEAR F ASW aircraft is estimated at [security deletion] per year and about [security deletion] have been produced. Production of the I1-76/candid long-range military jet transport has increased slightly. Production is just over [security deletion] per month and about [security deletion] have been built.

Fighter production continues at very high levels. For the seventh consecutive year over 1,000 fighters have been produced. Output in 1979 [secruity deletion]. FLOGGER production now accounts for the largest portion of fighter output. Fencer, Foxbat, and Fitter production have continued at modest rates. This continued high level of fighter production has permitted the Soviets to continue to upgrade their Frontal Aviation Tactical Air Force and to export record quantities of fighters. Production of the Fishbed is largely for export.

Helicopter production increased by about 15 percent in 1979. Production of the HIND and HIP showed the greatest increase and demonstrates that the Soviets have assigned a relatively high priority to the production of armed helicopters.

Output of major land armament items continued to decline in 1979 and 1980. This was caused by changeovers to new production models. For example, the older tanks have probably now been phased out, while the newer programs have received increased emphasis. Tank production was one of the few land aramament categories that showed an actual increase in 1979. A new medium tank will replace an older one and the other program will receive added emphasis.

Output of self-propelled artillery probably declined because [security deletion]. During the next few years, production levels closer to the norm are expected.

Annual Soviet production of ground-based early warning/ground controlled intercept (EW/GCI) radars has [security deletion] units of different types of radar in production in any one year. The Soviets appear to be entering another phase in radar production in this new decade. They seem to be diverging somewhat from their traditional design philosophy of gradual changes using time-tested technology, to more significant design advances. This undoubtedly is a result of Soviet progress in microelectronics, advanced to a degree by acquisition of Western technology.

Despite Soviet inroads in microelectronics, the Soviets are behind the West and Japan in basic microelectronic technology and production capability. This is evidenced by the insatiable Soviet appetite for a wide variety of electronics items

including computers, silicon wafers, and printed circuit production machinery and supplies.

Shipbuilding activities in 1979 reinforce the assessment that Moscow is committed to achievement of greatly improved capabilities for sustained, long-range operations even against substantial opposition.

Soviet naval ship construction demonstrated continuance of a trend toward fewer but larger, more capable ships. The number of units constructed per year has decreased for more than a decade while tonnage figures have increased, revealing greater effort and ship size, and suggesting greater capability and sophistication for all types of ships.

The heavy commitment of resources to weapons development and production facilities indicates that U.S.S.R. output will continue to exceed that of the U.S. well into the 1980's. The amount and variety of Soviet weapons produced are generally unmatched by any country or combination of countries in the rest of the world. For example, the Soviets outproduce the U.S. in fighter aircraft by a factor of four to one, in ballistic missiles by five to one, and in tanks by three to one. The continued expansion of research and development and production facilities in the U.S.S.R. suggests these ratios will remain fairly constant over the next several years.

2. Expansion of the industrial base

The Soviet investment in facilities to produce weapons is greater than similar U.S. investment by wide margin. This is particularly evident in the missile industry. Over 60 Soviet facilities directly involved in the development and final assembly of missiles have been identified to date. [Security deletions] missile airframe plants and [security deletion] engine/motor plants have been expanded significantly.

Considerable expansion is underway in the aircraft industry, where [security deletion] aircraft plants are being enlarged. This is particularly evident in plants engaged in the assembly of large aircraft. [Security deletion.] Furthermore, it can be predicted that will be a steady growth in floorspace for the next several years.

In the land armament industry, floorspace increases were noted at facilities [security deletion].

Expansion has also occurred in the shipbuilding sector. Soviet shipbuilding, conversion, modernization, research, and development is a function of the Ministry of Shipbuilding. This Ministry, by virtue of facility ownership and control of planning, operation, and production, can allocate necessary resources to achieve the long term goals of building maritime power. The result is that today the Soviets have a well-established industrial foundation for a continuation of naval expansion. The shipyard infrastructure is based on interplant cooperation in the manufacture of ship components and shipyard specialization. The Soviet shipyard system may not be as efficiently run as its Western counterparts, but in the long term, it will be recognized as a pillar of their naval strength.

In the last ten years, the Soviets have added at least 50 floating drydocks to the repair capability of their new and existing shipyards. These drydocks, a prime shipyard resource, have lift capacities ranging from 2,500 to 80,000 tons and represent at least a 50 percent numerical increase in the last decade.

During the same period, four new shipyards have been built and the shop facilities of 11 existing yards have been increased by about 75 percent.

Severodvinsk shipyard is an example of the diversity of operations and continued expansion. When expansion is complete, it will provide [security deletion]. The halls at this yard provide both protection from the weather and concealment.

This yard, and most of the new yards, are fitted with the most efficient level building ways, equipped with heavy lift cranes and transporters, and employ a straight line material flow. They are versatile in that they are equipped with drydocks, and their launch facilities are able to retrieve ships for performing hull repairs.

Expansion had also continued at the design bureaus engaged in the development of aerospace, naval, and jground weapons, This underscores the Soviet commitment to develop new weapons ad improve older weapons.

3. Weapons sophistication

The weapons being produced in 1979 are considerably more sophisticated than those produced in the early 1970's. This has been achieved through production of new systems and through modifying and upgrading existing systems. One good example is found in the fighter category, where new electronic systems and weapons have been installed on aircraft produced in the early 1970's. New systems, such as the Fencer, represent major improvements over older systems.

There are several new fighters which have not yet entered series production. [Security deletion.]

During the 1980's we expect the Soviets to continue to modernize their missile systems and create new systems. Some of these developments would include follow-on programs for the [security deletion] strategic ballistic missile systems. In addition to these modernization programs, the Soviets may be developing a [security deletion].

The Soviets continue their pattern of regularly improving and increasing the sophistication of their army materiel. The new T-80 medium tank [security deletion] is believed to have improved armor and a turbine engine. Battlefield command and control is being enhanced by the production of new variants of the BMP and BMD armored vehicles. The infantry's power is being increased by the introduction of automatic versions of [security deletion].

We expect to see the shift continue to larger, more sophisticated, higher quality naval ships. The development of new classes of combatants and support ships, reinforced by the growth of the Soviet merchant fleet—expecially such types as roll-on/roll-off ships and specialized container or barge carriers that are rapidly convertible to naval support uses—indicates an increasing emphasis on the modernization and expansion of an open-ocean navy.

Indications of this ongoing modernization include the construction of a new large submarine at Severodvinsk. Referred to as [security deletion]. Other examples are the BAL-COM-2 and BAL-COM-3 cruiser classes under construction at Leningrad, and a new cruiser at Nikolayev.

The muclear powered cruiser designated BAL-COM-1 left Leningrad for initial sea trials in late May 1980 with delivery to the navy scheduled later this year. Additionally, construction continues on the third and fourth units of the Kiev-Class carriers.

E. TECHNOLOGY TRANSFER

Western technology enhances the Soviet's military posture and thereby threatens American security. Early on, the Soviets recognized the importance of science and technology as a critical factor in the East-West competition. Because they lagged in many areas, they have been increasingly active in the international arena, through legal and illicit means, to redress the imbalance. In the 1970's, the Soviets imported large quantities of Western technology in the form of products, technical data, and manufacturing know-how. The era of detente and the dramatic downward revisions of U.S. and allied export controls made the Soviet acquisitions of Western technology much easier.

Commercial trade in the context of technology transfer is composed of both tangible products and pure technology embodied in the "know-how" of designing and manufacturing the production. It is this know-how, including turnkey plants and keystone testing and quality-control equipment, that the Soviets especially covet. By our standards, their industrial techniques are obsolete, their productivity is low, and their management methods tend to discourage innovation. As a consequence, Soviet technological capabilities generally lag behind the West. Thus, Soviet acquisition objectives are not limited only to purchase and diversions of equipment and goods. Significant, but less publicized, is the intensive Soviet effort to acquire Western technological know-how through the numerous visits and exchanges—both scientific and commercial—that occur between the U.S.S.R. and the West. It appears that this aspect of Soviet acquisitions may be of equal or greater value than than of actually receiving the hardware. Their acquisition effort is aimed not only at existing technology, but also at new and emerging technologies. Of particular interest are those innovations which may not have reached the military application stage, but which certainly have the potential for such use. These efforts include both overt and covert methods of acquisition.

Among the overt channels available are numerous legitimate mechanisms through which technology flows. The Defense Science Board Task Force categorized these channels into three groups. At the low end they included trade shows, open literature, undocumented sales proposals, and sales of products without maintenance and operations data. At the next level they include commercial visits, documented proposals, technical data, and licenses with production methodology, Finally, at the top end, were listed processing equipment with know-how, training in high technology areas, technical assistance contracts, joint ventures, turnkey factories, and licenses involving extensive training.

These groupings suggest that technology transfer becomes more effective toward the upper end. However, this does not reduce the significance of the lower groups. For example, commercial exchanges which occur in connection with plant visits and contract negotiations are extremely valuable sources of information for the Soviets. Many of these so-called commercial visitors are in fact highly competent scientists and engineers whose itineraries cover our most technically advanced companies. It appears that many of them are less interested in buying sophisticated U.S. products than in absorbing as much detail as possible on our manufacturing methods. A common Soviet technique is to press for access to U.S. plants and for agreements in order to gain proprietary information prior to the placing of potentially lucrative orders. However, the size of actual orders, if they materialize at all, are usually much smaller than first indicated.

A most important point regarding these Soviet trade groups is that regardless of their overt representation, they are essentially working for the Soviet state. There are no corporations or business entities as known in the West. Since all aspects of the Soviet economy are centrally controlled by the state, any business deal will involved some aspect of the Soviet bureaucracy. Likewise, the many permanent and temporary Soviet personnel in this country are ultimately controlled and directed by the Soviet government. This characteristic applies across the board, in all areas from engineers and trade representatives to students.

An additional area that impacts on technology transfer concerns the bilateral agreements that have been consummated between the Soviets and the U.S. since 1972. Currently, there are ten scientific and technical agreements in existence, encompassing over 240 working groups jointly staffed by Soviet and U.S. personnel. Some of the topics include the use of computers, metallurgy, microbiology, chemical catalysis, meterology, earthquake prediction, faster breeder reactors, controlled thermonuclear research, and magnetohydrodynamic power generation. One of the provisions common to many of these bilateral agreements encourages the signing of contracts between individual U.S. firms and an entity of the Soviet government such as the State Committee for Science and Technology. These are referred to as "Article IV" agreements. Significantly, many of the companies with whom the Soviets have completed such agreements are leaders in the very areas in which the Soviets are deficient. The potential for transfer of advanced technology remains high, since the only government oversight is the 1979 Export Administration Act requiring that such agreements just be reported to the Department of Commerce. Unless there is an actual sale or transfer of hardware or technical data that requires an export license, no other reporting is required.

Another bilateral program with the potential for effectively transferring emerging technologies is the student exchange program. The typical Soviet exchange student that comes to the United States already possesses the equivalant of the Ph. D. degree, averages about 35 years of age, and has about 8 years of practical experience behind him. Ninety to 95 percent of these co-called students are highly specialized in science, engineering, computers, physics, chemistry, economics, or mathematics. In contrast, American students in the U.S.S.R. tend to be concentrated in the study of government, the arts, language, literature, and history. Similar agreements exist with the East European countries. However, the magnitude of the Chinese-U.S. student exchange program dwarfs that of the Soviet Union and the Eastern European Communist countries. More Chinese students have been accepted into the United States in 1 year than there have been Soviet students in more than 15 years.

Of significance is also the amount of technology loss that occurs through our relationships with the East European countries that are under the political dominance, or at least influence, of Moscow. In many instances the loss of technology through these countries can be greater than that which might be lost directly to the Soviet Union since many East Europeans are granted access to technologies that are denied the Soviets and we have neither monitored nor controlled the visits

of East Europeans as stringently as those of the Soviets. We are also more likely to sell sophisticated products to these countries. In any given year, the number of East European commercial visitors in this country has generally been four to five times the number from the Soviet Union. This surely has not gone unnoticed by the Soviets. It would be naive indeed if one did not believe that the Soviets brief and debrief in detail all Eastern European visitors—particularly commercial visitors—to this country.

While extremely difficult to measure, it is believed that technology losses through this sector are substantial. An example that has been previously publicized is the loss of advanced magnetic bubble memory technology through a Hungarian physicist who had been sponsored in the United States on a project with a leading U.S. institution. It is quite certain that most of this technology is now in the hands of the Soviets. As a result, in late February 1980 eight physicists from the U.S.S.R., Hungary, and Poland were disinvited to an American Vacuum Society meeting in Santa Barbara, California, at which bubble memories were to be discussed.

Finally, there is the loss of technology through friendly third countries. The problem of attempting to monitor this sector is overwhelming, given the generally free flow of products and technology between and among these nations. However, the most serious losses and specifically military technology losses through this sector have been those lost through covert Soviet and East European intelligence services efforts to recruit foreign sources with access to U.S. classified or controlled technology. Some of the losses through this channel have been substantial with a deleterious impact on our national security.

The U.S. intelligence community has been actively involved and, in some cases, has taken the lead in reviewing the operational impact of many potential or actual technology transfers. The intelligence role in the technology transfer equation is mainly in determining those areas of technology in which the Communist country is deficient and the operational impact such transfers might pose. This then provides better data on which policymakers recommendations can be made on export licenses. The Intelligence Community is also assisting in the development of critical technologies lists, assessing bilateral agreements and exchanges, and determining the technological gains being made by the Soviet Union through technology transfers, diversions, and evasions.

However, serious problems still remain. A national policy on technology transfer is still being formulated and has not yet been clearly articulated. Compounding the problem is the difficulty in assessing or measuring the degree of technology that has or could be lost along with the capability of Communist nations to assimilate the technology. The Kremlin has long recognized all these factors and spares no effort in acquiring Western science and technology.

The outstanding example of the transfer of Western technology is the Kama River facility, the world's most modern and largest truck plant. At least a quarter of this $4 billion plant was provided by the U.S., Western Europe, and Japan. Roughly $500 million worth of equipment and technology is from American sources. When fully operational, possibly by the mid-1980's, it will be able to turn out 150,000 trucks and 250,000 diesel engines annually. Kama River trucks will greatly enhance the U.S.S.R.'s civil transport fleet and are already appearing in quantity with the Soviet Army, including those committed to Afghanistan. Such transfers of technology have also contributed to a major modernization of artillery facilities.

II. Soviet External Affairs

The Soviets utilize the entire range of power projection instruments from minor trade agreements and diplomatic visits to direct use of military force. This section examines the areas of military and economic assistance, friendship treaties, and military force projection.

A. SOVIET MILITARY ARMYS TRANSFERS AND ADVISORY PROGRAMS

Since 1954, the Soviet Union has supplied military equipment valued at $46.5 billion to the developing countries, with 55 percent going to the Middle East and North Africa region. Moscow's arms transfer program has grown because the country offers quick delivery, extensive training, maintenance services, discounts off list prices, 7-10 year repayment period at 2-3 percent interes, and acceptance of local commodities in repayment.

TABLE 3.—*Soviet military deliveries by area, 1954–79*

[Millions of U.S. Dollars]

Asia and Pacific	14, 400
Latin America	2, 600
Middle East and North Africa	25, 800
Sub-Saharan Africa	3, 700
Developing Countries	46, 500

During 1975–79, some $25 billion worth of Soviet military equipment was delivered. The Middle East and North African countries were the main recepients with 64 percent of the total. The rapid increase in arms transfers during this period can be attributed to: the new Arab wealth following the rise in oil prices in 1973 and 1974; the sale of more sophisticated equipment such as Mig–23 and Mig–25 jet fighters, IL–76 transports, Mig–24 combat helicopters, surface-to-air misssile systems, T–62 and T–72 medium tanks; and, higher Soviet prices. The ruble cost of Soviet arms transfers has increased [security deletion] percent since 1973. When, converted to dollars at prevailing exchange rates, it has increased [security deletion] percent.

TABLE 4.—MAJOR SOVIET ITEMS OF EQUIPMENT DELIVERED, 1975–79

[Units]

	1975	1976	1977	1978	1979	1975–79
Ground:						
Tanks and SP guns						7, 120
APC's and armored cars						7, 357
Artillery pieces						7, 076
Naval:						
Major surface combatants						5
Minor surface combatants						97
Submarines	[Deleted.]					6
Guided missile boats						52
Air:						
Supersonic combat aircraft						1, 858
Subsonic combat aircraft						328
Helicopters						699
Other aircraft						268
Missile: Surface-to-air						6, 683

As shown in table 4, Moscow delivered a variety of equipment during the 1975–79 time frame including: almost 22,000 tanks, APCs, armored cars, and artillery pieces; over 50 guided-missile boats; 2,200 combat aircraft; and almost 7,000 surface-to-air missiles. Libya, Iraq, and Syria were the main recipients.

These advanced weapons have required more extensive training as reflected in the increase of military trainees in the U.S.S.R., from 4,900 in 1975 to over 7,600 in 1979.

TABLE 5.—FOREIGN MILITARY TRAINEES IN THE U.S.S.R.

	Minimum estimate				
	1975	1976	1977	1978	1979
Asia and Pacific	561	554	669	669	900
Latin America	1, 150	2, 573	NA	2, 000	2, 046
Middle East and North Africa	1, 310	2, 055	1, 135	1, 340	1, 360
Sub-Saharan Africa	2, 881	3, 868	4, 154	3, 438	3, 331
Developing countries	4, 903	5, 902	5, 958	7, 447	7, 637

NA=Data not available.

Also, these weapons required more maintenance, so larger numbers of Soviet military advisers and technicians are now in developing countries. The number has grown from over 9,200 to more than 15,000 by the end of 1979. As expected, the Middle East and North Africa region has the largest number.

TABLE 6.—SOVIET MILITARY ADVISERS AND TECHNICIANS ABROAD

[Minimum estimate]

	1975	1976	1977	1978	1979
Asia and Pacific	1,450	1,438	1,254	1,650	4,650
Latin America	2,037	2,037	2,122	2,100	1,600
Middle East and North Africa	4,737	6,275	5,161	5,980	6,455
Sub-Saharan Africa	1,027	1,213	2,130	2,562	2,636
Developing countries	9,253	10,996	10,667	12,292	15,341

The Soviet arms transfer program has been a success as an instrument of Soviet foreign policy for projecting power and influence in the developing countries. Arms exports have provided the Soviets with an entree into developing countries. Moscow has also profited economically from its arms exports. Its hard currency receipts from arms exports rose from an estimated [security deletion] in 1979. In addition, 1979 saw the Soviet Union surpass the U.S. in terms of dollar value for the first time and continue to lead in the delivery of major items of equipment to the developing countries.

The Soviets are now the leading arms exporters to the developing countries. The recent $1.6 billion arms sale to India demonstrates Moscow's readiness to continue to supply its clients with modern military equipment and enhance its position in the developing countries.

B. SOVIET ECONOMIC AID AND TRADE PROGRAMS

Economic trade and aid are among the most important instruments of Soviet penetration of the developing countries. Through its economic relations, Moscow has an opportunity to project the Socialist economic development model as an alternative to the Western system. The Soviets stress that their own rapid industrialization can serve as an example for any developing country willing to foresake "capitalism." The Soviets heavily support public sector project aid, promoting their view that the state, not free enterprise, should be the means for economic development.

Many aid projects entail the presence of large numbers of Soviet technica personnel in recipient countries. Increased commercial ties also provide the grounds for expanded official presence, often in numbers totally disproportionate to the levels of trade. Obvious opportunities for propganda and subversive activities are possible and regularly occur. Some developing countries show a recognition of the ideological pressure inherent in close economic links with Moscow. Some countries, Egypt for example, have become totally disappointed with Soviet aid and realigned their policies westward. However, in the 1970's Soviet successes have outnumbered failures and even though the economic strain is considerable, new programs will be offered whereever Moscow sees an opportunity to advance its influence.

1. Economic assistance to developing countries

During the period from 1970 to 1979 the Soviet Union has continued its policy of using economic aid, in conjunction with military assistance, to achieve political goals as well as to support socialist regimes once they have gained power. Because scarcity characterizes the Soviet economy, its industrial and agricultural sectors strain to supply the industrial goods, food and weapons needed to support aid programs.

As a consequence, such programs have been more selective and less generous than is often realized. As shown in table 7, since 1970 the Soviet have extended about [security deletion] billion to non-communist developing countries. In negotiating economic development projects, Soviet concern for expense is even more evident than in the case of military aid. Only about 10 percent of economic aid to Free World nations has been on a grant basis and most of this went to Afghanistan. Some 90 percent of the program has been through the extension of very long term, low interest credits. If a client can not repay in hard currency, the Soviets often accept commodities such as cotton, gas, and oil as repayment and most credits are being repaid. Increasingly, Moscow is arranging deals under which it agrees to develop a country's resources in exchange for

a part of the product. The recent $2 billion agreement with Morocco to further develop its phosphate industry is an example. Even in very poor countries such as Angola and Guinea the Soviets have negotiated for ocean fishing right as a form of repayment for its aid.

TABLE 7.—SOVIET ECONOMIC AID TO DEVELOPING COUNTRIES, 1966–79

[In millions of U.S. dollars]

	1970	1972	1974	1975	1976	1977	1978	1979	Total	Percent of total[1]
Africa:										
North Africa										
Sub-Saharan Africa										
East Asia										
Middle East	[Deleted.]									
South Asia										
Latin America										
Total										

[1] Total Soviet aid to developing countries in 1966–78 was [deleted] billion.

a. Middle East/North Africa

Major Soviet credit extensions have been to a relatively few countries located in the Middle East and North African region. The seven countries shown in table 8 accounted for roughly half of all Soviet economic aid extended to developing countries during the time period. In the last few years Soviet activity in these areas has continued to be heavy with the exception of Egypt, where the program is winding down. Of some [security deletion] billion extended in 1978 some 91 percent went to the Middle East and North Africa. However, $2 billion of this involved an agreement with Morocco to develop its phosphate industry over the next 25 years. Another major recipient has been Turkey, which is the largest Free World recipient of Soviet economic aid in the past decade. Soviet projects have created or significantly expanded Turkey's steel, aluminum, oil, and electric power industries, and such cooperation is expected to continue.

Iran, Syria and Iraq have also received major credits for the development of oil and gas resources and the construction of such facilities as dams, power plants, heavy industrial plants, and transportation and communications projects. Soviet assistance to Iran is continuing at this time, with major projects being a large steel plant and several important electric power projects. Libya is not shown as an aid recipient because all of its dealings with the Soviets are on a commercial trade basis. However, Soviet economic relations with Libya are extensive and include the construction of factories and the sale of machinery and industrial equipment.

TABLE 8.—MAJOR SOVIET ECONOMIC AID EXTENSIONS (U): MIDDLE EAST AND NORTH AFRICA, 1970–79

[In millions of U.S. dollars]

	Amount
Morocco	[Deleted.]
Turkey	
Iran	
Syria	
Iraq	
Algeria	
Egypt	

b. South Asia/Indian Ocean

India, Pakistan, and Afghanistan are the major aid cleints in this region. Soviet involvement with India has been extensive particularly in the fields of mining and metallurgy. In the 1970's this relationship cooled and aid projects have decreased. Aside from a $330 million wheat loan in 1973, the only project

aid was [security deletion] million extended in 1977 in an effort to gain favor with the new Janata government. Indian preference for Western technology has made the credit more difficult to use. Moscow's oldest aid client in the area is Afghanistan, and throughout the last 10 years its program has accounted for most of the country's industrial development. After the Communist regime came to power in early 1978, Soviet economic aid activities greatly accelerated. Numerous projects and commodity assistance have been initiated since the invasion and the number of Soviet economic advisors has doubled to at least 2,000 personnel in an effort to revive the faltering economy. Soviet aid to Pakistan has been significant and is focused on a [security deletion] million steel mill which has involved hundreds of Russian technicians.

TABLE 9.—MAJOR SOVIET ECONOMIC AID EXTENSIONS: SOUTH ASIA AND INDIAN OCEAN AREA, 1970-79

[In millions of U.S. dollars]

	Amount
India Pakistan Afghanistan Others	[Deleted.]

c. Sub-Saharan Africa

The countries of this region have received only 3 percent of Soviet economic aid extensions during the 1966–1979 period. Most of these credits went for basic development in Somalia and to develop a bauxite industry in Guinea. The program in Somalia ceased and all Soviet personnel were expelled when Moscow backed Ethiopia in its despute with Somalia. The Soviets have been extremely cautious in making large-scale economic aid commitments to Ethiopia. The country's economy is in such turmoil and its leadership so disorganized that the Soviers may fear becoming overextended.

d. Latin America

On the aid scale, Latin America continues to rank low in Soviet priorities. For example, 1978 was a record year for Soviet project aid to developing countries, but Latin America (excluding Cuba) was close to the bottom of the list of recipients. Of a total of [security deletion] billion in credits and grants extended, only [security deletion] million went to the Western Hemisphere. During the 1970s, Latin America received [security deletion] million in Soviet economic aid, about 5 percent of total Soviet aid extensions during this period.

Prior to the 1979's the Soviet Union showed little interest in extending economic aid to Latin America. In the past decade this aid accelerated. It included support for the Marxist regime in Chile ($182 million in 1972–73), but the greater portion was for hydroelectric power development projects in Argentina and Colombia. The concentration on hydropower development assistance continues to the present. Soviet equipment sales to Latin America for these projects since 1970 have totaled roughly $500 million. Other credits offered by the Soviet have not been drawn down because of continued Latin American preferences for Western equipment and support.

2. Soviet economic technicians in developing countries

The number of Soviet economic technicians supporting aid projects in developing countries quadrupled since 1970. As shown in table 10, in that year there were [security deletion] Russians in these countries and by 1979 this number has increased to [security deletion]. This sharp growth occurred partly as a result of political changes in a number of developing countries which have provided additional opportunities for Soviet diplomacy and aid. In the past two decades most Soviet economic personnel were in Middle East and North African countries, which is also the location of most large Soviet economic development projects. Algeria leads this region with [security deletion] while Iraq and Iran each had about [security deletion] Soviet civilian experts.

The Sub-Saharan Africa region ranked second in importance with large numbers of Soviets in Nigeria, Ethiopia, Guinea, and Angola. Soviet technical support to South Asia was also heavy, particularly in Afghanistan where the number doubled to 2,000. Soviet personnel have been moved into many key civil

positions to help keep the Communist Karmal regime in power. The number of such personnel in India has decreased in recent years as aid projects have been completed.

About [security deletion] Soviet economic advisors are in Latin America. The number was above [security deletion] in the late 1970's, but a reduction in activity in Peru and Bolivia has lowered the Soviet presence. Soviet technicians in Latin America account for less than 1 percent of all Soviet advisers to non-communist developing countries.

TABLE 10.—SOVIET ECONOMIC TECHNICIANS

Africa:	[Deleted.]
North Africa	
Sub-Saharan Africa	
Middle East	
East Asia	
South Asia	
Latin American	
Total	

3. Soviet trade with developing countries of the Free World

A corollary to the Soviet economic aid program to developing countries is its expanding trade relationship with them. Soviet trade with developing countries still accounts for only 10 percent of its world trade, compared to 30 percent with the West and 60 percent for Communist partners. However, the value of this trade is growing steadily, having moved from $3.4 billion in 1970 to $14 billion in 1979.

TABLE 11.—SOVIET TRADE WITH FREE WORLD DEVELOPING COUNTRIES

[In billions of U.S. dollars]

	1970	1973	1976	1979 (preliminary)
Soviet exports	2.1	4.1	5.5	9
Soviet imports	1.3	2.4	4.0	5
Total	3.4	6.6	9.5	14

Although as much as half of this increase is due to world inflation and changes in currency exchange rates, the increase is still significant. A very important aspect of this trade is that the Soviets consistently run a trade surplus with these countries.

The expansion in trade with developing countries has been greatly advanced by the Soviet economic aid program. In earlier years, trade was limited by Soviet hard currency shortages, the necessity for barter deals, and a scarcity of goods for export. However, during the 1970's, Moscow greatly expanded the market for its industrial machinery and other manufactures, particularly military equipment. This was accomplished by providing long-term, low-interest credits repayable in commodities and, more recently, hard currency. In many instances Soviet purchases have also been with hard currency as some wealthier developing countries have become displeased with Soviet barter goods. In many cases generous credits have enabled Moscow to gain entry in the commercial activities of politically strategic areas that it could not have penetrated with the low quality products it had to trade.

However, without weapons exports, the trade picture would be dismal. It is estimated that about half the export expansion with developing countries resulted from the massive increase in arms sales to these countries. Consequently, major Soviet weapons customers are among the U.S.S.R.'s leading trade partners. Preliminary trade data for 1979 show Iraq, India, and Libya to be the major trade partners, followed by Turkey, Afganistan, Argentina, Egypt, and Iran. Although the U.S.S.R. is important to these countries, its share of their trade is generally less than 15 percent, with the exception of Afghanistan at 34 percent in 1979.

In addition to the importance of political goals, trade with developing countries is of increasing significance to the Soviet economy. These countries are the major non-Communist customers for Soviet exports of technologically-dated machinery.

To the U.S.S.R., its imports of grain from Argentina, bauxite from Guinea, phosphates from Morocco and rice, wheat, tea, and industrial equipment from India are very important. The U.S.S.R. also receives oil from Iraq and Libya, which it then re-exports to Vietnam, Cuba, and Eastern Europe.

C. TREATIES OF FRIENDSHIP AND COOPERATION

As a component of its efforts to consolidate its ties with the developing countries, the U.S.S.R. has signed ten Treaties of Friendship and Cooperation, of which eight are still in force. While the treaties have not automatically translated into greater political influence or strategic advantages for Moscow, they do provide a legal framework for the expansion of Soviet activities and presence. Such pacts serve as the basis for a number of subsequent agreements covering military, political, party cultural, scientific or economic affairs. Soviet interests are often furthered by the East Europeans who, in many cases such as Angola, Mozambique, Ethiopia and South Yemen, have followed on Moscow's heels with similar treaties of their own.

The treaties vary only slightly, containing similar calls for mutual cooperation, respect for sovereignty, and consultation on issues of common interest. While none are actual mutual defense treaties like those signed with East Europe and Mongolia, which require a commitment to render military aid in the face of a threat, these treaties do contain nonspecific clauses calling for military cooperation and consultation It is that article in the Soviet-Afghan treaty that Moscow has used as a legal pretext for its continuing armed intervention.

For the Soviets, the pacts offer the prospect of both acquiring an entree to greater influence and denying that same influence to the West and the P.R.C. A developing country's government may be attracted to such an arrangement for specific short-term reasons: bolstering a new or shaky left-wing regime; fear of, or engagement in, military conflict with neighbors; desire for military or economic aid. However, when interests diverge, as they did with Somalia and Ethiopia, the treaty itself does little to preserve Soviet influence. In fact, the Somali case ensued from a conscious Soviet decision, hastened by Somali disenchantment, to switch sides in the conflict on the Horn of Africa. Countries with more stable regimes and continued economic and political contacts with the West, such as India and Iraq, are not as susceptible to Soviet threats of an aid cutoff, and theoretically have greater control over the degree of influence that the treaty may provide to Moscow.

Moscow continues to seek additional treaties with developing countries. The most recent pact was signed with the avowedly Marixst South Yemeni regime in October 1979. Many nations, however, are not anxious to sign such agreements. For example [security deletion] but makes every effort to limit undue Soviet influence which might accompany this aid.

D. NAVAL POWER PROJECTION

Soviet naval forces are performing a vital role in the U.S.S.R.'s growing capability to project power and influence around the globe. Expanding Soviet naval activities are particularly evident in the Indian Ocean/Persian Gulf and Pacific Ocean regions, but also in the Atlantic and Mediterranean areas. Increases in force strengths and deployments are heightening the threat to U.S. and NATO interests in these areas.

1. Atlantic Ocean

Soviet naval activity in the Atlantic Ocean is focused in sereval areas: the Norwegian Sea/North Atlantic, the area off West Africa, and the Caribbean.

Although the Soviets do not maintain a continuous naval surface combatant presence in the Norwegian Sea/North Atlantic area, they conduct annual spring exercises in this region involving as many as [security deletion] surface ships and [security deletion] submarines. For the past 3 years these exercises have involved the return of the *Kiev*-Class carrier (CVHG) *Kiev* to the Northern Fleet following a winter deployment to the Mediterranean. The exercises have included most aspects of tactical warfare, including antisubmarine warfare (ASE) and antisurface warfare.

The Soviets also routinely react to NATO exercises conducted in the Norwegian Sea. Historically, such reactions have centered on surveillance and intelligence collection involving auxiliary general intelligence ships (AGIs), aircraft

surface combatants, and submarines. However, against NATO exercise Ocean Safari in 1979, the Soviets committed two surface combantant task groups [security deletion].

The Soviets have not established a [security deletion] naval squadron off West Africa, such as they have done in the Mediterranean Sea and the Indian Ocean, but their presence in the region is well established. They have maintained a continuous naval presence in this area for 10 years. Soviet efforts to date have been primarily "show-the-flag" and support to client states in the area.

Continuous Soviet naval surface ship activity in the Atlantic, other than off West Africa, is principally composed of naval oceanographic research operations in many areas of the Atlantic region. Some of these research operations are for the development of ASW sensors and involve the use of submarines.

The Soviets continue to maintain intelligence collection patrols off Holy Loch, the U.S. east coast, and occasionally Ascension Island. Since the transfer of U.S. SSBN's from Rota, Spain to Kings Bay, Georgia in 1979, the Soviets have frequently placed [security deletion] intelligence collectors versus the normal [security deletion] off the U.S. east coast. These ABIs are positioned to monitor both SSBN and carrier transits and operations off Jacksonville, Florida. In conjunction with the Ascension Island Patrol, the AGIs are positioned to monitor both launch and down-range telementry of Trident missile tests.

[Security deletion.]

Since 1969 the Soviets have deployed a small naval force to the Caribbean on an average of two deployments per year. Typical force composition has been two surface combatants, a support ship, and occasionally a submarine. Deployments have averaged 45 days and included port visits to Cuba, excursions into the Gulf of Mexico, and exercises with Cuban naval forces. There has been a hiatus in Soviet deployments to the Caribbean since 1978. [Security deletion.]

The Soviets continue to strive for access to additional facilities in West Africa. [Security deletion.] While we do not know of any rights granted to the Soviet navy by Cape Verde, Soviet naval combatants did visit this island nation for the first time in 1979.

2. Indian Ocean/Persian Gulf

In response to political developments in southwest Asia and the deployment of two US carrier battle groups into the Arabian Sea in November 1979, the Soviets augmented their Indian Ocean naval presence from the normal [security deletion] ships to approximately [security deletion] units during December and January of 1980. Along with this augmentation, there has been a substantial increase in force capabilities. The Soviets normally maintain one or two missile-equipped units in the Indian Ocean. Since January, however [security deletion] missile-equipped surface combatants have been operating in the area. Soviet activity has been confined largely to close surveillance of U.S. forces in the northern Arabian Sea and to occasional [security deletion] training in the Gulf of Aden and Socotra Island areas. The Soviets are expected to maintain an expanded naval presence with increased antiship capabilities in the Indian Ocean so long as political tensions remain exacerbated and the U.S. maintains carrier battle groups in the area.

The Soviets have also established limited support facilities in the [security deletion].

Since late 1978 [security deletion].

3. Pacific Ocean

Pacific Ocean naval activity since early 1979 has been focused primarily on the South China Sea. With the deterioration of Sino-Vietnamese relations and the subsequent Sino-Vietnamese conflict, Soviet combatant groups began periodic deployments to the South China Sea in early 1979. These groups have operated for [security deletion] in the area and have consisted of approximately [security deletion] surface combatants and several submarines and support ships. Since [security deletion], respectively, the Soviets have maintained a continuous surface

ship and submarine presence in the South China Sea. The question as to permanence or evolution into a squadron such as in the Indian Ocean remains unresolved.

In the Pacific Ocean Fleet, modernization and qualitative improvements continue as more capable surface ships, submarines, and aircraft with improved weapons systems and sensors enter the fleet. Two recent additions include the *Kiev* Class aircraft carrier *Minsk* and the amphibious assault transport dock *Ivan Rogov*. The *Minsk* carries both Forger vertical takeoff and landing aircraft and antisubmarine warfare and reconnaissance helicopters. The *Minsk* is also armed with medium-range antiship cruise missiles, three antisubmarine weapons systems, two surface to air missile systems, and two gun systems. The *Ivan Rogov* is the Soviet's most modern amphibious ship. Its estimated lift capacity is approximately [security deletion] troops and equipment. In addition, two guided missile cruisers, two nuclear powered attack submarines, and a nuclear powered cruise missile submarine have also recently entered the fleet inventory. Backfires in Soviet Naval Aviation are expected to be deployed in this fleet [security deletion].

In support of their South China Sea operations, the Soviets have periodically deployed support and logistics ships—submarine tenders, stores ships, and oilers—to [security deletion]. Other than use of pier space for their afloat support forces, there is as yet little indication of Soviet use or control of facilities ashore for ship repair or maintenance at these ports. There are some indications, however, that the Soviets are using buildings at [security deletion] for limited billeting and administrative purposes.

Since April 1979 [security deletion] Soviet Naval Aviation BEAR aircraft have conducted [security deletion] deployments to [security deletion] these deployments were made by TU–95/BEAR D long-range reconnaissance aircraft, and [security deletion] were made by TU–142/BEAR F long-range antisubmarine aircraft. These deployments have varied in duration from [security deletion]. The BEAR Ds have operated primarily over the South China Sea where they conduct surveillance of [security deletion]. The BEAR Fs have operated over the South China Sea and the western Philippine Sea [security deletion].

4. Overview

Increasing Soviet naval power projection capabilities remains the cutting edge of the Soviet Union's ability to expand its influence throughout the world. Soviet naval capabilities in the Mediterranean and Caribbean Seas impact significantly on traditional areas of U.S. naval supremacy. Soviet Naval forces off West Africa sit astride critical raw materials routes, including those of Persian Gulf and Nigerian oil, upon which the United States and Europe are dependent. In the event of war with NATO, the Soviets could employ this contingent to threaten Western sea lines of communication. The U.S.S.R.'s growing naval presence in the Indian Ocean/Persian Gulf region applies pressure on traditionally pro-Western states, threatening to challenge free access by the United States and its allies to energy sources in this region. A Soviet naval presence in the South China Sea offers the Soviets several military advantages: (1) a staging area for surface ships, submarines, and aircraft to monitor U.S. and PRC naval activity in the area; (2) a capability for rapid contingency augmentation of Indian Ocean forces, thereby increasing their ability to respond to a crisis in that region; and (3) a presence astride a major sea lane of communication between the Indian Ocean and Pacific Ocean and an improved, though limited, capability for sea lane interdiction operations in the area.

E. DIRECT AND INDIRECT INTERVENTION

1. Afghanistan

The invasion of this country has clearly demonstrated the Soviet willingness and capability to directly intervene with military power outside the Warsaw Pact region.

While the situation in Afghanistan posed no real threat to the territorial integrity of the Soviet Union, the Soviets responded rapidly and massively to political events in that country. Approximately 120,000 Soviet troops have been committed to the invasion, including 85,000 in Afghanistan itself. The remainder are supporting the operation from the Soviet side of the border. Units have been formed to employ a combination of heliborne and ground assault techniques to combat insurgent forces.

Although they are able to react quickly to insurgent activity, overall Soviet troop effectiveness is limited by insufficient troops to hold ground once it has been cleared of insurgents, a related over-dependence on firepower, and deficiencies in

low-level training. The techniques they are employing are a modification of normal Soviet tactics, but they reflect the unique counterinsurgency situation and would not necessarily be applied on a conventional battlefield.

Soviet air power has played a significant role in the invasion of Afghanistan. Air transport was a key factor in the initial airlift of troops and equipment. It continues to have an important role in the movement of men and supplies. There is increasingly active close air support to the ground forces by fighter bombers and helicopters.

Given the rugged, mountainous terrain and the elusive nature of insurgent targets, the helicopter is generally well suited to Soviet requirements in Afghanistan. The Soviets have deployed large numbers of Hind, Hip and Hook helicopters in Afghanistan to provide both firepower and mobility.

Soviet forces in Afghanistan are definitely using non-lethal chemical agents against the insurgents. Continuing allegations of deaths resulting from chemical attacks indicate [security deletion].

In spite of the size and quality of their forces, the Soviets are experiencing problems. Current force levels are insufficient to establish a stable, pro-Soviet regime. The present regime is incapable of securing the support of the Afghanis.

To achieve their objective, the Soviets will have to maintain control of [secuity deletion] into an effective and reliable counterinsurgency force. From a purely military standpoint, an immediate [security deletion] could be justified, and we anticipate that [security deletion] be committed. However, Soviet commanders may attempt to control the situation for the present [security deletion].

2. Iran.

Soviet ground forces opposite northwest Iran in the Transcaucasus Military District (TCMD) consist of 2 armies and 1 corps. There are [security deletion] motorized rifle division (MRD) and [security deletion] division. These divisions include [security deletion].

[Security deletion.]
[Security deletion.]
[Security deletion.]

3. *Use of proxies*

The use of proxy assets (political, military, economic, and subversive) has added significantly to Soviet power projection capabilities. Proxies permit the promotion of anti-Western causes and the extension of Communist influence to areas where a major Soviet presence, especially military, might be either unwelcome, too blatant, denounced by local leaders, or even opposed by indigenous or external forces.

Expansionism through second parties has several advantages for the Soviets:

It minimizes Moscow's risks by reducing its visibility, thus affording greater flexibility in case of a setback;

It tailors the response by buttressing and supplying surrogates best able to wage a particular conflict or penetrate target institutions;

It serves to legitimize such activities in the eyes of many by giving the appearance of international support to "progressive" forces in a regional conflict.

The Cubans and East Europeans, especially the East Germans, remain the principal Soviet proxies. East European [security deletion].

Although Cuba's initial military successes in Angola and Ethiopia lately have degenerated into wars of attrition, Cuban advisers and troops remain throughout Africa and the Middle East. Substantial numbers are in Mozambique and South Yemen. While most visible in Africa, Soviet-based Cuban activities in the Caribbean and Central America—especially Jamaica, Grenada, Guyana and Nicaragua—are on the upswing. Such activities involve military, economic, intelligence and security operations. Cuban civilians abroad tend to concentrate in areas in which they have had some success at home, such as education and public health. In fact, Castro's assertion of a "natural alliance" between the less-developed, non-aligned nations and the Communist states is a classic case of a proxy espousing Moscow's aspirations.

East Germany has specialized in consolidating the hold of radical, pro-Soviet regimes through the training of police and security cadres and intelligence operatives, the penetration of local government infrastructures, and the development of orthodox local Communist parties and front organizations.

The Soviets have also pursued international advantages, either through active coordination or tacit acquiescence, by way of other nations whose interests

and aims often coincide with Moscow's. Examples are Vietnam's military activities in southeast Asia and periodic [security deletion].

III Soviet Force Developments

A. SOVIET CONCEPTS REGARDING THE CONDUCT OF NUCLEAR OPERATIONS

Long ago the Soviets recognized that the introduction of muclear weapons and missile delivery systems could alter dramatically the conduct of war. Soviet military and party leaders refined their military doctrine to account for, and focus on nuclear warfare. This doctrine provides the basic guidance for development of all forces and employment strategies and thus is of genuine significance for Soviet defense planners. The entire range of Soviet force developments and employment concepts bear the unmistakable imprint of the doctrine.

The Soviets hold the conviction that victory is attainable, even in a global nuclear war, provided that appropriate preparatory measures are implemented and military actions executed effectively. This does not mean the Soviet leadership prefers war to peace or that they consider general nuclear war inevitable. Rather, Soviet doctrine provides for the possibility of nuclear war and forecasts that such a war will be the decisive clash between opposing social systems from which socialism will emerge victorious.

Perhaps the most important tenet of Soviet military doctrine is the requirement to develop an effective war winning capability. The Soviets stress the requirements for achieving victory in the event war occurs, and view a war-fighting and war-winning capability as the best deterrent to war and as an effective instrument for supporting national strategy. The Soviets see nuclear weapons as tools to be used in the pursuit of that victory. The implementing strategy for Soviet doctrine is basically one of offensive counterforce targeting which is designed to achieve two objectives: Detruction of the opposing forces, permitting military victory, and simultaneous limitation of the damage those forces could inflict on the Soviet homeland The primary mission of Soviet offensive forces is the destruction of the enemy's immediate means to wage war. Intelligence on Soviet nuclear targeting interests and priorities [security deletion].

Soviet military doctrine holds that the seizure and maintenance of the strategic initiative is of paramount importance in war. This is particularly true of nuclear war in which the destructiveness of nuclear weapons will have a tremendous impact. Thus, the initial period of war is seen as being crucial. In this regard, Soviet doctrine stresses the benefits which accrue from the attainment of surprise and further stresses the necessity of offensive action. Thus, the Soviets have adopted [security deletion].

Evidence indicates the Soviets believe a war would probably begin with conventional weapons, particularly in Europe. However, the Soviets expect that in a war that began with conventional weapons, nuclear weapons would be used at some time. Further, Soviet doctrine proclaims a disbelief in the concept of limited nuclear war as we know it. Once the nuclear threshold is breached, the Soviets see little prospect for controlling escalation. While they no longer declare that [security deletion].

In general, the Soviets clearly desire to have the capability to employ their military forces in whatever degree of intensity or scale required to seize the initiative and pursue a military victory.

B. STRATEGIC FORCES

1. *Offensive systems*

a. Intercontinental

(1) *Intercontinental Ballistic Missiles (ICBM's).*—Last year the Soviets were nearing completion on the research and development flight test phase of improved accuracy variants of the MIRVed SS–18 and SS–19, and the deployment of these variants has already begun. In addition to the improved accuracy afforded by these missile models, one of the variants—[security deletion]. The latter appears most likely at this time.

Deployment of the new generation ICBMs is continuing at the expected level. There are [security deletion] of the MIRV-capable SS–17, SS–18, and SS–19 missiles deployed. The deployment program for the SS–17 was completed late last year—a total of [security deletion] missiles have been deployed. There are currently [security deletion] operational SS–18s. The SS–18 deployment program

should be completed by the end of this year when it is expected that [security deletion] of the missiles will be operational. It is anticipated that the Soviets will deploy [security deletion] SS–19s by the end of 1981—there are currently about [security deletion] operational. When the deployment programs for these new MIRVed ICBM's are completed, there will be about 818 MIRV-capable missiles, with the remainder of the force comprised of older SS–11 and some SS–13 missiles. Under SALT II the Soviets would be constrained to 820 MIRVed ICBMs. In the absence of a SALT agreement the Soviets could deploy a much larger number of the MIRVed missiles and significantly expand the size of their overall force through deployment of mobile ICBMs and new slio construction.

Even as the Soviets have continued to develop and deploy new models of the 4th generation missiles, there continues to be evidence that they are working on the next fifth, generation. The missiles under development are believed to include both liquid and solid propellant systems. The type and number of the new missiles tested and their characteristics will again be dependent to some degree on the status of the SALT II agreement which contains constraints on new missile testing and deployment.

(2) *Submarine-Launched Ballistic Missiles (SLBM's).*—A continuing upgrade in the capabilities of the Soviet strategic submarine force is the result of an ongoing Soviet force improvement and construction program. Production of their newest SSBN, the Delta III class, is still in progress, with [security deletion]. As new units have been launched and become operational, older SSBN's have been removed from service as missile platforms.

Although total numbers of SALT-accountable launchers (950 SLBM's) and platforms (62 modern SSBN's are unchanged from previous years, the continued modernization of the strategic submarine force increases it overall effectiveness. Since the introduction of the Delta classes in the mid-1970's with their longer-range missiles, the Soviets have been capable of striking targets in the United States even while in or near their home ports, thus complicating U.S. ASW efforts.

During 1979, SSBN deployment levels increased significantly. Yankee deployments grew from [security deletion] units continuously on patrol worldwide, while Deltas went from [security deletion] units continuously on patrol.

TABLE 12.—SOVIET STRATEGIC SUBMARINE DEVELOPMENT TRENDS

	1968	1974	1980
Ballistic missile submarines:			
Nuclear powered	[Deleted.]		
Diesel powered			
Total			

The Soviets are estimated to be in the final stages of construction of a new SSBN, which they have referred to as "Typhoon." This submarine will carry a new ballistic missile which is expected to be superior to previous Soviet submarine-launched ballistic missiles. [Security deletion.]

Foremost among Soviet naval policies will be the maintenance of the Navy's strategic nuclear role and capabilities. Moreover, the Soviets will not be satisfied merely with devoting a high level of effort to SSBN and SLBM programs, but will strive to ensure that their capabilities are perceived to be superior to those of the West. In support of this, it is believed that the new Soviet SSBN may become operational as early as [security deletion] and that it will at least match the U.S. trident program in numbers of submarines and launchers, and be comparable in MIRV capacity and possibly system accuracy.

3. Long-range aviation (LRA)

LRA's primary mission is to strike targets along the Soviet periphery with nuclear and nonnuclear weapons. Intercontinental nuclear strike is also a major mission, but the importance of LRA in this role has diminished with the emergence of the strategic missile forces. Secondary missions for LRA include long-range reconnaissance and the augmentation of Soviet Naval Aviation.

The force currently totals [security deletion] aircraft, comprising five bomber types. The only significant order of battle change in 1980 involved the continuing delivery of Backfire bombers. [Security deletion] were delivered to LRA this year [security deletion] of these to the Far East. Slight declines were noted in

Badger and Bison counts, a result of normal attrition for these two aging systems.

Backfire, the newest Soviet bomber and the only one currently in production, offers substantial improvements in range, speed, and low-level penetration capabilities over the older Badger and Blinder. Backfire deployment will continue through the 1980s, and by 1990 some [security deletion] are expected to be deployed with LRA.

About [security deletion] percent of these assets are based at [security deletion] airfields in the western U.S.S.R. opposite NATO Europe. The remainder of the force is situated along the Sino-Soviet border. Backfire's range potential allows the aircraft increased flexibility to use a variety of mission profiles and ordnance configurations when striking [security deletion] targets.

Bear and Bison, which make up [security deletion] percent of LRA's fleet, are dedicated to the intercontinental strike role. Although LRA has relinquished primary responsibility for intercontinental nuclear attack to the missile forces, the Bear/Bison force remains a viable component of the U.S.S.R.'s strategic nuclear threat.

It is expected that a number of new systems will be deployed in LRA during the next 10 years. Best estimate for deployment of a new bomber and [security deletion]. It is expected that a [security deletion] will begin being deployed in the early 1980's. Further, it is expected that Soviets will operationally deploy an [security deletion] in the early 1980's. In the late 1980's an improved variant of the ALCM is expected to be deployed with the new bomber and [security deletion].

(*b*) *Theater nuclear forces*

Over the past decade, the Soviets have modernized and expanded their nuclear delivery capabliities and have exerted great efforts to improve the flexibility, mobility and survivability of their theater nuclear forces. The number of nuclear-capable delivery systems has increased; the SS–20 intermediate range ballistic missile (IRBM) and the Backfire bomber have been deployed; nuclear artillery has been deployed in the U.S.S.R.; follow-on missiles for existing tactical ballistic missile systems have been developed and partially deployed; and new nuclear-capable tactical aircraft have been deployed. Soviet naval nuclear-capable weapons consist of cruise missiles, air-dropped ordnance and rocket-delivered nuclear depth charges.

Soviet forces for conduction theater nuclear warfare are of two distinct types: long-range systems—referred to as peripheral systems—assigned to the Strategic Rocket Force (SRF), Soviet Long Range Aviation (LRA) and the Soviet Navy; and tactical systems assigned to the Soviet general purpose ground, air and naval forces. The primary peripheral theater nuclear threat from the U.S.S.R. is from the SRF's medium range ballistic missiles of [security deletion] SS–4 MRBM's, [security deletion] SS–5 IRBM's, and [security deletion] of the new SS–20 mobile IRBM's, each of which has three multiple independently targetable reentry vehicles (MIRV's). While the number of older SS–4's and SS–5's is declining, deployment of the SS–20 continues. Since July of last year, the Soviets have added [security deletion] SS–20's to their operational force. The mobility of this system enhances survivability by making it extremely difficult to locate and target. The SS–20 is superior to the SS–4/SS–5 in range, accuracy, and refire capabilities. By the early-1980's, [security deletion] SS–20's are expected to be deployed.

In Soviet Long Range Aviation (LRA) and Naval Aviation (SNA), the Backfire bomber continues to be deployed. The Soviets could well decide to employ the Backfire or any number of older peripheral bombers, such as the Tu–16 Badger and Tu–22 Blinder, in nuclear strikes, thereby complementing their missile force and ground force's nuclear assets and demonstrating flexibility and versatility in nuclear use.

In the Soviet ground forces, improvements in system capability, as well as increases in the number of deployed systems, have begun to expand the theater nuclear options available to the Soviet leadership. The Frog [security deletion] km range), Scud [security deletion] km) and Scaleboard [security deletion] km) continue to be the backbone of the shorter range surface-to-surface missile (SSM) force for the ground commander. A new generation of SSMs, however, is beginning to be deployed. The SS–21 [security deletion] km), which is the Frog follow-on, has begun deployment in the U.S.S.R.; the SS–22 (about [security deletion] is is believed to have been replacing the Scaleboard since 1978; the SS–X–23, believed to be a longer range replacement for the Scud, could be deployed as early as [security deletion]). Each of these new missiles is expected to feature significantly improved warhead accuracies and reduced reaction and refire times.

Additionally, in the U.S.S.R., the Soviets have formed [security deletion].

Soviet tactical aviation has continued its aircraft modernization program to enhance its [security deletion] force capability and flexibility. The introduction of the latest variants of the Fencer, Flogger and Fitter aircraft, with their increased ranges and payloads and better survivability, increases the [security deletion] to targets deeper in an enemy's theater rear area.

The Soviet Navy has a variety of nuclear and nuclear-capable weapons for use in theater or tactical roles. These weapons are carried by aircraft, submarines, and surface ships and consist of cruise missiles, ballistic missiles and rockets and air-dropped ordnance. They include a mobile antiship coastal cruise missile [security deletion]. Several types of sufrace-to-air missiles carried by Soviet naval units are nuclear-capable as are some [security deletion]. There is at least one new antiship cruise missile in development. It is espected to have a range in excess of [security deletion] and to be deployed on both submarines and surface ships.

In addition to these peripheral and tactical systems, some nuclear-capable ICBMs are believed to be directed against theater targets. [Security deletion.] If the Soviets deemed it necessary, they could also direct a portion of their intercontinental submarine-launched ballistic missiles carried aboard the Delta and *Yankee*-class submarines against theater targets. Likewise, a portion of LRA's strike-configured long-range Bear and Bison bombers could be used to attack targets on the periphery of the U.S.S.R.

2. DEFENSIVE FORCES

a. Aviation of national air defense

Aviation of National Air Defense, or APVO, consists of regiments of fighter, interceptor aircraft assigned, along with surface-to-air missile units and air defense radar elements, to [security deletion] air defense districts throughout the Soviet Union. [Security deletion] of the 2,600 aircraft assigned to APVO are located in the European Theater. A high rate of modernization with post-1969 aircraft in the Western U.S.S.R. indicates a Soviet perception of greater requirements in the West compared to the East.

The APVO force has remained essentially the same size over the last year although modernization has continued with replacement of aging Su–9/Fishpot and MiG–17/Fresco with approximately [security deletion] newly-produced MiG–23/Flogger B [security deletion]. This upgrading with the FloggerB [security deletion] involved a total of [security deletion] units.

While the mission of APOV has traditionally involved the Defense of Soviet National Airspace, there are indications that APVO is involved in training that would provide Soviet military leaders with the option of supplementing frontal aviation's fighter aircraft. Aircrew training in support of this flexibility involves practicing final target acquistion without ground control after being vectored into the area of the target. APVO has, as well, conducted [security deletion] and practiced some limited fighter [security deletion] functions.

During the next ten years APVO force development will be driven by the Soviet requirement to defend against both low altitude aircraft and the cruise missile threat. As a result, we estimate that by 1990 the Soviets will have deployed at least APVO interceptors with a lookdown-shootdown capability. Currently they have no such systems deployed. Additionally, by 1990 we anticipate [security deletion] new airborne warning and control system or AWACS, aircraft will be deployed.

We believe that a [security deletion] will be specifically designed and employed to attack [security deletion. While this would simplify future Soviet air defense problems [security deletion] will contribute to a significantly more effective low altitude air defense capability.

b. Defensive missiles

Soviet surface-to-air missile (SAM) forces continue to undergo technical improvements which give them greater firepower and combat capability, although the size of the SAM force has not changed appreciably over the last year. The newest strategic SAM, the SA–X–10 [secuirty deletion] and could be operationally deployed at any time.

Under the provisions of the 1972 ABM Treaty, as amended, the Soviets are permitted a total of 100 antiballistic missile (ABM) launchers in the Moscow area. They have the world's only actively deployed ABM force. However, the

Soviets have dismantled 32 of the 64 ABM launchers dedicated to the defense of Miscow. The reason for this 50 percent drawdown is unclear at this time. They are restrained by the treaty from redeploying to other locations until 1982, and then they may redeploy only after notifying the United States of their intention to do so. Thus. short of abrogating the treaty, few options are available for consideration regarding the reason for the dismantlement. We do know, however, that their interest in ABM systems has not waned, since their research and development efforts have continued at a brisk pace. At this time, we are inclined to believe that they intend to either refurbish the existing system or to replace it with a new one.

C. GENERAL PURPOSE FORCES

1. General purpose ground forces

Soviet general purpose ground forces have under-gone a modernization and expansion program since about 1965, resulting in an increase of about [security deletion] troops in our assessment of these forces.

The expansion of Soviet ground forces along the China border by some [security deletion] divisions was accomplished during the 1970s without reduction in the ground forces elsewhere. It is not clear as yet whether a further net increase in ground forces is taking place in relation to the Afghanistan invasion.

As the Soviets place new weapons in series production and issue them to the field, older weapons are transferred to other units or [security deletion].

In recent years, large scale deliveries of new weapons systems have upgraded the firepower and mobility of the general purpose ground forces. The BMP amphibious armored personnel carrier carries an infantry squad of eight men in addition to the 3-man crew. Unlike earlier armored personnel carrier designs it carries its own cannon and guided missile which can defeat enemy tanks at a range of 3 km. The BMD is a smaller, more easily transported personnel carrier of the same concept as the BMP used by airborne divisions. At least [security deletion] in Soviet airborne divisions are believed to be equipped with this vehicle.

Since 1970, two new tank designs, the T–64 and the T–72, have reached the field in quantity [security deletion]. These tank designs feature progressively improved range and accuracy of fire, tougher armor, and simplified maintenance procedures.

Following the example of the United States, the Soviets have equipped them suitable for counterinsurgency operations.

Replacement of towed artillery with self-propelled artillery continues in Soviet divisions. In motorized rifle (mechanized infantry) regiments the standard artillery complement has expanded from a battery of 6 towed howitzers to a battalion of 18 self-propelled howitzers.

There have been substantial improvements in the air defense of ground forces, with the continued replacement of towed antiaircraft guns by mobile SAM systems. These improvements have yielded both increased firepower and mobility.

The logistic capabilities of the Soviet ground forces have vastly increased over the last decade through qualitative and quantitative improvements in equipment. Since 1971 motor transport cargo capability has more than doubled at *front* and army level, and by about 50 percent at division level, largely due to the introduction of larger capacity vehicles such as the modern [security deletion]. The ability to rapidly deploy tanks has been enhanced by the introduction in GSFG of over [security deletion] MAZ–537 tank transporters. Throughput capacity of POL has increased by [security deletion] percent since 1975 through the use of modern pumping equipment and automatic pipelaying machines. Since the early 1970's, the Soviets have improved their field maintenance by developing sophisticated mobile maintenance vans which are now found from battalion to *front* levels. The mobile capacity to carry spare parts stocks has increased by [security deletion] percent at division level and [security deletion] percent at army level.

As the quality of weaponry increases, we continue to see widespread reorganizations in ground force units to institute flexible combined arms cooperation between infantry, tanks, and artillery at the regiment and battalion echelons of command.

2. General purpose naval forces

The policies that the Soviet leaders have pursued since the mid-to-late 1950's have been principally intended to develop and expand the Navy's capabilities to: (1) Perform a strategic role; 2) wage war at sea, including combat against aircraft carrier strike forces, sea lines of communication, and submarines; (3) as-

sure Soviet dominance of the seaward approaches to the U.S.S.R.; (4) support of land theater of operations; and (5) operate worldwide as a credible instrument of national policy.

In 1959, the first ships and submarines equipped with antiship cruise missiles entered the Soviet fleet. In 1962, the first Soviet ship equipped with surface to air missiles entered the inventory. At present, the Soviet Navy is preparing to deploy its fourth generation of surface-to-air missiles, and the fourth generation of medium range antiship cruise missiles.

Recent trends in Soviet warships reflect continued emphasis on increasingly large missile equipped units with extensive command-control-communications and electronic warfare capabilities. Similar qualitative advances are expected to characterize warships entering the fleet during the next 5 to 10 years, thereby further enhancing the Navy's capability to conduct antisubmarine and antiship warfare and fleet defense. The overall force level is expected to decline gradually as older units are retired and are not replaced on a one-for-one basis, but it is obvious that the capabilities of the force will grow because of the qualitative improvements in the ships and their weapons systems.

TABLE 13.—GENERAL PURPOSE NAVAL ORDER OF BATTLE TRENDS

	1968	1974	1980	1983
Carriers			2	3
Cruisers	19	31	39	47
Destroyers	79	77	65	43
Frigates	100	134	169	156
Submarines [1]	344	259	295	257
Total	542	501	560	506

[1] Excludes ballistic missile submarines.

Despite an anticipated decline in total numbers of ships and submarines, Soviet naval policies and programs of the 1980's will appreciably improve the Soviet Navy's current capabilities and add significant new ones. Thus, the Soviet leadership's ability to use the array of military and political options available across the entire spectrum of conflict will increase.

Soviet naval policy is intended gradually to achieve greatly improved capabilities for sustained, long-range naval operations even against substantial opposition. Soviet naval policy of the next decade will emphasize the development of larger surface ships than those built in the 1970's—aircraft carriers, cruisers, replenishment ships, and amphibious ships.

These general purpose programs also promote the credibility of the increasing Soviet involvement with the developing countries. The Soviets probably believe that the opportunities for advancing their interests in the developing countries are likely to increase. They believe that a relatively modest naval presence can exert an influence far beyond that warranted by its intrinsic military capabilities. They probably also believe that in the future a larger and more credible presence will both help resolve local conflicts in their favor and deter intervention by other countries.

a. Aircraft carrier and other surface warship programs

The next decade probably will see the Soviets produce their first full-scale attack aircraft carrier. It probably will displace about [security deletion] thousand tons, probably have [security deletion] and carry high-performance aircraft. [Security deletion.] Since the Soviet Navy has had relatively little experience in designing, building, and maintaining aircraft carriers, or in operating large task forces in distant areas for extended periods of time, it is likely they will proceed gradually in the construction of such forces. The Soviets soon will complete the KIROV, first of the large [security deletion] new class of nuclear-powered guided missile cruisers. At least [security deletion] of this class probably will enter service by the late 1980's.

The Soviets will likely also continue to produce three other new cruiser classes, not nuclear-powered, the lead units of which should become operational in 1981. These programs will add some [security deletion] thousand tons each. These classes will introduce two new SAM systems (naval versions of [security

deletion] at least one new antiship cruise missile, and possible a new gun system, as well as improved electronics.

b. Submarine programs

The Soviets will probably simultaneously enhance their general purpose submarine programs, qualitatively as well as quantitatively. We believe tnat the rate of general purpose submarine construction will be increased to [security deletion] units annually during the early 1980s. This rate is still well below that which can be supported by total Soviet submarine shipyard capacity. Among these units will be a new large class of nuclear powered cruise missile submarine, continued production of VICTOR III or follow-on and Alfa or follow-on attack submarines. Additionally, some Yankee class submarines will be converted from the ballistic missile to general purpose role.

c. Other surface combatant programs

The naval construction programs most likely to suffer the largest relative numerical decline in the 1980s are those involving coastal escort and patrol types, torpedo boats, submarine chasers, and to a lesser degree, mine warfare types. The reduction in these forces probably will be about [security deletion] percent, from about [security deletion] units to something less than [security deletion]. There is considerable evidence, however, of continued Soviet expenditures on the qualitative upgrading of these forces.

d. Amphibious and logistics ship programs

The *Rogov* class amphibious assault transport dock and the *Berezina* Class replenishment oiler (AOR), both of which initially appeared at sea in 1978, suggest that the trend toward larger-displacement warships has set the tone for amphibious and logistics ship programs as well. The *Rogov's* 13,000 ton displacement is more than double that of the largest amphibious ship the Soviets had ever acquired before. In addition to size, the *Rogov's* speed, armament, electronic warfare equipment, and underway replenishment gear provide a significant capability for sustained deployment in distant waters. Additional units of this or a follow-on, class can be expected in the 1980s.

In auxilliary ships, the very large (35,000 ton) and heavily-armed *Berezina,* Class AOR [security deletion] probably will be followed by at least one similar ship later in the 1980's. [Security deletion.] Another new auxiliary—a hospital ship, which the Soviets have said is indispensable for distant combat operations—is being acquired from Poland. We believe that future auxiliary ship construction programs will continue to emphasize relatively large ships with capabilities to support distant operations.

e. Naval air programs

The Soviet commitment to developing carrier-borne air capabilities will result in significant changes in the composition, size, and character of Soviet naval aviation. The "FORGER" VTOL aircraft carried by the *Kiev* class represents an appreciable Soviet investment which [security deletion] would pose a significant threat to the air forces of many developing countries. It is only the initial Soviet entry in the carrier-borne aircraft field, however [security deletion].

The Soviet Navy will continue to modernize its long-range antiship strike capabilities through the 1980's by the continued acquisition of Backfire and more sophisticated weapons [security deletion].

In the coming decade, the Soviet Navy will continue to develop new weapons systems and consequent capabilities at least at the pace it has since 1968. These developments will further challenge Western nations even in areas traditionally considered major strengths.

3. General purpose air forces

a. Frontal aviation

Soviet frontal aviation, which is often referred to as tactical aviation in the United States, consists of those fighters, fighter-bombers, bombers, and reconnaissance aircraft intended for conducting joint combat activities with the ground forces. The mission of frontal aviation involves both the conduct of offensive air operations and direct support of the ground forces.

There are over [security deletion] combat fixed-wing aircraft in frontal aviation, over two-thirds oriented toward Europe. The force levels in both the European and Asian theaters have remained stable over the last year. The force modernization program has, however, continued. The force modernization effort, defined as post-1969 models, has been concentrated in the West.

TABLE 14.—SOVIET FRONTAL AVIATION MODERNIZATION

	January 1979	January 1980
European	[Deleted.]	
Asian		
Total assets		

* Percentage figures indicate post-1969 model aircraft, including reconnaissance aircraft.

Modernization of the fixed-wing operational combat force has reached [security deletion] percent. Counterair assets are now [security deletion] percent modernized. Ground attack aircraft are now [security deletion] percent modernized. The reconnaissance ECM force continues to trail the other combat elements with only [security deletion] percent of its assets modernized.

During the past year, upgrading activity occurred in twenty units [security deletion] the geographical regions of frontal aviation deployment.

The Soviets continue to implement a change of emphasis from air defense over the forward edge of the battle area to air attack in all its forces. Compared to pre-1979 frontal aviation aircraft, the new aircraft acquired in the present cycle of modernization have substantially improved range, payload, avionics, and electronic counter-measures (ECM) capabilities, and they provide a more flexible multiple-mission potential. In addition, the Soviets are beginning to make limited strides in training their more experienced pilots to function without ground control beyond vectoring into the target area.

During the next 10 years, we believe the numbers of fixed-wing aircraft in frontal aviation will [security deletion]. Modernization of frontal aviation, however, will continue. The deployment of aircraft currently in production will probably continue through the mid-1980's, and a follow-on cycle of modernization will begin in the [security deletion] time frame as the aircraft currently in development and testing enter initial deployment. One major feature of the future modernization will be the qualitative improvement in avionics.

By [security deletion] aircraft in the follow-on generation will be deployed in quantities large enough to have an impact on the overall capabilities of the force.

We expect these new systems to be initially deployed with the Soviet [security deletion]. We also expect the Soviets to aggressively pursue the qualitative upgrading of their aircrew training.

b. Helicopter forces

Soviet helicopter forces have continued expansion and modernization during the past year. Since May of 1980, a new attack regiment has been detected forming at [security deletion] raising the total of such regiments to [security deletion]. When these [security deletion] attack regiments are added to the 19 transport helicopter regiments, the Soviets have a heliborne ground attack and assault force of [security deletion] independent regiments totalling [security deletion] helicopters. Modernization has been most recently evidenced by the introduction of additional Mi-24/HIND E. In [security deletion] began receiving new Hind E to replace older Hind D formerly assigned. In June of 1980 the regiment at [security deletion] began receiving Hind E. When these two regiments are fully reequipped the Soviets will have [security deletion] opposite NATO, and perhaps as many as [security deletion] in the force. The Hind E is configured with the AT-6/Spiral antitank guided missile (ATGM) system which has a maximum standoff range of [security deletion] meters for the older swatter ATGM found on on Hind D. The Spiral also allows the Hind E to [security deletion] which decreases the Hind E's vulnerability to enemy air defense and enhances its survivability in combat.

c. Military transport aviation (VTA)

Soviet Military Transport Aviation is charged with the primary responsibility for providing airlift services for the Soviet armed forces. Possibility the most important role is the responsibility for providing airlift support for assault operations conducted by the Soviet airborne troops. This support may include either airlanding or airdropping of paratroops and their supporting equipment and follow-on logistic support. In recent years VTA has taken on the additional mission of providing [security deletion].

Some [security deletion] medium- and long-range cargo transports are currently assigned to VTA airlift units. AN–12/CUB medium-range transports make up [security deletions] percent of this force. Long-range transports of two types—AN–22/Cock and IL–76/Candid—comprise the remainder of the force.

The AN–12/CUB is the backbone of the VTA fleet. It can carry all items of equipment currently assigned to Soviet airborne divisions.

The AN–22/COCK is the largest Soviet transport aircraft. It can carry all items of equipment assigned to air borne, motorized rifle, and tank divisions, including their tactical missile systems, and provides the Soviets with their only outsize lift capability.

The IL–76/Candid is the newest VTA transport. Last year about [security deletion] new Candid were added to the force to replace AN–Cub/aircraft. The Candid is a marked improvement over the Cub in almost all aspects.

TABLE 15.—TRANSPORT AIRCRAFT

	AN–12/Cub	IL–76/Candid
Normal payload	[Deleted.]	
Maximum payload		
Minimum runway length		
Paratroop capacity		

The capability of the VTA to support power projection goals in areas close to the Soviet Union has been demonstrated by its effective support of the intervention in Afghanistan. The potential to support operations at greater distances from the Soviet homeland, such as the aid to Ethiopia and Vietnam in recent years, will grow as the longer-range IL–76/CANDID continues to replace AN–12/CUB aircraft.

The Soviets can also call on the considerable reserve offered by Soviet civil aviation—Aeroflot. Some 1,230 medium- and long-range transports are available to increase lift capacity of equipment and personnel.

The VTA force is now increasing in terms of its lift capability, and by 1990 some force growth may also occur. During the next 10 years the Soviets are expected to continue to improve VTA's range and payload capabilities by both modifying current systems and by deploying two new transport aircraft. The Soviets will be increasingly capable of transporting greater quantities of larger equipment, including medium tanks, over greater distances than is currently the case.

(d) Civil defense

The Soviets, in the belief that nuclear conflict is survivable and winnable, have been engaged in a massive civil defense (CD) program. The military-directed program was revitalized in the late 1960s and has achieved a momentum which currently requires funding at an annual level equivalent to about $2 billion. All segments of Soviet society are engaged in the program, but the brunt of ongoing responsibility is borne by more than 100,000 civil defense personnel, about a third of whom are military.

The Soviet effort is directed at ensuring the survival and functional continuity of Soviet leadership throughout all phases of conflict, the protection of key production facilities and war-supporting industry, and the sheltering or evacuation of the general population. Progress in achieving the first objective has been notable. Most of the estimated [security deletion] leaders (from Brezhnev through republic and oblast levels) have hardened shelters available which are capable of protecting them from all but direct hits. Among the remainder of the population, essential workers have been accorded special consideration through construction of dedicated shelters at important facilities and assignment of preferred dispersal locations. A key element of the national CD training program has been preparation for a massive evacuation of selected urban areas by the general population during an international crisis. Should circumstances allow for full implementation of sheltering, dispersal, and evacuation measures, the Soviets would probably suffer fewer than [security deletion] million fatalities from an all-out U.S. retaliatory nuclear attack.

An array of plans (industrial relocation, hardening, rapid shutdown, and others) is directed toward protecting Soviet industry for war support and postwar survival and recovery. However, there is little evidence that plans for the physical protection of industrial installation have been or could be readily implemented.

Progress made in protecting key workers through shelter construction and dispersal represents the most effective aspect of production protection.

IV. Chinese Internal Affairs

A. POLITICAL STABILITY AND LEADERSHIP

Chinese Communist Party Vice Chairman Deng Xiapoing and other proponents of China's current military and economic development policies are taking action to insure the political stability of their regime and the survivability of their programs. Personnel assignments and organizational restructuring are intended to insure leadership continuity and to improve administrative efficiency. Promoting successors, retiring ineffective senior leaders, and streamlining leadership groups have been a constant concern of China's policymakers. When current organizational plans are fully implemented, Beijing hopes to have a new leadership core that will vigorously advance the current modernization objectives.

Over the past year, significant efforts have been made to promote relatively younger, more administratively proficient cadre to national leadership positions. In general, appointments have returned leaders to positions they held prior to the Cultural Revolution. Criteria proposed by Deng Xiaoping in August 1979 require cadre under consideration for promotion to support the political and ideological line of the (Deng-dominated) Third Party Plenum of December 1978, uphold party spirit and not practice factionalism, and be physically capable of working an eight-hour day.

Decisions made at the February 1980 plenary session of the Chinese Communist Party Central Committee reaffirmed Beijing's commitment to establishing both a collective leadership and an orderly succession process. The meeting approved a resolution to reestablish the Central Secretariat which has assumed some of the functions of the Politburo; it will direct the normal administrative affairs of the party and initiate broad party policy. Thus, the number of cadre involved in policymaking has been increased. The Secretariat is composed of relatively young experts in political, economic, and military affairs so that an orderly succession process can take place.

The plenary session also promoted Deng Xiaoping proteges, Hu Yaobang and Zhao Ziyang, to the Politburo Standing Committee. Hu's promotion and his concurrent selection as General Secretary of the Central Secretariat marks him as a strong contender for leadership in party affairs. Hu is the first person to occupy the General Secretary post since Deng was removed from the position during the Cultural Revolution. Hu's job as General Secretary will be to administer the day-to-day operations of the party and monitor implementation of party directives.

Zaho Ziyang has been selected as Executive Vice Premire of the State Council. In this role, Zhao will assume greater responsibility for the daily affairs of state and serve as liaison among the other vice premiers. It is certain that Zhao will assume Deng Xiaoping's responsibilities in government when the latter relinquishes his vice premiership.

Deng and a number of other senior leaders are expected to give up their vice premierships this year to make room for younger cadre in the national leadership. It is possible that Party Chairman Hua Guofeng will relinquish his premiership at that time. Hua's authority has been diminished because of the emphasis on collective leadership and by the staffing of critical governmental and military organs with cadre loyal to Deng Xiaoping. To relinquish the premiership at the same time as other senior leaders are stepping down would connote Hua's support for the current policy and allow him to save some prestige. As part of Beijing's effort to draw a distinction between party and state affairs and improve administrative efficiency, fewer leaders are being granted offices in both sectors. Should Hua step down from the premiership, he could be depicted as a model for other leaders, since even Mao did not hold this important state post when he was party chairman.

Although recent comments by Deng indicate that he favors a reassessment of Hua's role, China's collective leadership has acted decisively on matters of national unity and stability. Thus [security deletion]. Although Hua is not a policy innovator, he has been a solid supporter of modernization and [security deletion].

It is highly probable that Hua will retain his position as Chairman of the Chinese Communist Party. This will support Beijing's contention that the current regime is stable and unified. China's leadership is committed to the nation's modernization objectives and improved relations with the West. These goals

should continue for the foreseeable future and should not be adversely affected by Hua's decline in power or the power-sharing arrangements still being worked out by Mao's successors.

B. MODERIZATION INITIATIVES

The original "modernization goals" announced by Chairman Hua Guofeng in 1978 are now recognized as having been too hastily put together, overambitious, and generally unattainable. Possibly as a result of contacts with the West, the Chinese have become aware of management problems and basic problems in the balance between agriculture and industry. China's leadership has announced that the economic planners need time to sort out priorities and resource availability. The years 1979 through 1981 have been described as a time for "readjusting, restructuring, consolidating, and improving" the economy in order to lay the basic foundation for strong, well balanced future development.

The major aspect of this readjustment period is to scale down earlier production targets and redirect resources away from heavy industry toward light industry and agriculture. High priority is still being give to the energy fields—coal, petroleum, and electric power—and to the transportation and communications infrastructure. Considering the complex nature of this period, it will probably take more than [security deletion] to complete the readjustment process.

1. *Agriculture*

Agriculture is the mainstay of China's economy, employing about 80 percent of the population. Recognizing this significance, Beijing has emphasized the rural sector as the primary factor in the economic modernization program. In all likelihood, agricultural success will determine the country's prospects for industrialization and long term economic development. Agriculture is not only needed to feed the Chinese people but also to provide raw materials (cotton, hemp, silk, rubber, etc.) for industry.

In addition, the Chinese agricultural goods that are used as export commodities are extremely valuable as a source of hard currency. Without these earnings, Beijing would not be able to buy much of the Western equipment and technology that are needed for economic modernization. For example, in 1979, agricultural goods accounted for 30 percent of total exports and reduced the nonagricultural trade deficit of $2.2 billion to a total trade deficit of $1.2 billion.

In the past, Chinese agricultural output levels have been characterized by periods of growth interspersed with periods of relative stagnation. The average annual increase of 2–3 percent has barely kept pace with the population, which is growing by about 15 million each year. Over the period 1952–1979 per capita availability of grain increased only 20 percent for an annual average increase of only .7 percent. In 1979 agricultural output increased dramatically with a record grain output of 332 million metric tons, 9 percent above the 1978 harvest. Unusually favorable weather, the increased use of chemical fertilizer and other modern imports, and the incentive effect of new agricultural policies accounted for this increase. The excellent 1979 harvest has encouraged the Chinese leadership to implement more policies aimed at both increasing total output and raising living standards. Price increases for agricultural products and price reductions for agricultural imports are two of the more significant policy changes. Other supportive measures include the encouragement of private plots and village markets. These policy changes are combined with sharp increases in investment in agriculture. Total state investment in agriculture was 10.7 percent in 1978, 14 percent in 1979, and is targeted for 18 percent by 1981–82. While it is very evident that agriculture holds the number one priority in the Chinese development scheme, the success of the program will depend, at least in part, on such uncontrollable factors as weather and foreign food demands.

TALBE 16.—AGRICULTURE

Year	Grain production (million metric tons)	Per capita availability (kilograms)
1970	243	286
1971	246	282
1972	240	269
1973	266	294
1974	275	297
1975	284	297
1976	285	293
1977	286	291
1978	305	310
1979	332	334

2. Industry

Years of political turmoil have disrupted industrial development in China. Unbalanced planning and technological isolation have created an industrial sector plagued by heavy underemployment in general and high unemployment among Chinese youth. Key aspects of the problem are shortages of coal, oil and other raw materials, an overburdened transportation system, insufficient electric power, and overall inefficiency and mismanagement. Although the current readjustment plan gives much verbal attention to light industry, and while there have been some shifts in investment, overall priority in terms of resource allocation continues to go to heavy industry. The high priority assigned to transportation and communications is intended to help alleviate some of the most pressing problems.

TABLE 17.—CHINA: INDUSTRIAL PRODUCTION

[In billions of 1970 yuan]

Year	Value	Percent change from previous year
1970	206	
1971	229	11.2
1972	250	9.2
1973	279	11.6
1974	284	1.8
1975	327	15.1
1976	326	—.3
1977	372	14.1
1978	423	13.7
1979	456	7.8

a. Transportation

Significant improvements have been made since 1970, but China's rail transport and maritime port development have failed to keep pace with the demands made by the current modernization drive and increases in foreign trade.

In order to achieve an increased rail transport capability, modernization plans must include expanded and modernized yards and repair shops; lengthened passing tracks; increased electrification; construction and/or conversion of single-track lines to double-track; extension of modern signalling; acquisition of more powerful locomotives and rolling stock with increased capacities; establishment of standards for both track and equipment; more extensive use of mechanized equipment in construction and maintenance; and introduction of improved repair techniques.

Although maritime port facilities have been improved, China suffers from an insufficient number of deep-water berths and facilities for handling containers and such specialized cargo as oil, grain, and coal. Inefficient cargo handling techniques, a national transportation system unable to adequately move cargo inland and delays in turnaround time continue to cause congestion in many of China's ports.

Since 1973, over 45 berths for 10,000-ton-class vessels have been built and more than 55 new berths to accommodate vessels of up to 100,000-tons are currently under construction. As few Chinese ports have depths adequate for ships of this size, the dredging of harbors and navigation channels will remain a key aspect of the country's port development program. In recent years the Chinese have acquired an impressive fleet of modern dredges and other types of harborcraft, although not nearly enough to meet the country's current needs.

Containerization has been introduced at five ports but only one has what must be considered a modern container handling facility. Five ports are engaged in bulk oil handling. Modern grain handling equipment and storage silos are found at only three ports while only six ports have modern coal handling facilities. Most of the coal shipped through these ports is for domestic consumption and expansion of facilities at these ports will be required to handle the expected increase of coal exports in the future.

In an attempt to relieve congestion, a problem common to many of the country's ports, China has recently opened several ports previously closed to foreign trade. These include seven "satelite" ports along the Chang Jiang (Yangtze River), apparently to help alleviate congestion at Shanghai, China's largest and most modern port.

b. Communications

China has been actively striving to upgrade basic domestic communications facilities, recognizing that modernization as a whole is heavily dependent on the availability of adequate and reliable telecommunications. In the interests of security, reliability, and survivability [security deletion]. While most of the development programs have improved communications capabilities between major population centers, advanced equipment has as yet replaced only a miniscule portion of the outmoded long-distance nets. Open-wire lines and inefficient predominately manually-operated terminals form the basic telegraph and telphone nets operated for both civilian and military use. In direct contrast, excellent technically advanced international communications facilities have been developed since 1972.

As in other areas, China prefers to acquire foreign technology and manufacture locally, rather than put out vast sums in actual equipment purchase costs. Steps are being taken to develop domestic production of more modern equipment through indigenous engineering efforts and by seeking out joint venture arrangements with foreign investors.

Much of the most visible recent effort focuses on planning for a [security deletion].

Delegations travel frequently to and from China, Japan, Western Europe, and the United States seeking out the latest technology and studying its suitability for assimilation into the national communications network. Chinese planners, scientists, and engineers are continuing efforts to enhance China's ability to design and manufacture new generation equipment. The overall program however, suffers from the apparent lack of a definite, coordinated, long-term development plan. Often different agencies work at cross-purposes, resulting in wasted time, effort, and resources.

[Security deletion].

As a general rule, all communications systems in China should be considered military-capable as usurpation in time of crisis can be expected.

c. Light industry

Within light industry, the emphasis is on those sectors that are capable of producing quick returns on investment and earning hard currency. Therefore, the new policy calls for devoting more resources to textiles, food processing, consumer durables, electronics, and tourist facilities. The current policy includes imports of technology and equipment to update and streamline these light industrial facilities. Compensation trade arrangements are being arranged to help finance purchases.

d. Defense industries

It appears that the economic readjustment period also applies to the defense industries. Until 1981 the defense industries will concentrate on laying the groundwork for the future by acquiring foreign technology and management practices. This policy serves the military, which hold large quantities of dated materiel, most of which is based on old Soviet designs. Underutilized defense plans are to produce civilian goods for domestic and foreign sale; the objective here is to strengthen the overall economy more rapidly by tapping the skilled manpower and advanced machinery controlled by the large defense industrial sector. A strengthened economy will, in turn, speed defense modernization in the mid-1980s and beyond.

Although priorities within industry appear to have been established, it remains unclear precisely how the Chinese plan to manage and control the increasingly complex industrial infrastructure. These improvements have failed to keep pace with the demands placed on China's ports by the current modernization drive and the concurrent sharp rise in foreign trade of recent years. Both management of the individual facilities and the conflict between regional and national coordination remain at least partially undetermined. Although some changes are taking place, no coherent policy has yet been enacted.

3. Science and technology

Despite a lot of window shopping, China has yet to make large scale purchases of foreign weaponry. Chinese leaders have stated that they wish to obtain foreign production technology and licensing arrangements, rather than become dependent upon foreign suppliers for finished items. A few items may be purchased, however, so that they can be copied.

[Security deletion].

These developments may also reflect Chinese concern over costs and the realization that more basic problems of technology and training have yet to be overcome. They may also reflect serious Chinese problems in developing coordinated plans for specific future needs, both civil and military.

While many reports have highlighted Chinese interest in [security deletion] considerable attention has also been paid to land armaments—especially [security deletion]. These contacts have enabled the Chinese to obtain free technology and advice about advanced weapons, vast amounts of technical literature, and in some cases training for production engineers and technicians. China may be applying this technology to the [security deletion].

China has been negotiating with numerous Western countries for a variety of contracts aimed at modernizing the shipbuilding industry. Contracts reportedly have been concluded with [security deletion]. China has also been window shopping for naval ships of all types as well as propulsion systems, weapons systems, and electronics, but has not made any purchases.

4. Military

A sweeping reassignment of top military leaders by Beijing's heirarchy has been taking place since February. The current reshuffle promotes the next "generation" of People's Liberation Army (PLA) officers to higher leadership positions and forces a number of senior leaders into a semiactive advisory capacity in order to advance defense modernization.

The reassignments replace senior generals—those who are now in their 70s—with more junior generals who have had combat experience in the Korean War and range in age from the mid-to-late-60s. The transfers should lift the morale of the PLA by increasing the upward mobility of its officers. China's military modernization program will benefit from the increased number of more vigorous leaders in the upper echelons of command.

The lack of a retirement program has resulted in the retention in senior positions of many leaders who are unable to meet the demands of their offices due to advanced age, poor health, or both. In addition, many senior leaders have not kept pace with modern techniques and may even have resisted the introduction of advanced technology and military strategy currently being acquired from military contacts abroad and undergoing study for possible use by the PLA. Over the past year, leading cadres have been urged to "emancipate" their thought in support of the four modernizations.

Formerly, there was no way to gracefully retire leaders since retirement was equated with a loss of prestige and influence. Beijing is planning to introduce a formal retirement program and has attempted to soften the blow by funneling some senior PLA officers into organizations that will allow them to remain active in military affairs but will remove them from the operational chain-of-command. The most wide-reaching of these organizations are the advisory groups. These groups have been identified in the Military Commission, the General Staff Department, and certain military regions and military districts. As advisors, military leaders will have an opportunity to pass down their experience to younger leaders, share their expertise in appropriate instances, and remain active in military affairs. They will not have the burden of assuming full time responsibilities or keeping up with the weapons and methods of modern warfare.

The appointment of Yang Dezhi as Chief of the PLA's General Staff Department is one of the most significant of the current mass transfers of China's military leaders. A seasoned army officer who led components of the first Chinese troops into North Korea in 1951, Yang served first as deputy commander and then commander of the Chinese People's Volunteer Army in Korea from 1952 to 1955. Yang was transferred to Kunming Military Region just prior to China's February-March 1979 incursion into Vietnam, and was one of the commanders of that operation. His appointment is indicative of the increasing emphasis on modernization and professionalism in the PLA—now career army officers will manage day-to-day military affairs.

The Chinese military modernization drive has had a significant impact on the character and nature of military training. Faced with fiscal constraints and the low priority given to military development, the Chinese have apparently decided to emphasize less cost-intensive programs, such as training. In addition, the Chinese fully realize that even if they were to purchase large numbers of modern weapons, their acquisition would not by itself transform the PLA into a modern fighting force. They fully appreciate that PLA members must have both the tech-

nological expertise to operate these new weapon systems and a high level of professionalism. Consequently, there has been a noticeable trend to reduce the number of hours dedicated to political training in favor of more technical and purely military activities. Essentially closed since the Cultural Revolution a decade ago, the military school system has been reopened. Chinese soldiers now learn not only Chinese tactics, strategy and doctrine but also that of foreign countries. Elements of Chinese tactical doctrine have even been modified to incorporate Western experiences in fighting a modern war.

In the past, the Chinese Army has relied primarily on existing weaponry to close the military gap with the Soviet Army in terms of mobility and firepower. However, there are now clear indications that the Chinese have also developed self-propelled weapon systems and antitank guided missiles [security deletion].

A reliable source has also indicated that the Chinese Army [security deletion] ATGM system. Depending upon the accuracy of the ATGM system and the extent of its deployment to operational units, the ATGM could have a significant impact on Chinese capabilities to deal with the Soviet armor threat. The most glaring deficiency of the Chinese Army in defending against a Soviet invasion has been the lack of a sophisticated, medium-range, antitank system. As a result, the Chinese have had to rely on elaborate antitank obstacles along likely tank avenues of approach, direct-fire artillery, and the bravery of the individual soldier armed with antitank grenade launchers. If the ATGM system is widely deployed within the army, this situation will change dramatically. Deployment of such an ATGM system will also contribute to deterrence by raising the cost of a Soviet ground invasion. The addition of the ATGM capability will have an impact on Chinese tactical doctrine and could ultimately affect the overall strategy for national defense.

C. ECONOMIC SUMMARY

1. Military spending

For the first time in 20 years, China announced figures for its defense budget in 1979. Data were given for the three year period 1977 through 1979, indicating that military outlays grew 12.6 percent in 1978 and 20.5 percent the next year. The only amplification offered concerning these expenditures was that they were all devoted to national defense and preparations against war. In addition, the 1979 increase was justified on the grounds that Beijing had been compelled to launch what the Chinese referred to as "a limited counterattack" against Vietnam.

Although not clearly defined, the announced budget figures [security deletion].

Comparing the announced budget figures with the estimated total outlays [security deletion].

The estimated Chinese military expenditures during the period 1965–1979 have been characterized by three separate patterns of change. During the early years [security deletion].

The current resource allocations to the military are [security deletion].

TABLE 18.—ANNOUNCED CHINESE DEFENSE BUDGETS

Year	Defense budget (billion yuan)	Increase over previous year (percent)	Portion of national budget
1977	14.9	Unknown	17.7
1978	16.8	12.6	15.1
1979	20.2	20.5	18.0

TABLE 19.—COMPARISON OF ESTIMATED TOTAL MILITARY EXPENDITURES AND ANNOUNCED BUDGETS

[In billions of yuan]

Year	Announced budget	Estimated total	Approximate difference
1977	14.9	[Deleted.]	
1978	16.8		
1979	20.2		

2. Gross national product

The annual growth of China's gross national product (GNP) has been a respectable 6–7 percent throughout the nation's 30 year history of Communist control. Billed as the world's largest underdeveloped country, China has a population of approximately 1 billion with a per capita GNP of about $460 per year. Over the next few years, we expect the growth of GNP to fall slightly to about 5 percent annually. In addition, the sources of growth will be somewhat different as agricultural growth improves to about 4–5 percent per year and industrial growth slows to around 6–7 percent per year. Although foreign equipment and technology will continue to be imported into China, problems of absorption will be overcome only gradually and with difficulty. With the exception of imported fertilizer plants, foreign technology is unlikely to have much of an impact on GNP growth over the next few years.

TABLE 20.—*China's GNP*

Years:	*Gross national product (Billions of U.S. dollars)*
1970	263
1971	281
1972	294
1973	332
1974	344
1975	368
1976	368
1977	398
1978	444
1979	468

3. Foreign trade

As China continues to emerge from years of international isolation, the importance of foreign trade is rapidly increasing. Total trade during the decade of the 1970s leaped dramatically from only $4.3 billion in 1970 to $28.2 billion in 1979, for an average annual growth rate of 23 percent. Trade with non-communist countries dominates the picture accounting for 87 percent of the 1979 total. Japan is China's largest trading partner, accounting for approximately one-fourth of Beijing's total. Ranking second to Japan in terms of total turnover is Western Europe, followed by Hong Kong and the United States.

Last year was also a period of readjustment for the trade sector. Following initial confusion in early-1979, there was an immediate pullback in orders for future imports, to the point of upsetting relations with foreign suppliers. The Chinese began a three-part program to insure that they would be able to pay for their imports. Large credits were arranged to draw out repayments. Export-oriented light industry was given a higher priority, and a new law allowing direct foreign investment in China was enacted. Although a number of administrative changes were made to expedite investment, only a few major contracts for whole plants were concluded in 1979. Under the new economic readjustment program, priorities are now being reestablished to determine more precisely what types of facilities will be imported. Although priorities have apparently been allocated by sector, a great deal of uncertainty continues to surround individual projects. A significant increase in whole plant purchases can be expected once these problems are resolved.

TABLE 21.—*Foreign trade*

Years:	*(Billions of U.S. dollars)*
1970	4.3
1971	4.8
1972	6.0
1973	10.3
1974	14.1
1975	14.6
1976	13.3
1977	15.0
1978	21.1
1979	28.2

V. Chinese External Affairs

A. GOALS

Beijing's foreign policy is predicated upon the determination to transform China into an internationally powerful socialist state, and elevate its political influence to the forefront of the world's nations. Beijing believes that it should be the preeminent power in Asia and the spokesman for the world's developing countries. The Chinese perceive the Soviet Union as the major obstacle to these long-range goals, and view Soviet encirclement as their main national security threat. Thus, Beijing's pervading concern has been to gain international support to limit Soviet penetration and influence throughout the world. Over the past three years, China's leaders have traveled worldwide to promote this strategy. They have also made blatant efforts to undermine Soviet relations with the countries of Eastern Europe and encourage their independent tendencies.

The Chinese realize that they can do little to counter the substantial amounts of military and economic aid provided to developing nations by Moscow, but have taken advantage of several events that enhance their prestige by increasing their military and political visability.

One of the most significant of these events was the first successful launching of an intercontinental ballistic missile to a point outside of China. Coinciding with the May visit of Chairman Hua Guofeng to Japan, another first, the launch was described as part of China's continuing effort to develop a small amount of strategic arms in order to break the nuclear monopoly of the superpowers. During his visit to Japan, Hua criticized Soviet hegemonistic activities and implied that China would favor an increase in Japan's defense spending.

The Soviet invasion of Afghanistan has provided Beijing with an ongoing opportunity to castigate Moscow's hegemonistic activities. While Moscow's action poses only an indirect military threat to China, Beijing views the application of the Brezhnev doctrine outside of the Soviet aligned nations as an indication that Moscow has begun pursuit of a more aggressive foreign policy. According to Beijing, Moscow's goals are to establish a Soviet stranglehold on the Persian Gulf, control access to the Indian Ocean, and threaten access by the West and Japan to Middle East oil. Beijing believes that future developments in Afghanistan will have an important impact on the Soviet-U.S. rivalry and the world situation in the 1980s.

The Chinese have stated that Western indecisiveness in meeting Soviet challenges created the opportunity for Moscow's actions in Afghanistan. The failure of the West to deal firmly with the December 1978 Soviet-sponsored Vietnamese invasion of Kampuchea has been specifically linked to Moscow's takeover of Kabul. The use of Soviet surrogates in Southeast Asia is a matter of vital concern to China, and Beijing has continued to call for world denunciation of Vietnam's aggressive activities.

1. Economic aid

Chinese economic aid to the non-Communist developing countries is used in conjunction with military assistance and political activity and is a significant factor in the spread of Chinese influence in the recipient countries. Although China's bilateral aid programs to the developing countries account for less than 1 percent of the total economic assistance received by these countries, they are among the world's most successful. This aid is generally both technologically adaptable and relevant to the recipient's needs and therefore has been almost universally well received. In addition, because the Chinese usually limit their aid commitments to those areas where they have expertise, their own relatively limited capabilities have been utilized effectively.

The value of Chinese economic aid during the 1970s has varied as a result of both the domestic and international political atmosphere. In 1970, the ferment of the Cultural Revolution had ended and Beijing stripped its aid program of its earlier revolutionary content with a massive extention of $780 million in economic assistance, more than 10 times the previous annual record. This was the year that Beijing committed about $400 million to construct the Tan-Zam railroad in Africa, the first major aid project to the developing countries and one that Western Dunors had turned down. During the period 1971–1973, the Chinese maintained this high level assistance activity with yearly extensions of about $600 million. In 1974, however, economic aid again fell victim to domestic infighting, and new pledges plunged to a five-year low of less than $300 million. Continuing economic and political problems and the Tangshan earthquake cut deeply into Chinese economic development in 1976 and led to further reductions in offered assistance. Under China's current leadership, this has resulted in an aid program during the

last four years that has been considerably smaller than that of the earlier part of the decade. The geographic distribution of aid commitments indicates that Beijing's greatest area of interest has clearly been in Sub-Saharan Africa. Although there have been some annual fluctuations, no other region has received this same sustained emphasis. Only in the last two years, during the period of a much smaller program, have Asia and the Mid-East and North Africa received a relatively proportionate share of the new Chinese extensions.

TABLE 22.—*Chinese economic aid extended to developing countries, 1970–79*

Years:	*Value*
1970	781
1971	583
1972	607
1973	600
1974	282
1975	366
1976	150
1977	197
1978	219
1979	135

TABLE 23.—*Geographic distribution of Chinese economic aid extensions to developing countries, 1975–79*

Region	*Percent of total*
Sub-Saharan Africa:	
[Security deletion.]	[Security deletion.]
Asia:	
[Security deletion.]	Do.
Mid-East and North Africa:	
[Security deletion.]	Do.
Latin America:	
[Security deletion.]	Do.

2. Military assistance deliveries (1975–79)

Chinese arms exports to developing countries have declined since the end of 1975 and were less than $100 million in 1979. A drop in the number of foreign trainees in China and the number of Chinese military advisers abroad accompanied this decline.

Because China does not have the capability to produce sophisticated equipment such as the Soviet Union offers to developing countries, its ability to counter Soviet influence through military assistance is limited. Despite its limitations, in 1979 China began to use military sales as a source of foreign exchange, discontinuing its policy of granting free aid to selected nations. [Security deletion.] It is expected that future arms deliveries will remain modest.

TABLE 24.—CHINESE MILITARY DELIVERIES

[In millions of U.S. dollars]

	Developing countries	Asia and Pacific
1975	170	129
1976	136	102
1977	104	75
1978	143	89
1979	77	26

TABLE 25.—*Major Chinese items of equipment delivered, 1975–79*

Ground:	
Tanks and SP guns	835
Artillery pieces	1,120
Naval: Minor surface combatants	22
Air:	
Supersonic combat aircraft	214
Subsonic combat aircraft	49
Helicopters	35
Other aircraft	77

TABLE 26.—FOREIGN MILITARY TRAINEES IN CHINA

[Minimum estimate]

	1975	1976	1977	1978	1979
Asia and Pacific Latin America Middle East and North Africa Sub-Saharan Africa	[Deleted.]				
Third World total	815	527	447	125	NA

TABLE 27.—CHINESE MILITARY ADVISERS/TECHNICIANS ABROAD

[Minimum estimate]

	1975	1976	1977	1978	1979
Asia and Pacific Latin America Middle East and North Africa Sub-Saharan Africa	[Deleted.]				
Third World total	1,857	2,104	2,059	1,347	375

B. RELATIONS WITH REGIONAL NEIGHBORS

China's efforts to improve relations with her regional neighbors reflect both a concern for what is viewed as Soviet efforts to encircle and isolate China and China's goal of becoming the dominant power in Asia. Conversely, the regional neighbors have a very real concern for the potential of a dominant China in Asia. The divergent perceptions have complicated China's relations in the region.

1. Japan

Tokyo's interest in increasing trade coupled with the fear of an expanded Soviet presence in Asia overrode Japanese long-range concerns for China's potential strength, and led to the 1978 Sino-Japanese Peace and Friendship Treaty. Japan's willingness to conclude the Treaty over Moscow's objections was considered a victory for Beijing since the treaty contains the major points implicit in China's campaign to constrain Soviet influence in the Pacific. [Security deletion.]

Within the framework of their mutual concern about Soviet expansionism, the Chinese have been urging the Japanese to [security deletion].

During his May visit to Japan, Premier Hua Guofeng stated that it was understandable that nations increase their defense spending because of the tensions caused by Soviet aggression. At least in the near term, the Chinese will continue to support the United States-Japan defense alliance as a means to insure a U.S. presence in the Pacific to counter the Soviets.

2. Korea

While in Japan, Premier Hua stated positively that North Korea would not exploit the disorders in the South. This indicates prior North Korean-Chinese consultations and reaffirms China's resolve to maintain stability in the region. The Chinese have a Treaty of Friendship, Alliance, and Mutual Assistance with North Korea—as have the Soviets. Because of this, the potential for Soviet exploitation should the North Koreans take military action against the South is of great concern to the Chinese. They have adamantly supported the North's proposal for peaceful reunification. While Beijing has publicly supported a U.S. withdrawal from South Korea, it has [security deletion].

3. ASEAN

Chinese relations with the Association of Southeast Asian Nations (ASEAN)—Thailand, Malaysia, Singapore, the Philippines, and Indonesia—are complicated by ASEAN suspicions of Chinese objectives. Each of the countries has a significant Chinese population that traditionally has maintained close contacts with China and, in many cases, dominates key sectors of the country's economy. Except for Singapore, each of the ASEAN nations have had to contend at some time in the recent past with a Chinese-supported local insurgency movement.

It was not until 1974 and 1975 that China gained diplomatic representation in Malaysia, Thailand, and the Philippines; relations with Indonesia have been

suspended since 1967; and diplomatic representation has never been established with Singapore. The Chinese, however, view ASEAN as a regional key to thwarting Vietnam's aggressive designs in Indochina. The current Chinese leadership has established policies designed to allay historic suspicions and foster a united front against Soviet and Vietnamese hegemonism. These policies include denying the right of the ethnic Chinese to dual citizenship and encouraging them to accept citizenship in their resident country, and a downplaying of Chinese support to local insurgencies. Beijing cannot totally disavow support for local insurgent groups, as this would invite further Soviet inroads. ASEAN nations have been cautious in their acceptance of Chinese overtures and support for Chinese positions due to their fear of China's potential strength in the region and the reality of an expanding Soviet presence in Asia.

4. Indochina

Chinese policy in Southeast Asia is directed toward countering Vietnamese activity in Kampuchea and Laos and halting the spread of Soviet influence. The possibility of a "second lesson" similar to last year's Chinese incursion into Vietnam is sometimes mentioned, but seems remote at this time.

[Security deletion.] Forces in the immediate border area remain essentially defensively oriented.

China's support for Pol Pot's insurgency against Vietnam and Kampuchean Government forces has not wavered. China urges international recognition and support for Pol Pot's government but these efforts have received little support.

5. South Asia

The Soviet invasion of Afghanistan personified Chinese views of Soviet hegemonism. The Chinese have been the principal exponents of the view that Afghanistan is the Soviet stepping stone to the Indian Ocean and control of the vital Middle East oil.

Sino-Indian relations were improving but the two countries differ on the appropriate response to the Soviet invasion. China is calling for a united effort of concerned nations [security deletion].

Because of the convergence of interests in South Asia, China will continue activities that will parallel U.S. initiatives in the area. China will continue to support the Afghan guerrillas in an effort to keep the Soviets occupied within Afghanistan. [Security deletion.] China has criticized the stationing of foreign troops abroad and is unlikely to provide combat forces to Pakistan.

C. SINO-SOVIET BILATERAL RELATIONS

1. Political negotiations

Sino-Soviet bilateral relations continue to be influenced by deep rooted antagonisms growing out of ideological and territorial disputes, and ethnic animosities. The brief period of cooperation in the 1950's and 1960's that sprang from the 1950 Treaty of Friendship, Alliance, and Mutual Assistance appears to have been an anomaly. The Chinese officially abrogated the treaty last year, but proposed a series of talks to resolve outstanding issues and improve relations.

The Chinese negotiating team arrived in Moscow for preliminary talks on 23 September 1979. Agreements reached related to procedural matters; it was also agreed that the location of the talks would be alternately in Moscow and Beijing. An agenda could not be agreed upon. The Soviets refused to accept the Chinese demand that Vietnamese activities in Southeast Asia be included. At the last of five preliminary meetings, held on 12 October 1979, both sides agreed to terminate the preliminary meetings and begin official negotiations without an established agenda.

The first plenary session of the Sino-Soviets talks was held in Moscow on 17 October 1979. [Security deletion.] The Soviets, therefore, proposed a declaration of principles to govern future relations. Under this proposal, future dealings would be based on: the five principles of peaceful coexistence (mutual respect for sovereignty and territorial integrity, mutual nonaggression, noninterference in each other's internal affairs, equality, and mutual benefit); the non-use of military force; anti-hegemonism; bilateral consultations; mutual restraint; and expansion of cultural exchanges.

The Chinese countered that concrete action was necessary for a real improvement in relations. [Security deletion.]

The Chinese realized that Moscow would not accede to these demands but hoped that the forum provided by the negotiations would establish a new channel of communication and reduce tension. Through 22 November 1979, a total of

five plenary meetings were held in Moscow. Apparently, little of substance was accomplished and the next round of negotiations was scheduled to take place in Beijing in early-1980.

The negotiations, however, were brought to a halt by Beijing after Moscow's invasion of Afghanistan. Moscow's action resulted in a further deterioration in bilateral relations. China's leaders have reaffirmed their belief that it is contradictory to attempt to improve relations and reduce tensions while Moscow continues to take hegemonistic actions. Instead, the Chinese have assumed a more pointedly anti-Soviet stance in the international arena.

There appears to be little chance for an improvement in bilateral relations for the near term. Beijing continues to call for a complete withdrawal of Soviet forces from Afghanistan and will probably not return to the negotiating table until substantial force withdrawals have been verified.

While desiring improved state-to-state relations, the Soviets are not prepared to make significant concessions on territorial issues or arms reduction on the border. In the Soviet view, accommodation must be based on unilateral concessions from China and in light of Chinese initiatives and momentum on the international scene, this must appear as an unlikely prospect.

Although political talks are in abeyance, the sino-Soviet Border River Navigation Joint Commission continues its operations. The Commission regulates navigation along the north-eastern Sino-Soviet border. The Commission deals with such matters as placement and maintenance of navigation markers, dredging operations, transit notices and other activities necessary for safe, unimpeded shipping on the border rivers. Additionally, the Commission is used frequently by the two parties as a forum for discussing territorial disputes.

[Security deletion.]

2. Status of troop deployments

a. Chinese ground forces

The Chinese continue to deploy [security deletion].

As a result of the 1979 Sino-Vietnamese conflict, the Chinese conducted [security deletion].

b. Soviet ground forces

At present, there are [security deletion].

In addition to the conventional ground force divisions in the border area, there are several non-divisional combat units of some significance. [Security deletion.]

Since the early 1970's [security deletion].

3. Sino-Soviet trade: Economic aspects

Despite the very serious political difficulties between Beijing and Moscow, the two countries continue to maintain economic ties. Both nations feel that trade is still mutually advantageous. In 1979, bilateral trade was almost $510 million, a record for recent years. However, the increase is primarily the result of price changes, not a greater volume of trade. The trade balance was slightly in China's favor; its exports accounted for 53 percent of the total. Although this trade is not of major significance in monetary terms to either country, both China and the U.S.S.R. want each others products. [Security deletion].

The new trade agreement for 1980 was signed in early June with typical low key announcements by both Beijing and Moscow. Although no figures were provided for their 1980 planned trade there was an unconfirmed report that total turnover would [security deletion] than in 1979. It is expected that the 1980 plan will call for a trade balance between the two countries. It has also been reported that [security deletion] China. Considering the many uncertainties involved it is impossible to confidently predict future trade levels.

TABLE 28.—SINO-SOVIET TRADE, 1972-80

[In millions of U.S. dollars]

	Chinese exports	Chinese imports	Total
1972	134	121	255
1973	136	136	272
1974	139	143	282
1975	150	129	279
1976	178	238	416
1977	177	161	338
1978	257	242	499
1979	241	268	509
1980[1]			375

[1] Preliminary.

D. CHINA'S MOTIVATION FOR EXPANDING RELATIONS WITH THE WEST

China's policy of expanding relations with the U.S. and the West are motivated by a mutual concern to counterbalance the U.S.S.R. and by China's quest for the technology and trading partners needed to support modernization goals.

In Beijing's estimation, improved relations are of immense value internationally as an indication of China's importance in global affairs. Consequently, the Chinese are vocal supporters of NATO and evidence concern for political unity and stability in Western Europe. They constantly present their anti-Soviet views and urge European NATO members to build up their military capabilities and assume a greater responsibility for the validity of the alliance.

China's more aggressive and stridently anti-Soviet foreign policy, its economic and military modernization objectives, the prospects for closer cooperation with the West, and the willingness of the U.S. to discard its even-handed approach to Moscow and Beijing and consider the sale of military support equipment to China have increased Soviet paranoia about Chinese capabilities and intentions.

The determination by China's leadership to strengthen the economic infrastructure and upgrade military capabilities has resulted in a reversal of Beijing's policy of self reliance. The need to incorporate Western technological aid, managerial methods, and incentive systems has provided the impetus to explore ways to acquire foreign assistance. Beijing probably views the West as being ready to engage in the joint ventures necessary to exploit the natural resources China wishes to use to raise needed foreign exchange.

Expanded relations have given China access to modern military equipment and technology, and Western warfare strategy. Over the past few years, the numerous Chinese military delegations to Western Europe have studied a wide range of weapon systems and technology. However, few sales have been realized due to Beijing's wish to purchase relatively advanced technology but few pieces of hardware.

In contrast to similar visits to Europe, the two Chinese military delegations that visited the U.S. in May [security deletion].

VI. Chinese Force Developments

A. OVERVIEW

1. Ground forces

Army force levels have [security deletion]. However, it became clear following the 1969 Sino-Soviet border clashes that the Chinese had created the world's largest army only as an interim deterrent to a Soviet attack. Their long-range force development goal is the qualitative improvement of Army capabilities. This process has been a gradual and modest one, given overall resource constraints and the lack of technological expertise in the development and production of advanced military hardware.

These constraints have forced the Chinese Army to concentrate on enhancing force capabilities, primarily through reliance on existing weapons systems. For the most part, these systems are Chinese variants of Soviet-designed weapons and incorporate the technology of the 1950's.

[Security deletion.]

2. Air force

China's Air Force continues to rely on large numbers of older model aircraft for offensive, defensive, and support operations.

All the military aircraft produced are copies of old Soviet planes or are based on old Soviet technology. Most of the output continues to consist of copies of the old Soviet Mig–19; small numbers of Mig–21s and two old Soviet-designed bombers are also produced. Of the more than [security deletion]. Although production programs on the Soviet-designed [security deletion]. The Chinese have modified many of these aircraft, attempting to extract maximum performance and combat capability from them. Advances in aircraft avionic systems and air-delivered ordnance have lagged behind airframe development. For example, it is believed that only about [security deletion] percent of China's interceptor force is capable of performing all-weather intercept missions. China's tactical aircraft lack modern navigation/bombing systems for precision delivery of ordnance.

New information, much of it directly from Chinese sources, has been available on the deployment and development of air-to-air missiles (AAM). A recent Chinese periodical contained a photo of an F–7/Fishbed fighter with a missile similar to the Soviet Atoll, a first-generation missile based on the U.S. Sidewinder. A recent report put production of this missile, designated the [security deletion]. Widespread availability of AAMs will significantly upgrade China's air defense capability.

In the tactical arena, it is believed that the Chinese have air-to-surface missiles under active development. Strong evidence indicates that the Chinese recently received AS–5/Kelt [security deletion]. Although an older system, it would add considerably to China's offensive air capability, particularly if deployed in the anti-ship role. [Security deletion.] Although no details are known of this system's overall capabilities [security deletion].

Besides the acquisition of new equipment, the Chinese have initiated other efforts to improve their air force's overall warfighting capabilities. Several recent reports indicate that the numbers of annual flying hours for combat crew training has been increased to 120 hours, a sharp increase over the previously estimated 60–80 hours. The increase is probably only being applied to selected units right now, so that the concept can be tested and validated before a force-wide program is implemented.

As a result of China's 1979 incursion into Vietnam [security deletion].

However, once fully implemented, this new concept will increase China's capability to conduct sustained air combat.

The Chinese have shown a great deal of interest lately in U.S. and other Western [security deletion]. Such changes, however, will be approached cautiously and selectively and it will probably be at least [security deletion]. Over the very long term, however, such a conversion would dramatically improve the air force's combat capability.

3. Naval forces

The capabilities and limitations of China's Navy are reflected in its defensive orientation. Though lacking the sophisticated weapons and equipment of more modern navies, Chinese forces, with their sheer numbers, could repulse or make exceedingly costly any seaborne attack against the mainland. The doctrine appears to be that of defense in depth utilizing the tactic of overlapping perimeters. The operational capabilities of the land based and seaborne naval assets complement one another and the result is a fully integrated and effective coastal defense system.

Chinese naval units (both land based and seaborne) are organized by type and location to operate in one or more of the traditional naval warfare roles. From a defensive perspective, the Chinese Navy possesses a good capability in anti-surface ship warfare but a very limited capability in antiair, antisubmarine, and mine warfare. Offensively, the Chinese Navy has serious limitations across the entire naval warfare spectrum.

After nearly two decades of building an essentially coastal defense navy consisting primarily of small combatants, many of which are cruise missile equipped, China is beginning to concentrate its efforts on [security deletion]. We do expect that during the coming decade, significant qualitative improvements will be made in Chinese naval shipbuilding.

During the past year, the Chinese Navy achieved a number of force-wide quantitative improvements but the most significant gains were made qualitatively. The most notable of these was the successful 10,000-mile round trip voyage of an 18-ship task force (transiting in two task groups) to a down range open ocean impact area near Fiji in support of China's recent full-range ICBM tests. This event was particularly important for China. It marked the first time in China's naval history that it successfully combined the numerous and somewhat complex elements needed to plan and execute a fully self-supporting and reasonably large naval operation at an extended distance from the coast. Also notable were the adaptability and skill of the staff planners, commanders, and crews who executed the task with a minimum of pre-mission training or experience. For the first time, underway replenishment ships, equipment, and techniques were operationally employed. In addition, helicopters were embarked and operationally integrated for the first time.

While the success of this operation provides the Navy with the basis for new and increased potential, China can not yet be credited with an "open ocean" combat capability. The continuing obsolescence of China's naval weapons and sensors and the vulnerability of its ships will restrict China's ability to conduct offensive warfare on the high seas and to project its naval power region-wide.

B. ICBM HIGHLIGHTS

China successfully conducted a broad ocean launch of the CSS–X–4 ICBM, a missile capable of reaching the continental U.S., for the first time in May. The launch area for this test program was the [security deletion]. The first CSS–X–4 ICBM flight was evidently successfully launched into the ocean impact area. The second, some four days later, fell short of the impact area by over 800nm. This partial failure was probably the reason the Chinese terminated subsequent launches in the series. Because of the number of successful CSS–X–4 test firings, this latest upset should not affect the deployment of this missile system.

This large ICBM is also used by the Chinese for space launches (CSL–2) and ballistic missile tests. [Security deletion.]

[Security deletion] the Chinese will elevate their nuclear missile capability from a regional to a world nuclear power.

[Security deletion.]

China's program to insure the survivability of its strategic missile forces is the key to its nuclear deterrent strategy. China's missile force is small and technically inferior to those of the United States and the U.S.S.R.

However, China has a credible retaliatory capability, including medium, intermediate, and limited-range intercontinental ballistic missiles that can hit targets in many parts of the U.S.S.R. and throughout Asia.

[Security deletion.]

C. SUBMARINE LAUNCHED BALLISTIC MISSILE

[Security deletion.]

VII. Conclusions

This examination of military-related developments in the Soviet Union and China reflects the impact of internal, external, and military affairs on the international initiatives of these major Communist countries.

Developments in the realm of Soviet policy and programs in recent years attest to growing success in projecting the U.S.S.R.'s power and influence among developing countries. The basis of this continuing achievement is a resource allocation policy that has supported the effective use of Soviet military capabilities, directly and indirectly, in conjunction with political and economic programs. Steady improvements in the U.S.S.R.'s key military systems and recent expansion ofmilitary industrial facilities in such areas as missiles, tanks, aircraft, and warships indicate continuing, and perhaps increasing, Soviet emphasis upon the employment of military capabilities with other power projection instruments to achieve expansionist goals.

China's leaders are committed to the nation's development and will take the measures necessary to ensure the continuity of current policies. Although earlier modernization goals have been scaled down, Beijing is in the process of establishing the basic foundation for a strong and well-balanced future economic development. China will continue efforts to increase its international political influence and gain international support to limit Soviet penetration and influence. Sino-Soviet bilateral relations will remain tense. China will be increasingly motivated to expand relations with the West because of mutual concerns to stop Soviet aggression, and China's quest for trading partners and technological assistance for industrial and military development. Although military modernization remains a relatively low priority, the long-range goal is the qualitative improvement of PLA capabilities.

AFGHANISTAN

Senator PROXMIRE. General, at the beginning of your prepared statement you said:

I'd like to stress at the outset that Soviet activity that we see in Afghanistan is a direct outgrowth of policies that the Soviets have followed for decades, rather than shocking discontinuity.

Why didn't the President of the United States manage to understand that? He expressed amazement that the Soviets went into Afghanistan. It seems to me it was about as predictable as that the

sun will rise tomorrow. Here is a country which has been deeply concerned about its defense, and a country which has always insisted on doing everything it could to maintain countries on its perimeter, that were either dominated by it or friendly. They showed that in Czechoslovakia, Hungary, and when the Afghanistan situation began to get unstable, it looked as if there might be some independence in Afghanistan, no longer under the domination of the Soviet Union, it seemed to be just as about as predictable as anything could be that they would move in and try to maintain a pro-Soviet—dominated by Soviet—Afghanistan Government.

General TIGHE. I would suggest that the uniqueness of the invasion, of course, was that it was the first outside the Warsaw Pact area. I would say that it was a surprise to many in the political structure throughout the world.

Senator PROXMIRE. It didn't surprise George Kennan, who's our outstanding expert on Russia and has been for 40 years.

General TIGHE. Going outside the Pact was the only thing that was particularly unique about the whole operation.

Senator PROXMIRE. I think you're absolutely correct that it was the kind of thing we might have expected. Under the circumstances, it shouldn't surprise us at all.

SOVIET GLOBAL INFLUENCE

Now you said in your summary that Soviet increased military capabilities has been one of the decisive factors in altering world political circumstances in their favor. And in our longer prepared statement you say that the U.S.S.R. has increased its ability to influence events throughout the world and that in the past decade its successes in extending its influence through military and economic aid have outnumbered its failures. I wonder, if that's the case, wouldn't it be possible to come to the opposite conclusion if one looks at the long-term failures of Soviet efforts to influence and gain control over developing countries?

I have in mind the Soviet loss of China, which, of course, is a major, major setback, the disaffection of Algeria, the fact that Egypt expelled the Soviets, kicked them out, after receiving billions in military aid, the independent role pursued by Libya, despite the enormous amounts of Soviet arms that it purchases, the growing independence of Syria and Iraq, the independence of India, and the total loss of Soviet influence in Indonesia.

Isn't it also true the Soviet military and economic assistance to developing countries has been no guarantee in the past that any of them would remain permanently within the Soviet orbit or even under its influence?

General TIGHE. From a historical standpoint, you are describing a much better and more balanced sample of what has occurred. I'm speaking of the present, and I'm also speaking of a departure from failure that started in about 1974 with Angola, where the Soviets obviously took a new tack by the rapid insertion of military power into a situation that offered the opportunities and has been successful since. I've seen the results of failure in Indonesia. Certainly, you've listed the greatest one, China. I would suggest that we may find that

none of the Soviet efforts have been in vain, but they certainly don't make good friends anywhere or leave good friends anywhere.

Senator PROXMIRE. Well, let me approach it a little differently. If I can quote your prepared statement, you say, and I quote: "The U.S.S.R. has increased its ability to influence events throughout the world."

General TIGHE. Yes.

Senator PROXMIRE. It seems to me to have been very carefully worded to distinguish the ability to influence events from the actual influencing of events. You don't say that they have influenced events. Am I correct that you intended to make this distinction or are you saying that there has been a more or less inexorable increase in the spread of Soviet influence around the world?

General TIGHE. I think, Senator Proxmire, that they have managed to increase their capability. Let me describe that.

Senator PROXMIRE. Increase their capability but not necessarily increase their effectiveness.

General TIGHE. In the use of that ability, they are, therefore, much more successful in recent years in expanding their influence around the world.

Senator PROXMIRE. Let me pursue that a little further then. Isn't it correct that there was a time when Western experts viewed communism as a monolith, when the possibility of a rift between the Soviet Union and China was discounted, and when all Communist countries were lumped together and considered simply part of the Soviet camp?

General TIGHE. There's no doubt about that at all.

Senator PROXMIRE. Isn't it possible that some people may be falling into the same mental trap today by viewing Communist countries, such as Cuba and South Vietnam as proxies of the Soviet Union?

General TIGHE. It could be, but we recognize that a proxy doesn't always have to remain a proxy. These countries could change very dramatically, and I think most analysts would acknowledge the ability of those countries to go their independent ways, if they chose to do so.

ANGOLA AND ETHIOPIA

Senator PROXMIRE. Now in your summary you referred to Cuba's intervention in Angola and Ethiopia as having lately degenerated into wars of attrition. Would you elaborate on that and give us some more details about each of these two areas and why you conclude that wars of attrition are taking place in Angola and Ethiopia?

General TIGHE. Both in Ethiopia and Angola, we see that mere military ownership of the infrastructure, that is, the major towns, villages, and the roads has not brought peace to the land. The same enemies that were battling, for example, in Eritrea 3 years ago, are still battling in Eritrea. The independence movement there is very strong. The guerrilla movement in the Ogaden still goes on, despite the fact that the Ogaden was supposed to have been pacified 3 years ago.

In Angola, Cuban forces are still running into direct conflict with tribal elements, and there are so many diversified groups throughout that country that you can describe the situation as military occupation without real success in terms of pacification.

Senator PROXMIRE. Are they getting bogged down there?

General TIGHE. Yes, sir, and it's going to take continuing investment by the Soviet Union and, if not their surrogate forces, then some substitute for them.

MILITARY BURDEN ON THE ECONOMY

Senator PROXMIRE. Now you've testified about the continued increase in Soviet defense spending and the expansion of its forces. As the Joint Economic Committee, we are concerned in our responsibility and some extent expertise—whatever expertise we have on this committee has been largely in the economic area.

You've described the ongoing slowdown in Soviet economic growth and you project a continued slowdown and continued economic problems, including severe constriction bottlenecks and consumer disaffection and dissatisfaction. Would you agree that the Soviets by emphasizing military spending are failing to adequately invest in the domestic economy?

General TIGHE. Yes, sir.

Senator PROXMIRE. And that it's failing to solve its serious economic problems? In effect, it is draining out the domestic economy in order to support its military program and that by doing so, it is allowing the economy to continue its downward trend?

General TIGHE. The impact on the economy is very obvious with that percentage of investment going to the Ministry of Defense. I would suggest, in the Soviet view, the future stability of the country probably requires that military glue hold society together.

Senator PROXMIRE. You see what I'm getting at. I think we all must recognize that the military strength of a country these days depends very heavily on its economic strength, its economic viability, its economic vitality.

In your view, how long can these trends for the economy suffer because of the overwhelming emphasis on the military? How long can these trends continue before severe strains show in the Soviet economy and the fact that the strain is already showing in such areas as construction bottlenecks and apparent increases in consumer dissatisfaction?

General TIGHE. Well, Senator Proxmire, I can recall back in the early 1960's when the U.S. intelligence community said that the Soviets couldn't possibly afford the defensive system they were planning, yet they did. We watched for all these little signs that showed sufficient disaffection to really cause the Soviets great concern. For example, the evidence of strikes or the evidence of significant screaming in the press about food distribution and other problems.

Senator PROXMIRE. Well, the press they control.

General TIGHE. But, none of it ever seems to get to a level that can cause the hierarchy any great concern. One bit of evidence of this is that the limited polls that we've been able to review of the popularity among Soviet citizens of the involvement in Afghanistan show an overwhelming Soviet sentiment for what the Soviets have done there, or as much as they know of what they've done there.

Senator PROXMIRE. They may feel that they're in control and they may be, but the fact is their growth which was 6 percent is down to 4,

even projected to go to 2. That indicates that they are suffering economic problems that are going to have an effect on their overall military potential.

General TIGHE. I would suggest that the continuing rise in the military share of gross national product, despite their economic problems, must come to a halt one day. It's in large conventional programs that they've spent most of their money; for example, tactical aircraft. [Security deletion.]

OIL PRODUCTION

Senator PROXMIRE. One of the most controversial subjects in assessments of the Soviet economy concerns the question of whether it's going to suffer a decline in oil production in the next few years. Will you elaborate somewhat on the DIA's view of this matter and what the latest figures show with respect to oil production in 1979, 1980, and the next few years. Also, I would like you to explain the basis for your conclusion why there will be a leveling off of the rate of increased production, and there will be no absolute decline. How do you know that?

General TIGHE. I would like my counsel over here to help me out, if I could, Senator Proxmire. Mr. Doe, will you please.

Mr. DOE. Certainly. We have looked at all of the fields that the Soviets are currently exploiting and all those areas in which they are currently drilling in their attempt to find new sources of oil. We agree with virtually everyone who has analyzed their fuel situation; the older fields are definitely in slow decline. The question is, can they replace those sources of fuel? Our analysis leads us to believe that they can. They have been finding new sources, principally in western Siberia. This is further evidenced by the fact that they are building a very large pipeline that will run from West Siberia to the European section of the U.S.S.R., where most of their consumption occurs.

General TIGHE. Excuse me just a minute. There is a new line from one of those new fields over 2,000 miles long. What's the name of that?

Mr. DOE. Surgut-Polotsk.

General TIGHE. And the length of the line?

Mr. DOE. It's over 2,000 miles long, and it is of large diameter pipe. They plan on moving a lot of additional oil there from western Siberia to the western part of the Soviet Union directly, using that pipeline, and they keep building more pipelines. They must believe, and our evidence shows that it's quite probable, that there are more reserves there to be exploited.

GRAIN EMBARGO

Senator PROXMIRE. My time is up. I'll get back. Senator Jepsen.

Senator JEPSEN. Thank you. General, in your prepared statement you point out that the U.S. embargos and sanctions on exports has caused Moscow to claim that it would never consider the United States to be a reliable trade partner. My question is, do we care? Would you elaborate on that?

General TIGHE. You asked me if they care?

Senator JEPSEN. Do we care?

General TIGHE. I think that question is a little outside my purview.

Senator JEPSEN. Well, with regard to sanctions, what measures have the Soviets taken to avoid the potential effects of grain embargo? You indicated in your prepared statement earlier that it had very little impact on them. They found additional sources and so on. Is that specifically with the grain embargo that it didn't have any impact whatsoever?

General TIGHE. I stated earlier that it had a lowered effect of about 3 percent. But I think Mr. Collins or Frank Doe could address that question.

Mr. COLLINS. Frank Doe is the expert on wheat.

Mr. DOE. We observed that the Soviets very quickly replaced most of the grain that we embargoed. This came from other Western sources, mainly Argentina, although [security deletion] did export some wheat after our embargo. They will have a shortfall of between [security deletion] million tons.

That is out of a total supply of something on the order of 200 million tons and it will not appreciably affect their economic growth rate.

Senator JEPSEN. You would characterize the effect of the grain embargo then on the Soviet economy on the Soviet Union generally as having a very minor effect, negligible?

Mr. DOE. Yes, sir.

Senator JEPSEN. A drop in the bucket?

General TIGHE. Here you're talking about a measurable economic impact, not the psychological impact. It's had a gross psychological impact on the country.

Senator JEPSEN. Would you comment on that?

General TIGHE. Yes. I think all the Western attacks on Soviet activity, including the Olympic games boycott, have been a very heavy psychological blow to the Soviets. These actions question the legitimacy of the Soviet Union as a nation. I think they have a profound effect, these psychological, personal attacks on the people themselves.

Senator JEPSEN. That confuses me, in that in earlier statements you said, for example, that generally the people of the Soviet Union, I believe I heard this, wholeheartedly support the Afghanistan invasion. They've replaced their sources of supplies, both of the grain and the technology, elsewhere. Who's so psychologically upset with this?

General TIGHE. Whether or not the Soviets overcome being upset is the question, Senator Jepsen. They seem able to survive, regardless of their concern for their world image.

Senator JEPSEN. I'm trying to appreciate what you're saying. The thread woven in the fabric of what we have isn't consistent. Who is psychologically upset with what we're doing?

General TIGHE. [Security deletion.] They are seriously affected by the questioning of the legitimacy of Soviet actions, and in the process, the legitimacy of the Soviet revolution. One example is questioning whether Moscow is a fit place to hold the Olympics. So this has a very profound effect on the nation's image as a big, stalwart leader, fomenting revolutions all over the world.

Now the fact that they overcome those attacks and ignore them publicly doesn't make the psychological impact any less.

Mr. COLLINS. Could I perhaps clarify the grain situation, Senator Jepsen? Our prepared statement states "The Soviets agreed to buy 8 million tons of grain annually under the long-term program. This was to fulfill Chairman Brezhnev's commitment to provide a better diet for the Soviet citizen." The concern in the Soviet citizenry is with the lack of adequate supplies of meat, and the lack of diversity in the diet. They replaced most of the shortfall, but they're going to fall short by about [security deletion] million tons, and most of that was feed grains for livestock.

Also, we're trying to convey the message that the tight food supply and the kinds of things that add variety to the diet and correspond to consumer requirements are going to continue to be in short supply. There's going to be no overall shortage of food to feed the population, but there will be a continued failure to meet the Brezhnev commitment to a more diversified, more palatable diet for the Soviet citizen.

Senator JEPSEN. That was the word that was put out with this. They wouldn't be able to continue to expand their red meat program, and so, that was the effect, you know. Where I come from, we're having a hard time understanding all that. Not that we're not patriotic, but we found out that the things that are presented are not exactly so with regard to that. Has the Soviet Union signed any grain agreements of significant duration within the last 6 months with any other country, possibly indicating a long-term shift in markets?

Mr. DOE. There have been no major long-term grain agreements, but they have negotiated some short- and intermediate-term agreements.

Senator JEPSEN. With whom?

Mr. DOE. With Argentina, with Australia, and with Canada. [Security deletion.]

Senator JEPSEN. Well now, in the intelligence world, did our relaxing or changing or altering of our sanctions to the point which they did last week, announced anyway, that the Soviets now could do business with American grain companies, as long as the American grain companies were doing business with everybody, except American grain—what psychological impact did that have that would devastate the Soviet Union?

Mr. DOE. I can't address that.

Mr. COLLINS. I don't believe we have a measure of the psychological impact, other than the fact that their discontent with respect to the variety of diet and the availability of meats and so forth, is going to continue. The leadership is going to continue to fail to meet those expectations.

General TIGHE. One measure of that discontent is the recent strike at the Togliatti truck plant, which was undertaken in direct protest against the variety of food that is available.

SOVIET MILITARY PAY

Senator JEPSEN. There's a low Soviet military pay—shifting gears here for a minute—there's low Soviet military pay cited in your prepared statement, meaning that the overall Soviet military might is far underestimated. That is, is the military might much greater than that indicated by the ruble expenditures for defense?

General TIGHE. I'm not sure I understand.

Senator JEPSEN. Let me put it another way. We've been hearing comparisons being made, and we're going to hear a lot more—being made between the gross national product going into Russian military spending versus U.S. military spending; the fact that we're spending x billions of dollars, they're spending x billions of dollars. But now, in analyzing all their spending, you know, the greater proportion of our expenditures go for personnel pay.

That's the point I'm making. By comparison, what do the Soviet expenses for pay go to?

General TIGHE. It's about 50–50. We hold that the Soviets spend about 50 percent for procurement.

Mr. DOE. Yes; in the ruble estimate. Investment is about half of total Soviet military spending. However, personnel food, clothing, pay, and medical care expenditures are only about 15 percent. In large part this is because, as you mentioned, they have a conscript Armed Forces receiving very low pay.

Senator JEPSEN. May I pursue that? Fifteen percent; that's the figure I'm looking for. What's our figure for the same things?

Mr. DOE. In the estimate in which we compare U.S.S.R. and U.S. dollar costs for the military, it's about one-third for personnel. This excludes veterans' benefits and retirement pay, which are major items in the total U.S. Department of Defense system.

Senator JEPSEN. Now, let me repeat again. I want, in your opinion, the exact comparison. Fifteen percent is what, you say, about the Soviets expend for military pay and personnel benefits, this type of thing. Is that correct?

Mr. DOE. That figure includes personnel pay, food, clothing, medical care, and personal transportation.

Senator JEPSEN. OK, then. What is a like figure for us?

Mr. DOE. The nearly one-third is a comparable figure using that same definition.

Senator JEPSEN. So, a little over twice as much.

Mr. DOE. Yes.

Senator JEPSEN. Thank you.

Senator PROXMIRE. Congressman Wylie.

Representative WYLIE. Thank you, Mr. Chairman.

U.S. SALES OF OIL DRILLING EQUIPMENT

You talked in terms of the grain embargo here with Senator Jepsen, and we have an Olympic boycott on; we're protesting the invasion of Afghanistan through that sort of thing. Yet I saw recently in Time magazine that we sold $5 million in oil-drilling equipment to the Soviet Union in March and April. I just wonder where our priorities are.

You indicated, as I feel, that oil may be a weak link in their chain. Now, this may not be in your domain; and in all fairness, I might say that I was at the White House recently, and I asked the President this same question. How do we justify selling $5 million in oil-drilling equipment to the Soviet Union when we're saying that we're not going to sell them grain and we're going to boycott the Olympics? It would seem to me as if that's setting our priorities in the wrong fashion.

General TIGHE. Those who have discussed this with me claim that the wisest thing we can do is to have the Soviets expending Soviet oil, putting additional oil into the world market, with whatever help they might need from us in the process.

Representative WYLIE. That was in substance the President's answer. First of all, he said it was not sophisticated oil-drilling equipment; they could buy it from someplace else, I'm sure. But at the same time, he said that they had rationalized—I'm not sure you were in on this decision—that it was better for the Soviets to burn up their own oil than to go into the world market and compete with us for OPEC oil. Or worse yet, go into the Persian Gulf and get their oil, which would cut off our supply.

PERSIAN GULF

What is the danger, do you think, of the Soviets going into the Persian Gulf? How badly are they doing in Afghanistan?

General TIGHE. They certainly aren't going to let their situation in Afghanistan keep them from going someplace they see an opportunity. I think they could probably handle [security deletion].

The question in their minds surely is: do they have to go into Iran or the Persian Gulf, or is it falling into their hands? I think probably they see things going rather favorably right now, with all the chaos in Iran.

Representative WYLIE. With all the chaos involved?

General TIGHE. The chaos in Iran is of a type that tends to aid the installation of Communists or the advance of Communist governments. The Soviets probably feel they don't have to go into Iran militarily.

Representative WYLIE. So they've analyzed it. And do you think that might be accurate; that the situation in Iran is deteriorating so rapidly that one of these days it will fall into their lap like a ripe plum?

General TIGHE. [Security deletion.]

Representative WYLIE. You said that the Soviets have been on the border of Afghanistan for a long time. In asnwer to Senator Proxmire's question, wasn't that predictable? If it was predictable, why didn't the Commander in Chief—either one—know it, which I assume he did, or attempt to do something about it?

How serious would you say that the Soviet invasion of Afghanistan, or the situation in the Mideast, is to our oil supply? Maybe you're not able to answer that.

General TIGHE. How serious is the threat to our oil supply?

Representative WYLIE. How serious is the threat to our oil supply?

General TIGHE. Of course, the proximity of the Soviet Union and its capability for moving military forces even farther south is, in my judgment, not very debatable. They've got what it takes, with the short supply lines, to go. They've taken the opprobium of the world for their invasion of Afghanistan, so they can chalk that up and take on a few more incursions without any further opprobium, I would suggest.

Their big question surely must be, always, can they risk facing the overall strength of the United States—which I firmly believe they feel is greater than their own.

U.S. as a Reliable Trading Partner

Representative Wylie. I have that feeling, too. I hope we're right.

That's in line with Senator Jepsen's question. I think that might have been the thrust of his question; that they have a complaint that the United States embargos and sanctions. It gives them thought as to whether the United States is a reliable trading partner. I'm not sure that even enters into their thinking on military affairs. That's just an observation.

Senator Jepsen. Would the gentleman yield?

Representative Wylie. Yes, I'd be happy to yield.

Senator Jepsen. Of course, the credibility of a reliable trading partner—I think an embargo, which we haven't heard much about—but the embargo, that effect of the embargo has been just absolutely disastrous. Because it is reinforcing something that other countries are very nervous about—that is, some of the people that I have personally talked to about our particular foreign policy in the last few years.

Anyway, that is: They hesitate to enter into any economic commitments with us, because when they do, they want to know it's going to be delivered. That's why Portillo in Mexico doesn't buy his pumps from us; because he wants, when his line is built, to have those pumps delivered to pump oil. But he's not going to do it, because he doesn't know what this country is going to do by making judgments as to how he conducts his personal, political, and human rights affairs and many other things. And so they don't buy them from us.

Representative Wylie. I think that may be more of an observation, General, than a question.

Soviet Public Opinion

I was in the Soviet Union in 1971. We were hearing at that time that the situation was drab. We were hearing that the people there were very unhappy with the high priority of the Soviet policymakers on defense interests, which do receive preferential treatment by all standards in resource allocations; and they are, in effect, starving other sectors of their economy. I think you could see it then, and it's still true today.

What about the people? Are they unhappy? What about housing facilities? What about business development, agriculture and resource development? Don't they need that, as a certain broad base, in the final overall analysis? This is the Joint Economic Committee.

General Tighe. My own view of how the ordinary Soviet citizen views his lot is that he sees things better every year than the previous year. He sees himself, in Moscow, getting into an apartment. It may only house 6 people instead of 40, as in previous years within his memory. He sees an ability, regardless of the price, to buy a pair of blue jeans and a western record as a symbol of great freedom. And, even if in the black market, he has to buy a car, he can go and get one.

There is also the fact that, in my opinion, they're totally resigned to conscription. We note some corruption in the fact that some of the more powerful people's sons don't serve as conscripts, but pretty generally all mothers' sons go off. I would suggest that by and large,

the Soviet citizen sees things better every year, and has very little exposure to what it might be.

Representative WYLIE. So we can't depend on their consumer unhappiness to aid us in the cause?

General TIGHE. Only when hunger is involved.

DEFENSE SPENDING IN JAPAN AND WEST EUROPE

Representative WYLIE. Now also from an economic standpoint, just for observation, the United States spends 5 percent of its gross national product for national defense. Japan spends about 1 percent or less. West Germany's less; France is less. Why shouldn't they take up more of the slack?

General TIGHE. Well, of course, I think we managed to make sure that they had a constitution which said that they shouldn't be spending very much, except on those things that are necessary to defend themselves. Defensive systems aren't necessarily the highest-cost weapons systems.

Representative WYLIE. Could that policy be changed? Maybe it was all right at the time.

General TIGHE. Sir, it is changing. Public perceptions of need are changing. Whether it is going to be in the near term or not, Japan is changing that view. Why other countries can or cannot, will or will not, of course, I'm sure you're much better informed than I. On why they don't, and why they shouldn't, and why they will not, I can't comment.

Mr. COLLINS. I think one might add a word of caution with respect to some of the Western European countries. They are arguing that they practice conscription, which we do not, and that they pay their armed forces, their conscripts, far less than we do; and that if one balanced out their effort, costed in U.S. terms, it would be significantly higher than we attribute to them.

So the argument is a little bit complex from their point of view.

Representative WYLIE. But we need to get more help from them on that. All right.

CHINA'S FOREIGN ASSISTANCE PROGRAM

One last question; my time is about up. Is China's relatively modest program of military and economic aid to developing nations doing much for its international military and political prestige?

General TIGHE. Down through the years, I think there's been considerable respect for the Chinese program. I recall the effects of the rail-building program in Tanzania, for example, where they left a large residue of good will. I think the programs are modest. They take rather important people in and work very closely to assimilate themselves with the working force, and I think they do very well for themselves.

Representative WYLIE. Thank you.

NATO AND EAST-WEST TRADE

Senator PROXMIRE. Can you tell us how the other Western industrialized countries, such as West Germany, the United Kingdom, reconcile their position that we need to strengthen NATO against the Soviet military threat with their willingness to increase their

trade, including the transfer of technology, to the Soviet Union? Particularly, how this dual and contradictory posture is reconciled with the Soviet invasion of Afghanistan.

General TIGHE. That is a complex question, sir. You're relating their attitudes on defense spending for NATO——

Senator PROXMIRE. I'm asking how they justify this. After all, they have at least as great—an even greater—interest in a strong NATO as we have, and an ability to stand up to the Soviet Union. And yet, as is indicated, they contribute far less to NATO, and also they seem unwilling to cooperate with us in reducing their trade, particularly in technological areas, with the Soviet Union.

General TIGHE. [security deletion.] I think the Europeans have political problems that can explain why they aren't doing some things that we'd like to see them do, or are doing things we don't like to see them do.

The fact of the matter is that some of these countries have problems that will prevent them from doing significantly more.

Senator PROXMIRE. It would seem to me that the fact that they are affluent and well-to-do, and doing far better than they've ever done before, should make it easier for them to cooperate with us in cutting down their sales to the Soviet Union, particularly Germany, which has really never had much of an unemployment problem.

General TIGHE. [Security deletion.] I suppose ultimately you have to say it's a problem for their leadership.

Senator PROXMIRE. In your prepared statement, you go to great lengths to describe the way Western technology reaches the Soviet Union and how it aids them militarily. Can you discuss the way such technology is transferred through the East European countries to the Soviets?

General TIGHE. I can give you a very detailed response that might be helpful in connection with your hearing on the 23d.

Senator PROXMIRE. You might do that for the record.

General TIGHE. Generally speaking, they use the full gamut of all you'd expect, including [security deletion] and have access to a significant amount of our technology. But I would like to give a rather thorough response to that for the record.

[The following information was subsequently supplied for the record:]

EAST EUROPEAN ACQUISITION EFFORTS

[Security deletion.]

Senator PROXMIRE. So there are significant linkages through Eastern Europe.

By the way, are grain and other food products being shipped to the Soviet Union through Eastern Europe?

Mr. COLLINS. [Security deletion.]

Senator PROXMIRE. [Security deletion.]

Mr. COLLINS. Absolutely. Yes, sir.

TECHNOLOGY TRANSFERS TO CHINA

Senator PROXMIRE. Is there a similar techn ology transfer problem with respect to China?

Mr. COLLINS. Not to the degree there is with the Soviet Union. China is much less advanced than the Soviet Union, but China is seeking technology very vigorously, and wants to buy technology

rather than finished goods in many cases. So there is a technology transfer problem.

Or you could put it another way. The Chinese are driving very hard to acquire technology from us.

Senator PROXMIRE. Something that bothers me in perspective is I can recall so well that only a few years ago, many people felt that the big threat to this country over the long pull would be China, not the Soviet Union. That may have been misplaced, but that was a very real fear.

There's also the real possibility—maybe a likelihood—that 10 to 15 years from now, China and the Soviet Union may be once again together. How much confidence do you have that technology transferred to China won't be passed along eventually to the Soviet Union or other potential U.S. adversaries, and that it won't be used against us some day?

General TIGHE. May I just say that, first of all, most of the technology they're looking for is at a very low level. It takes up where they left off in 1960, with the loss of Soviet technology. They are interested in technology, for example, that will allow them to put an engine into a fighter, which isn't all that simple. At the present time, they are building new fighters of Chinese design.

They're interested in defensive systems, such as antitank weapons. But that's so they will not have to give up so much territory in the event of a Soviet invasion. So I'm not sure that any of this would be of great use to the Soviets.

Senator PROXMIRE. Well, it was only 30 years ago—less than 30 years ago—that we of course had American troops fighting and dying against the Chinese in Korea. That could happen again.

General TIGHE. Yes, sir. [Security deletion.]

Senator PROXMIRE. That's what concerns me: That whatever we give them might be used against us.

General TIGHE. Their military requirements are a relatively low priority. As we mentioned, they don't seem to have a tremendous amount of money to spend. I think one thing that aids and abets them in this whole process is the fact that Americans have a love affair with China and always have had. I think there's a euphoria about it in this country that will place the relationship between China and the United States on a much higher plateau.

Senator PROXMIRE. In your prepared statement you say, "These contacts have enabled the Chinese to obtain free technology and advice about advanced weapons, vast amounts of technical literature," and so on. What do you mean by "these contacts?" And second, as intelligence officers, does this give you cause for concern?

General TIGHE. The Chinese are very good intelligence officers. They are going out in all directions all over the world to turn on the sunshine and smiles. They have direct contacts with American businesses, and American businesses originally thought they were going to sell them billions of dollars worth of products and services. They still have visions of substantial gain. So I think this euphoria of which I speak, and the whole attitude of Americans toward the Chinese, is far more cooperative than they ever bargained for. And to relate to the subject at hand, they're going to get technology much more readily, more easily, than the Soviets ever did.

Published Data About Defense Expenditures in China

Senator Proxmire. Isn't it correct that the same disparity between official published and actual defense expenditures that exist in the U.S.S.R. exists with respect to China? In other words, they're not telling us the truth about their defense spending, either.

General Tighe. No; they're not. We have to come up with what we consider a realistic figure based on what we see them spending. But it's modest by comparison with the Soviet Union and there doesn't seem to be any major threat to the United States. [Security deletion.]

Senator Proxmire. What efforts have been made, if any, to obtain more complete and reliable information about the Chinese defense budget and military capabilities?

General Tighe. I don't know what assets we've put on it. I'd have to furnish that for the record, sir.

[The following information was subsequently supplied for the record:]

Analyzing the People's Republic of China Military Effort

[Security deletion.]

China's Foreign Assistance Program

Senator Proxmire. Let me conclude with a fascinating conclusion, which seems to contradict the statistics that you have in your prepared statement.

You say the Chinese are among the world's most successful donors of economic aid to developing countries. I have a table here which shows that their economic aid to developing countries in 1979 has declined and is only one-fifth of what it was. It was very small to begin with, and it's microscopic now—$135 million. We provide that to some small African countries.

Now, if theirs is very successful, there's another good argument against the U.S. AID program. I voted against it in the past. I think I'll continue to vote against it, in view of the fact that the less they spend, the more effective it is.

General Tighe. Yes, sir.

The success of the program is fairly evident. They claim to be a very, very poor part of the Third World. I think that's part of their formula for success. They maintain that facade, claim they're not a superpower, and claim they're not rich. But in sharing their modest capability with others, they make a big hit.

They also ingratiate themselves in all these projects personally, and do very well.

Senator Proxmire. What do you mean by "successful?" Is this a subjective feeling, because they're helping the very poor?

General Tighe. The close association between the Pakistanis and the Chinese is a direct result of a military program that was almost a giveaway for 15 or 20 years to the Pakistanis. I mentioned before that the Tanzanian railway, which was a major economic project for China, seemed terribly important to Tanzania, and it was to their economy. Yet it is still very modest in the total scheme of costs.

Senator Proxmire. But they've been cutting down also on the military assistance to developing countries. That was $170 million

in 1975. It's now down to about a third of that, $77 million. In Asia and the Pacific, it was $129 million; it's down to only $26 million. So it's program, as I say, that is really really—we'd have to call it insignificant. And yet we say it's successful.

General TIGHE. Yes. If you give a small gift——

Senator PROXMIRE. I think that's the kind of program we ought to have for our cities and education and all kinds of things. The more we spend, the worse we do. The less they spend, the better they do.

General TIGHE. May I just suggest that even small gifts are sometimes more appreciated than very large ones.

Senator PROXMIRE. I wish my wife felt that way. [Laughter.]

Senator Jepsen.

Senator JEPSEN. I just have a few brief questions.

AIR FORCE MODERNIZATION

In your comments this morning, General, you indicated that about [security deletion] percent today of the Air Force, for example, in the U.S.S.R., is of a 1970 vintage.

General TIGHE. Yes, sir.

Senator JEPSEN. What would be a comparable percentage figure for our Air Force?

General TIGHE. [Security deletion.]

Senator JEPSEN. If the U.S.S.R.'s [security deletion] percent is a figure—[security deletion] percent instead of [security deletion].

General TIGHE. Yes, sir. And I'd like to furnish an accurate answer to you.

[The following information was subsequently supplied for the record:]

U.S. AIR FORCE MODERNIZATION

The share of 1970's aircraft in the U.S. Air Force tactical inventory is 46 percent.

SOVIET PRIORITIES

Senator JEPSEN. Thank you, General.

Is there any indication that the Soviets are changing their economic priorities away from preferential treatment of the defense sector?

General TIGHE. None at all, sir. To the contrary. Frank, you can correct me or add anything that you like, but I think we see just the opposite—that they're willing to spend that percentage regardless of the state of the economy.

Mr. DOE. Yes, sir. In fact, for 1979 we found that the defense-related sector in their machine-building industry was growing at about a 10 percent annual rate versus about 5 percent for their more civilian-oriented sector in that same industry.

Senator JEPSEN. In that area, what I heard you just say was that the defense sector and the industrial growing rate is about double that of civilian-type services.

Mr. DOE. Yes, sir. According to Soviet statistics, it is growing twice as fast.

COMPARATIVE DEFENSE GROWTH RATES

Senator JEPSEN. Well, now, if the United States was to allow its defense budget to grow by 3 percent a year in real terms, how long would it take before U.S. defense spending reached Soviet levels?

General TIGHE. I'll see if I can provide an answer to that.

Senator JEPSEN. Would you?

And also, at 5-percent-a-year estimate.

Mr. DOE. Sir, do you mean to catch the current level of Soviet spending? The Soviet growth rate, based on dollars, is that same 3 percent. We would never catch them.

Senator JEPSEN. The question is: What percent would we have to increase our defense budget by to equal that?

Mr. COLLINS. We'll furnish that answer for the record.

[The following information was subsequently supplied for the record:]

COMPARATIVE GROWTH RATE

At a growth rate of 3 percent per year, U.S. defense spending would equal 1979 Soviet total in 1993, or in 14 years. At a 5 percent growth rate, the U.S. total would match the 1979 Soviet total in 1987, or in eight years. However, if the dollar cost of Soviet military activities continues to rise by 3 percent per year as it has in the past, U.S. defense spending would have to increase by 7.2 percent per year for a decade in order to match the Soviet total. When making such comparisons, it is necessary to keep in mind that annual cost comparisons are not good proxies for overall military capability at a point in time.

Senator PROXMIRE. This is the discussion of the Soviet military in strict comparison to ours, not including the use of Soviet troops for agriculture or for building or for anything like that?

Mr. DOE. Yes sir, excluding construction troops.

COMPARATIVE EFFICIENCY

Senator PROXMIRE. Isn't it also true that ours is a somewhat more efficient economy, and that in many areas we can get more for the dollar than they can? I would think that we could produce for the same amount of dollars more tanks of a certain kind, if both the United States and the U.S.S.R. produced the same kind of tank precisely. We should be able to produce more per dollar than they should.

General TIGHE. We should be able to. I'm not sure that the designs that we use would allow us to. The weapons building process in the Soviet Union prescribes that they use a certain percentage of old technology or proven technology in every new weapons system. So it's a little bit difficult to answer that question precisely.

Their defense sector is horribly wasteful. But it is the most successful sector they have of their society, and it has rules that aid the quantitative grinding out of weapons systems as opposed to the qualitative aspect.

COST COMPARISONS

Senator PROXMIRE. Isn't it true that to translate rubles into dollars, and comparing the two on that basis, tends to exaggerate—overstate—the difference?

General TIGHE. That is true.

Mr. COLLINS. We've done both comparisons. Mr. Doe is quite familiar with it.

Mr. DOE. The comparison in dollars does reflect the index number problem, which is common to all comparisons of economic aggregates, either over time or across borders.

However, the way that we treat the bias that makes the Soviets look larger in dollars is to cost the U.S. effort in rubles. This reverses

the bias and makes the United States appear large. What we find out when we do this in quite some detail is that it doesn't alter our basic conclusion.

Senator PROXMIRE. It's my understanding we've never done this in rubles.

Mr. DOE. We've done it every year since at least 1975.

Senator PROXMIRE. In detail?

General TIGHE. Since 1975.

Mr. DOE. I personally did it in detail 2 years ago.

Senator PROXMIRE. Give us a copy of that. We've never seen a copy. We've seen it the other way. We've asked for it, but we've never been able to get it.

Mr. DOE. It is a secret document.

Senator PROXMIRE. Well, we have clearance. I have clearance. Mr. Kaufman has clearance.

General TIGHE. There's no problem. We'll get it.

[The following information was subsequently supplied for the record:]

UNITED STATES-SOVIET RUBLE COMPARISON

The dollar comparison

Estimates of the cost of Soviet military activities in U.S. dollar terms reflect what it would cost in the U.S. to reproduce the Soviet activities using U.S. cost factors and pay rates. These estimates can be compared to U.S. defense outlays provide a measure of the relative size of the defense activities of the two countries in each year. While the dollar costs do not represent what the Soviets actually spend on their military establishment, they do provide a means of sizing the various elements of each country's military programs in comparable terms and demonstrate relationships which are difficult to discern and measure in other ways.

Criticisms of the estimates

Concern has been expressed in the U.S. Congress and elsewhere that dollar comparisons may systematically overstate the size of Soviet defense activities relative to that of the U.S. Senator William Proxmire stated in 1975 that, according to his staff:

The estimate of Soviet defense spending in dollar terms is inherently biased in the direction of increasing the apparent Soviet defense budget.[1]

The Congressional Budget Office presented similar arguments when it reported that bias in the estimating process "makes dollar costing of Soviet programs overstate their size." [2]

The index number problem

These criticisms are generally valid and stem from the "index number problem" which is common to virtually all international economic comparisons. The index number problem stems from two factors. First, each country tends to produce and then use large quantities of goods which are relatively cheap. Second, the goods which are relatively cheap in one country may be quite expensive in another due to differences in resource endowment, tastes, and technological development. When an attempt is made to measure the value of output of a foreign economy in domestic prices, many of the high-output items in the foreign country are valued at the relatively higher prices prevailing in the domestic economy. Although relatively low domestic prices are applied to the foreign country's low-output items, the high prices and high quantities far outweigh the impact of the low domestic prices and low foreign quantities. The net result is an upward bias in the value of the foreign output in domestic prices.

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[1] "Allocation of Resources in the Soviet Union and China—1975," Hearings Before the Subcommittee on Priorities and Economy in Government of the Joint Economic Committee, Congress of the United States, 94th Congress, 1st session, June 18 and July 21, 1975, part I, p. 23.

[2] Memorandum to Representative Brock Adams, chairman, Committee on the Budget, U.S. House of Representatives, from Alice M. Rivlin, Director, Congressional Budget Office, July 21, 1976, appendix: "Replies to Chairman Adams' Questions in his letter of Apr. 15, 1976," p. 5.

This can be illustrated by a simple example. Suppose that two countries, A and B, have economies which produce only wine and cloth. The prices and quantities of each are displayed below.

	A (A's currency)		B (B's currency)	
	Price	Quantity	Price	Quantity
Wine	80	5	100	6
Cloth	10	100	20	50

When we calculate the total costs for both countries in both currencies, we observe the following:

	Value of output			
	In country A's currency		In country B's currency	
	A	B	A	B
Wine	400	480	500	600
Cloth	1,000	500	2,000	1,000
Total	1,400	980	2,500	1,600
A/B	1.43		1.56	

In this example, the value of the output of economy A is larger than that of B regardless of which currency is used as the common denominator, but the margin is greater when the comparison is made in country B's currency.

There is no precise answer to the question "How large is the economy of country A relative to that of country B?" However, comparisons of the type illustrated above can provide a range of measures of relative size. It can be precisely stated, for the example above, that A's economy is 56 percent larger than B's when measured in B's currency—reflecting B's resource endowments, tastes, and technology—and by 43 percent when measured in A's currency—reflecting A's resource endowments, tastes, and technology. The economic meaning of the two comparisons in the example is unambiguous because, in both cases, A's economy is shown to be larger than B's. Measures of central tendency, such as the simple mean or geometric mean of the two figures, do not provide further information on the actual relative sizes of the economies. Such measures reflect neither country's price system, and therefore do not represent the perspective of either set of concerned policymakers.

Index number bias in defense comparisons

Comparisons of U.S. and Soviet defense activities are subject to the type of index number bias illustrated in the example. Dollar cost comparisons are useful because they provide insights—in terms familiar to U.S. policymakers—about the relative magnitude of defense activities. They do, however, tend to overstate Soviet activities relative to those of the U.S. U.S. cost factors give a large weight to certain Soviet resources—such as manpower—which are relatively more costly in the U.S. than in the U.S.S.R., but which are utilized more extensively in the Soviet military establishment.

Because all international comparisons of economic activity must use the prices of one country or another, there is no theoretically precise answer to the general question, "How large is the Soviet defense effort relative to that of the U.S.?" Consequently, it is not possible to estimate the exact amount of overstatement in dollar comparisons of defense activities. It is possible, however, to provide additional insights by comparing estimates of the cost of U.S. and Soviet activities in rubles, approximating the perception of Soviet leaders as expressed in their system of values, reflecting Soviet resource endowments, tastes, technology, and political priorities. This reverses the bias and makes the U.S. effort appear relatively large.

Methodology

[Security deletion.]

Comparison for 1979

In 1979, the estimated dollar cost of Soviet defense programs exceeds U.S. defense outlays by roughly 50 percent. In comparison, estimates Soviet defense outlays in rubles in 1979 exceed estimated U.S. defense costs in rubles by 30 percent. The traditional index number effect is exhibited by the decrease in the Soviet size advantage when rubles are used as a common demoninator.

Conclusion

Thus, while the criticism is valid that the dollar comparison of Soviet and U.S. military activities incorporates an upward bias in the Soviet total, estimates of the ruble totals for both countries indicate that the bias is not significant enough to alter the basic conclusion that the costs of Soviet military activities are larger than those of the U.S.

Senator JEPSEN. While we're in this general area, I'd like to point out—I believe it was the Army Chief of Staff and others feel very definitely that qualitatively, we're practically falling behind in equipment.

General TIGHE. I think there is good cause for alarm. If you had a system that produces something new of each variety every couple of years, then the accumulation of old and new technology, the forward edge of all the technologies that you're using will gradually surpass a system in which it has taken 10 years for us to develop a tank, for example.

We notice, for example, that the T–72, which is the newest Soviet tank, is being sold now to the Indians.

So here we have these new systems every couple of years, improved to the point where the cumulative improvements overshadow our ability to match them.

Senator JEPSEN. Would you recommend that we have a complete study of our whole procurement system?

General TIGHE. We had blue ribbon hearings in 1968, as I recall. It seems to me that there was a minority judgment at that time that some examination of our production system should be undertaken. The judgment of the majority, I believe, was that to do so was to suggest that you turn our economic system into a model of the Soviets, which didn't have a great deal of appeal.

Senator JEPSEN. We'll test that out.

Senator PROXMIRE. I want to thank you very, very much. The subcommittee will stand adjourned.

[Whereupon, at 11:45 a.m., the subcommittee adjourned, subject to the call of the Chair.]

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ALLOCATION OF RESOURCES IN THE SOVIET UNION AND CHINA—1980

THURSDAY, SEPTEMBER 25, 1980

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON PRIORITIES AND
ECONOMY IN GOVERNMENT OF THE
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to notice, in executive session, at 10:10 a.m., in room 5302, Dirksen Senate Office Building, Hon. William Proxmire (chairman of the subcommittee) presiding.

Present: Senator Proxmire.

Also present: Richard F. Kaufman, assistant director-general counsel.

OPENING STATEMENT OF SENATOR PROXMIRE, CHAIRMAN

Senator PROXMIRE. The subcommittee will come to order.

Admiral Turner, you and your colleagues are most welcome to the sixth annual hearing on "The Allocation of Resources in the Soviet Union and China." This is a busy time for all of us, especially for you. The war between Iran and Iraq has undoubtedly created great demands on your time. We're especially grateful that you're able to be with us today.

It's tempting to ask you questions about the war in the Persian Gulf, and now that conflict may at least be indirectly related to some of the issues you were invited to address. However, we do want to concentrate on the primary purpose of this hearing; namely, the current economic trends in the Soviet Union and China, including the allocation in those countries for both civilian and military purposes.

Therefore, I'll refrain—and I'm going to ask other members who may come in on these hearings to refrain—from asking you questions about the war in the Persian Gulf. Again, it's not because it is not an important conflict, but rather because we want to spend as much time as possible on the Soviet Union and China.

I might say, Admiral, after looking at your prepared statement, that there are two controversial topics that stand out. Both concern the Soviet Union. The first is the CIA's estimate and forecast of Soviet oil production. There has been serious controversy surrounding your estimates since they were revealed in 1977. This is one of the rare

instances where disagreements within the intelligence community have surfaced, and I would like to hear an explanation of the CIA's estimates, and why they differ from those of the Defense Intelligence Agency.

This is not just an academic disagreement, whether or not the Soviet Union becomes a net importer of oil during the 1980's, as the CIA predicts. It has profound implications for the United States, the West, and other regions of the world, as well as for the Soviet Union.

A second area of controversy concerns the CIA's estimates of the cost of the Soviet defense program, and the comparisons that are made with the United States. A whole series of questions has been raised as to the CIA's dollar-cost methodology. The subcommittee has raised a number of questions over the years, and some of these questions have not been satisfactorily resolved. There have been articles, as you know, in the Washington Post that challenge the interpretation that's put on the CIA data, and I think they're of the greatest importance. Perhaps we can make further progress on this today.

Now, you've been an excellent and responsive witness in the past, and as you know, the CIA and the intelligence community in general have been cooperative with us. Thanks to that cooperation, we've been able to puncture some myths and shed new light on the economies of the Soviet Union and China. Indeed, given the closed nature of the Soviet and Chinese systems, the CIA is probably the single most important source of information about these two countries to the Congress, as well as to the executive branch, and for the public generally.

I might say that this information is of the greatest importance. I don't know of any more important decision that we can make as a Congress to provide for a fully adequate defense to defend our country and our vital interests. At the same time, everything hinges on what is adequate, and of course that adequacy depends primarily on the forces that we face in the world, our principal potential adversary being the Soviet Union; and to the extent that we underestimate that, of course, if we do, it would be tragic.

To the extent that we overestimate it, it could be extremely wasteful. There's no question that we suffer right now from a very serious inflation that is having the most profound effect on our economy. The basis of our military strength is our economic strength, and if we spend too much and are too extravagant and too wasteful, there's no question that the effect on our economy will be extremely adverse.

So, we want to get just as accurate and reliable an estimate of the Soviet Union's military investment and threat as we possibly can, and of their economic power to provide that military force. So I want to repeat my welcome to you, Admiral Turner, and say that we're appreciative of your efforts and those of your staff.

By the way, if it is possible, I would like to be able to release a portion of this hearing concerning the Soviet economy prior to full publication of the transcript. I hope it is possible for you to sanitize that part of today's proceedings and be able to make that public within a short time.

Please proceed, Admiral.

STATEMENT OF ADM. STANSFIELD TURNER, DIRECTOR, CENTRAL INTELLIGENCE AGENCY, ACCOMPANIED BY FREDERICK P. HITZ, LEGISLATIVE COUNSEL, OFFICE OF THE DIRECTOR; JERRY CRAWFORD, CHIEF, INTELLIGENCE DIVISION, OFFICE OF LEGISLATVE COUNSEL; DOUGLAS DIAMOND, JOHN ECKLAND, MARTIN KOHN, AND ROBERT M. FIELD, OFFICE OF ECONOMIC RESEARCH; KELLY WEAVER, OFFICE OF SCIENTIFIC AND WEAPONS RESEARCH; AND JAMES BARRY AND JAMES CARSON, OFFICE OF STRATEGIC RESEARCH

Admiral TURNER. Thank you, Mr. Chairman. It's always stimulating to be here. We look forward to an exchange with you and your colleagues.

I do have a prepared statement on the Soviet economy which will include the question of oil differences between us and the DIA, some remarks on the Chinese economy, and then a short set of comments on this issue of the cost of the Soviet military forces. With your permission, I'll proceed at least with the first set of comments on the Soviet economy, and then either take questions on that or proceed with the others, as you desire.

[The prepared statement of Admiral Turner follows:]

PREPARED STATEMENT OF ADMIRAL STANSFIELD TURNER

The Soviet Economy

GENERAL

I. Mr. Chairman, for the past several years we have been appearing before your committee to discuss developments in the Soviet and Chinese economies and to report on trends in military spending in the U.S.S.R. and China. Our testimony on the Soviet Union has charted an economy losing its momentum while military programs continue to be pursued with vigor and determination.

A. This picture has not changed, Mr. Chairman. This morning I would first like to review very briefly why the economic outlook is so grim.

B. But I will mainly discuss why the combination of slowing economic growth and rising military outlays pose such difficult choices for the Soviet leadership over the next several years.

1. If military expenditures continue rising at annual rates of 4–5 percent, much faster than the economy, the size of the military burden will grow.

2. The burden of maintaining, and expanding, the Soviet empire also is increasing. The war in Afghanistan and Soviet economic aid to quell popular dissatisfaction in Eastern Europe will place substantial additional claims on an already strained economy.

3. At the same time, the cost of developing energy resources and investing in industries that constitute bottlenecks is soaring.

4. At least for the near term, the Soviet consumer, already hurt by last year's bad harvest, is likely to be squeezed further. Although the Russian people are long suffering, they may become even more apathetic and even less likely to respond positively to government efforts to raise productivity.

5. We see little chance of a major restructuring of Soviet priorities during the remainder of the Brezhnev administration. After Brezhnev goes, moreover, it may take several years before a new leadership has acquired enough power to make hard choices among competing demands.

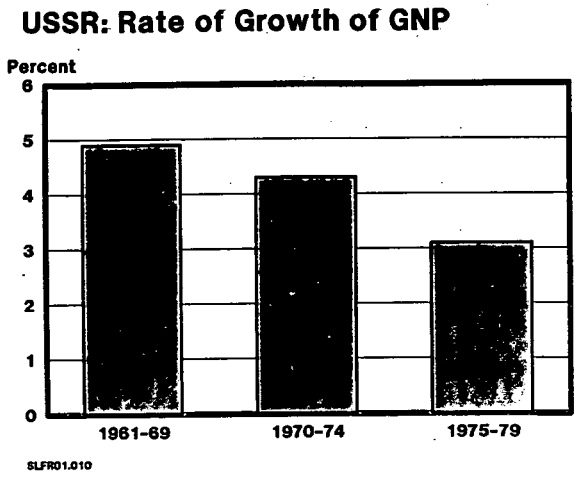
II. Let me begin by recapitulating our findings regarding the Soviet economy.

A. In terms of overall performance, the economy continues its decline.

1. The rate of economic growth has declined steadily since the 1960s, as shown in Figure I.

FIGURE I

22



2. The 1st bar shows that the decade of the 60s was one of average growth of roughly 5 percent per year. The next bar shows the 1st five years of the 1970's averaging just over 4 percent while growth during the second half of the 1970's—shown in the third bar—fell to 3 percent.

(a) The major crop failure in 1979 and subsequent U.S. export restrictions have grabbed most of the headlines, but industry, the traditional growth leader, also turned in its worst showing since World War II; industrial production increased by only 2.2 percent last year.

(b) This slump in industrial growth, together with a serious shortfall in grain production, limited GNP growth to less than one percent last year.

3. Because of the more normal weather we have seen thus far in 1980, growth this year will be in the neighborhood of 2.5–3.0 percent.

B. Nonetheless, the long-run prospects for the Soviet economy have not improved in the slightest. The outlook is for a continued decline in the rest of the 1980's. This assessment rests on the same weaknesses that I have discussed in previous briefings.

1. A prospective decline in oil output;

2. A fall-off in the rate of growth of investment and of the labor force;

3. A sharp rise in raw material costs, resulting from the rapid depletion of easily accessible natural resources and increasing difficulties in extracting and processing new deposits of fuels and other raw materials;

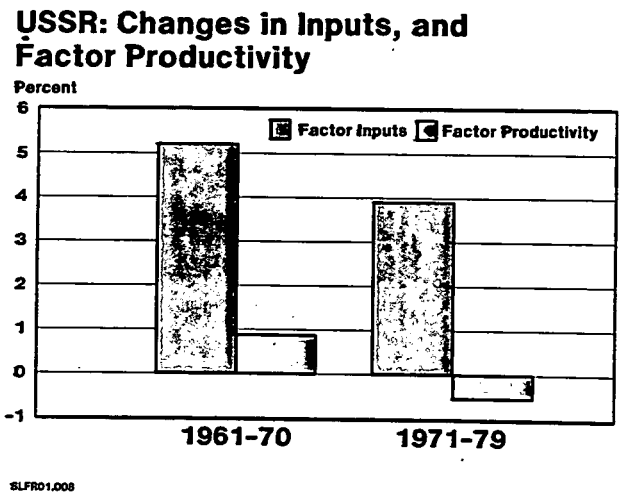
4. Shortfalls in the production of basic industrial products that have become serious bottlenecks in the economy—steel, building materials, and fertilizer, for example—and, most important;

5. The failure of overall productivity gains—that is, output per unit of labor, capital, and land combined—to offset slower growth of the labor force and investment.

(a) While rising productivity has never been the primary engine of Soviet growth, it has actually declined in recent years, both in industry and in the economy as a whole.

FIGURE II

SL



(1) The combined rate of growth of labor, capital services, and land has been the main support for the growth of GNP. As shown in the hatched bar, it averaged just over 4 percent per year through the 60s and was just below that in the 70s.

(2) The decline in GNP growth that we witnessed on the previous chart, then, has been the result of a sharp reduction in the efficiency with which these inputs have been employed. Whereas in the 1960s, factor productivity increased by almost 1 percent per year, in the 1970's factor productivity declined by almost one-half of 1 percent per year.

b. This failure of the Soviet system to generate productivity gains on the scale of those evident in Western countries is probably Moscow's biggest headache.

POLICY ISSUES

III. Against this background of economic difficulties the Politburo is now trying to agree on the 1981–85 five-year plan. Some exceedingly difficult policy decisions must be made.

A. In a nutshell, their problem is that increments to national output in the early 1980's will be too small to permit simultaneous achievement of four goals which they have:

1. Increasing investment enough to stabilize energy production and remove bottlenecks in transportation and key industrial sectors;
2. Continued growth in defense spending at the past rate (4–5 percent per year);
3. Increased economic support for Eastern Europe; and
4. Some substantial increase in consumer welfare.

LEADERSHIP CHANGE

B. The tough choices, moreover, may have to be made in a period when major changes in the Soviet leadership take place.

1. President Brezhnev is now 73, with a history of major medical problems. Who follows President Brezhnev, and whether he, or they, adopt the same pri-

orities depends on how long Brezhnev survives, on the evolution of East-West relations, and on developments in Eastern Europe.

2. But it is likely that whoever follows Brezhnev will have less authority than Brezhnev, at least until he is able to consolidate his power—a process that could take several years.

3. Premier Kosygin and a number of the other top leaders also are in their 1970's and have their own health problems—raising the possibility of wide-ranging changes in the Kremlin, which would further complicate the sorting our process for the new leadership.

4. Conflict over resource allocation will generate debate over key policies within the leadership. We believe that the forces favoring continuity of policies will dominate.

(a) Powerful interest groups will defend the status quo.

(b) Reforms will be proposed, but a consensus as to major change is unlikely.

(c) Resistance to major changes can be overridden only by a powerful new leader.

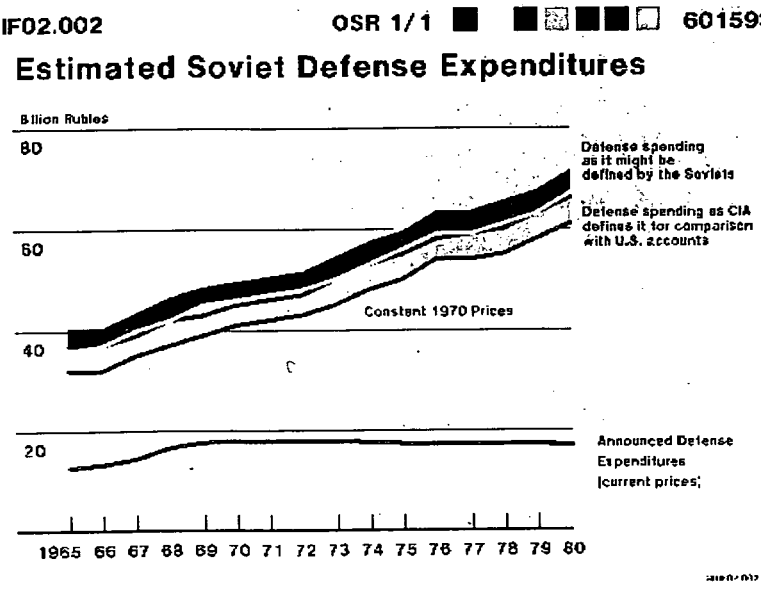
DEFENSE BURDEN

IV. To show just how urgent these demands are, I want now to discuss the underlying pressures for each of these four goals: more defense, higher rates of investment, greater support to Eastern Europe, and a better deal for the Soviet consumer. For U.S. policymakers, of course, the Soviets decisions on defense are of paramount interest.

A. 1st Defense: Mr. Chairman, I know you have a particular interest in the methodological issues involved in comparing the costs of US and Soviet defense activities. I will discuss these in detail later.

B. This next chart shows our late summary estimates of Soviet defense spending in constant 1970 ruble prices (see figure III).

FIGURE III



1. The upper band on the chart shows Soviet spending under their definition of defense. This includes the costs of internal security troops, certain civil defense activities, and space programs that are operated by the military in the U.S.S.R. but by other agencies in the U.S.

2. The next lower band shows Soviet expenditures in rubles for a program comparable to ours.

3. The single line below the two bands shows defense as reported by the Soviets in their annual state budget. The difference is, of course, why we must go through the process of calculating Soviet defense expenditures.

4. Defense spending probably accounted for 11 to 13 percent of Soviet GNP between 1965 and 1978—a roughly constant share over this period because defense and the economy were growing at about the same rate. More recently, though, defense spending continued to increase at about the same rate as in the past while Soviet economic growth declined to its lowest rate since World War II. Thus by 1979, the share of GNP devoted to the military probably increased by about one percentage point, to 12 to 14 percent.

C. There are no indications that the present Soviet leaders intend to cut back on defense. Their public speeches underscore the need to press on with military programs, and our monitoring of indicators of future defense programs—such as weapons production and testing and new construction at defense facilities—all suggest that defense spending will continue to grow.

1. If our projections of both a continued rise in the funding of defense and a decline in the growth of GNP are correct, the defense share of Soviet GNP could rise to about 15 percent by 1985, compared with its current share of 12-14 percent. More significantly, by 1985 the increase in defense spending could absorb as much as three-quarters of the increment in GNP, so that few new resources would be available for the civilian economy.

2. This continuing priority to defense at a time when the economy is faltering may appear paradoxical, and raises questions about Soviet motives and intentions.

(a.) Actually it has been the policy of the current leadership ever since its rise to power in the mid-1960's to emphasize the expansion and modernization of its forces.

(b.) Underlying this policy has been a belief in the political utility of a strong military—a conclusion that already has paid off well in terms of the prestige the U.S.S.R. has gained in acquiring strategic parity with the US and the capacity to carry off aggressive policies in Angola, Somalia, Yemen, and Afghanistan.

(c.) In the immediate future, the Soviet leaders would appear to have additional incentives to keep up their emphasis on defense.

(1) They are concerned that new U.S. and NATO weapons planned for introduction over the next few years could offset some of the gains they have achieved in strategic forces.

(2) They also are worried about the current international situation, which they view as being at its lowest point in 15 years.

INVESTMENT LAGS

V. Because we believe that Soviet defense will retain its priority for the near term, the bind on investment programs will become increasingly tighter.

A. Military requirements and investments compete especially for machinery and construction resources.

1. Shortages of basic materials, such as steel and cement, have interrupted construction activity and inpinged on many industrial operations. Recognizing the consequences for the economy, Soviet leaders and planners have tried to speed up the introduction of new capacity—usually with little success.

2. Meanwhile, the scattered evidence we have on directions for the new 1981–85 Plan indicate that the leadership realizes that machine building capacity is overcommitted and needs priority attention.

B. The cost of developing energy resources is increasing by leaps and bounds:

1. Oil and gas developments in West Siberia, including the required infrastructure, is already taking about 8 percent of total investment, and this share will probably double in the next few years.

2. New coal basins, located in Siberia, far from major consuming countries, require enormous investments.

C. The transportation sector—a victim of inadequate investment and woeful management—is in bad shape.

1. Delays in the transportation of key industrial materials have been commonplace.

2. Soviet planners attribute the poor showing in a number of industrial sectors directly to this problem.

D. What has developed here is an economy in growing disequilibrium, where problems in one sector degrade the performance in another. Since these imbalances did not spring up over night—and in large part reflect past mistakes in allocating investment resources—they can't be overcome very quickly.

ENERGY

VI. But the worst problem is in energy.

A. Sharply declining energy growth will be the biggest new constraint on economic growth. During the 1970's energy output grew at an annual rate of nearly 5 percent. By 1985 we estimate growth will be down to 1 percent, even if Moscow sharply raises the amount of investment in this sector—as seems likely.

1. This conclusion essentially reaffirms my statement of a year ago and is based on an intensive review of the Soviet energy situation that we have conducted during the past six months, drawing on our own experts, as well as others from in and out of government.

2. Based on this review, we believe that Soviet oil production is now at or near its peak.

3. While I told you last year that production would peak this year—and we still think that there is a good chance that this will occur—the Soviets may be able to avoid any downturn in production for a year or so with extreme effort at major fields.

4. This strategy could not be maintained for more than a year or two because increased reservior damage would force production down.

B. In any case, we continue to project oil production declines through the remainder of the 1980s. The Soviets simply lack the accessible high-flow oil reserves to sustain their current oil production for long. By high-flow, I mean rates on the order of 1000 barrels a day compared with an expected 200–300 b/d in the future.

1. Their past oil production strategy has been to produce their largest and best fields at very high rates.

(a) But they have not found any giant fields in the past 7 years.

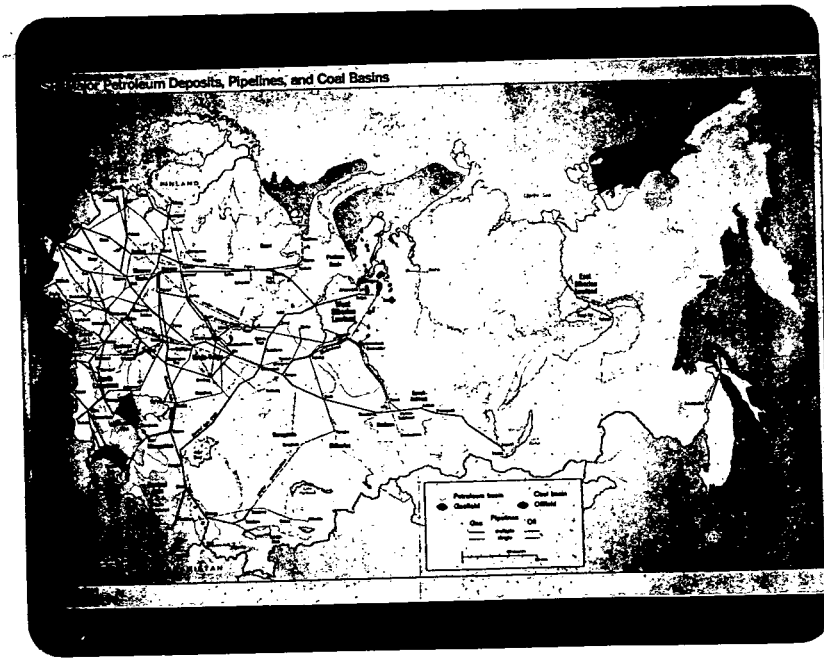
(b) And a large part of the remaining reserves are in smaller fields and in less productive oil strata, where several times as many wells are required for a given level of production.

2. The odds on finding large new fields in accessible areas are poor because most large fields are found fairly quickly and easily.

3. Still the U.S.S.R.'s long-term oil potential looks good. There are many promising areas that have not been explored.

(a) But these cannot be made productive in the 1980's because of the time required for development in distant inhospitable areas, lack of suitable Soviet technology, or simply the absence of the necessary technology anywhere in the world.

MAP I



C. As shown in the map, the key to the Soviet oil picture in the 1980s is West Siberia where the largest petroleum deposits are located. In most other explored areas, such as the Urals-Volga and the western part of the country, oil production is declining and a continuing steady decline is virtually certain.

1. Moscow has been making a massive effort to develop West Siberian oil production.

(a) It has been increasing the number of drilling rigs, the labor force, and the infrastructure of the area rapidly, but results have lagged far behind goals.

(b) A major part of the problem—as is evident from the map—are the distances involved in moving materials and supplies.

2. The Soviets themselves expect that drilling would have to more than triple in 1981–85 in Western Siberia just to maintain oil production at the 1980 level.

(a) This clearly places too many demands on skilled labor, equipment, construction, and management.

D. When domestic oil production begins to decline, the Soviets will be forced into making some tough trade-offs between their own needs and those of Eastern Europe.

1. Of the 12 million b/d produced today, about 9 million b/d are consumed domestically, while roughly 3 million b/d are exported—2 million b/d to Eastern Europe and 1 million b/d to the West for hard currency.

2. While Moscow can insulate its own economy from the impact of the oil decline by reducing exports to Eastern Europe. Moscow cannot push too hard in this direction without threatening the stability of the regimes in Eastern Europe. At the same time, cutting back on exports to the West would reduce hard currency earnings—earnings that are important if Moscow is to continue importing large quantities of grain, steel, and machinery from the West.

E. Oil production is not the only Soviet energy problem, however. Chances for accelerating coal output, which accounts for 30 percent ot the energy consumption, are bleak.

1. Since the mid-1970's, new mine capacity has been slow coming on stream while mine depletion has been rising.

2. In addition, new coal basins are located in Siberia, far from major consuming centers, and much of the coal is of poor quality. Major investments also will be needed in this area, but it will be at least the late 1980s before any significant impact on production can be expected.

F. Unlike oil and coal, prospects for gas production are good. Growth during the 11th FYP is likely to average around 5 percent annually.

1. Because gas is not easily substitutable for oil in a number of important industrial uses, Moscow will employ much of this growth to increase exports to the West.

2. The Soviets are moving ahead quickly with plans for a $10–$15 billion natural gas pipeline project to carry Soviet gas to Western Europe.

(a) The project offers the West at least $6 billion in new equipment sales in return for substantial deliveries of gas to Europe at a time when it faces uncertain deliveries from traditional, non-Communist suppliers. By 1985, for example, West Germany will get about 30 percent of its natural gas from the U.S.S.R.

(b) To the U.S.S.R. the project offers a financial bonanza—Soviet gas exports would be the equivalent of 1 million b/d of oil by the late 1980s.

(c) The additional hard currency generated by rising gas exports will not be enough, however, to prevent the U.S.S.R.'s present surplus in energy trade from turning into a deficit.

Even if gas prices rise to equal oil prices, the additional gas exports to Western Europe will not be enough to offset the loss in hard currency that the U.S.S.R. will incur when, instead of selling oil for hard currency, it has to buy oil to make up for domestic shortfalls and to supply Eastern Europe.

POLAND AND EASTERN EUROPE

VII. Mr. Chairman, another development of importance for Soviet policy choices is exemplified by the unrest in Poland.

A. For several years, Moscow has been trying to reduce the cost to the Soviet Union of maintaining its empire.

1. The U.S.S.R. has been raising the prices that Eastern Europe pays for the energy and raw materials it buys from the Soviet Union. It also has tried to put a ceiling on the energy it is willing to supply in 1981–85.

2. Recent events in Poland are likely to lead Moscow to reexamine its policy toward Eastern Europe.

(a) The East European countries have been facing the same kind of sharp slowdown in economic growth that confronts the U.S.S.R.

(b) The unrest in Poland shows that Moscow is taking a big risk if it assumes an inflexible attitude toward Eastern Europe in economic policy.

B. The Soviets' first priority will be to extend aid to Poland, viewing it as both necessary to avoid politically dangerous economic deterioration and as an instrument of leverage to limit Warsaw's political concessions to the workers.

C. The Soviets can provide some of the aid Poland needs in many ways. They can:

1. Provide trade credits, as they have in the past, by running trade surpluses with Poland;

2. Continue to trade with Poland at prices more favorable to Poland than those prevailing in world markets;

3. Grant outright hard currency loans; and,

4. Ask Soviet controlled Western banks to lend to Poland, as they did last month.

D. For the moment, Moscow is in a position to give some hard currency aid. Moscow's trade and payments situation is a bright spot in the Soviet economy; high oil prices have put the U.S.S.R. in its strongest financial position in years.

1. Moscow's hard currency exports totaled a record $20 billion in 1979—about half of which came from oil sales of 1 million b/d.

2. The export boom combined with substantial revenues from gold and arms sales allowed the Soviet Union to record a hefty $4-billion current account surplus in 1979.

3. Earnings from oil exports should be at least as high as this year, giving Moscow the revenues to pay for increased food imports and still maintain a current account surplus.

4. The rosy trade picture has given the Soviets the luxury of abstaining from Western gold and credit markets, and has given them some flexibility in dealing with emergencies in Eastern Europe.

As I have already argued, however, Soviet flexibility in providing aid will erode rapidly in the 1980s as Soviet energy production falters, leading to first a rapid fall and then the disappearance of oil exports.

1. Moscow will also be cautious in offering aid, knowing that Eastern Europe's requirements are bound to increase.

2. In the short run, as the U.S.S.R. extends aid to Poland, other Eastern European countries are likely to press for similar help, even in the absence of unrest comparable to that in Poland this summer.

3. In the longer run, as the expected economic slowdown in Eastern Europe grinds on—and the gap between popular expectations and actual material conditions widens—the probability of unrest is likely to rise and aid requests to the U.S.S.R. are likely to grow more urgent.

4. But the East European need for help will be growing just at the time we think the rise in living standards in the U.S.S.R. will come to a halt. The Soviets surely will be increasingly reluctant to subsidize East European consumers who already are more prosperous than the Soviet population.

THE SOVIET CONSUMER

VIII. With defense claiming a larger share of GNP, with investment skewed more heavily to the producing sectors of the economy, and with Eastern Europe in need of help, the Soviet worker has little to look forward to in the next several years.

A. Even with a series of average to above-average crops and sizable grain imports, we expect the gap between the amount of meat demanded and the amount supplied to widen. Last year's poor grain crop, coupled with a mediocre crop in 1980 and continued partial denial of Western grain, means that meat output will remain well below plan targets.

1. To help lessen the impact of 1979's poor harvest on their livestock program, we estimate Moscow would have liked to import as much grain in the period October 1979–September 1980 as their ports could handle—somewhere between 36 and 40 million tons.

2. The Soviets had hoped to import 25 million tons of this total from the U.S.—the maximum allowed during the fourth year of the U.S.-Soviet Long-

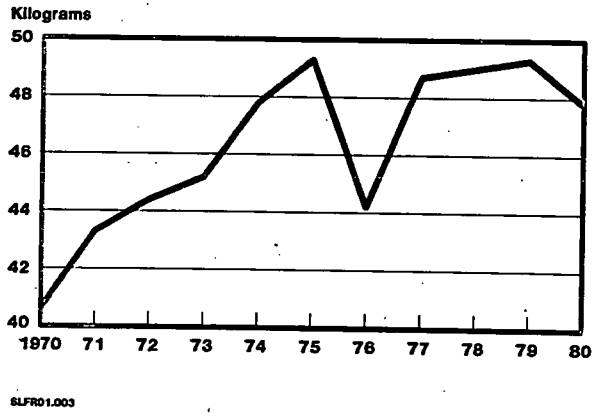
Term Grain Agreement. Under the sanctions implemented last January, however, they were limited to 8 million tons—17 million tons less than they wanted.

3. Moscow has been able to make up about half of these losses through additional purchases from Canada and Argentina.

4. The net result is that grain imports during this year of the Agreement will total about 27 million tons, but 9–13 million tons short of their original intent. Based on our estimate of grain availability and domestic requirements, meat output this year will drop at least 3 percent below that of 1979. Per capita meat consumption will drop to the level of the early 1970's (see fig. IV).

FIGURE IV

USSR: Per Capita Meat Consumption, 1970-80



B. According to voluminous reporting from Soviet sources the food situation is serious. It is frequently described as the worst in many years.

1. The recent strikes at the motor vehicle plants in the cities of Tol'yatti and Gorkiy (in the Russian Republic-RSFSR), for example, were touched off by food shortages. They were settled only after authorities rushed in supplies from surrounding areas.

MAP II

C. The deteriorating food situation represents a major setback in the regime's efforts to boost living standards.

1. At present, real per capita consumption in the U.S.S.R. is about a third of that in the U.S., as can be seen by comparing the top and the bottom bars on this chart. This gap was narrowing in the 1960's, but it has widened during the 1970's as Soviet growth trailed off.

FIGURE V

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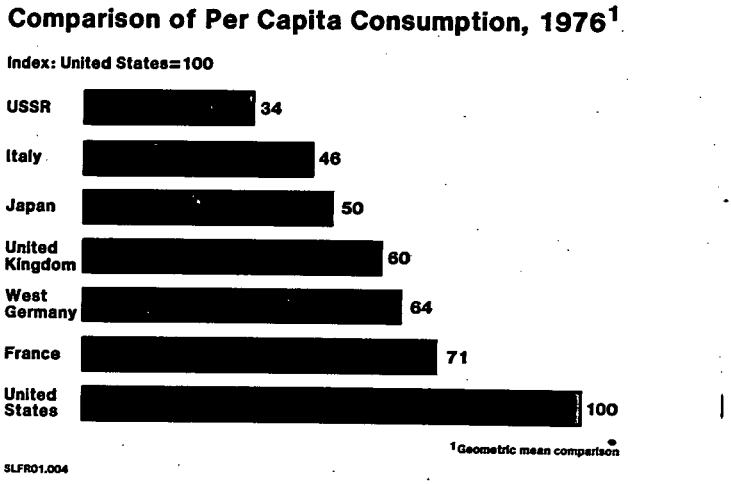
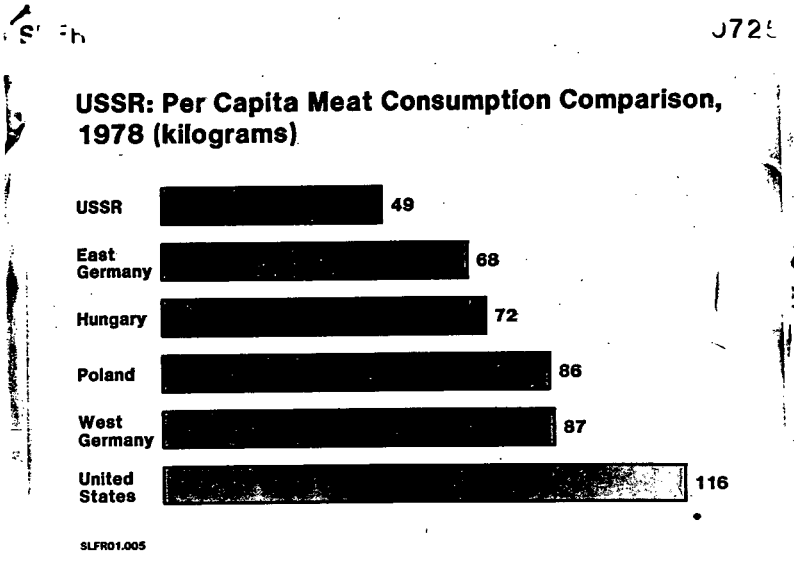


2. The Soviets also lag far behind the major West European countries and Japan. Except for the United Kingdom, the differences have increased considerably since the 1960's.

3. In terms of per capita meat consumption, the Soviets even lag 20–40 percent behind their East European allies, making it hard—as I just said—to justify giving more aid to Eastern Europe at the expense of investment allocations for Soviet agriculture.

FIGURE VI



4. A series of bad crop years could prove especially disastrous. Tensions within the populace would increase greatly, and Moscow would fall even further behind in its drive to catch up to living standards in the West and in Eastern Europe.

D. The Politburo's short run response to the squeeze on consumption is likely to stress labor discipline and measures to restrain consumer demand. It will try to hold down the year-to-year rise in wages and salaries and may decide to raise prices on consumer goods and services—an option it has avoided since price increases in meat and butter led to civil disturbances in 1962.

1. After years of promising workers a higher standard of living, it is significant that some senior party and government officials are downplaying the link between worker motivation and the provision of more and better goods.

2. In fact, since mid-1979 Moscow has been pushing for tighter control over incomes and manpower.

3. A Central Committee-Council of Ministers' decree issued in July 1979 gives the State Planning Committee (GOSPLAN) more power to allocate scarce labor resources and to control the level of wages.

4. Speaking on preparations for the new Five-Year Plan last November, Brezhnev warned: "Discipline and order are always necessary. Now when the scale of economic management has expanded tremendously * * * they become particularly necessary * * * the strict observance of the law is one of the unconditional prerequisites for the functioning of the entire economic mechanism."

LONGER-TERM POSSIBILITIES

IX. A. Mr Chairman, we think, then, that the aging Soviet leadership is marking time. In the economic arena, it prefers tinkering at the margins to extensive policy changes.

1. The alternatives seem too painful and risky, especially since the leadership cannot expect to enjoy the fruits of policies whose benefits are deferred for more than a few years.

2. In the matter of economic reform, for example, the Politburo probably will be content to continue with the half-hearted measures announced last July.

(a) On balance, last year's decrees call for more centralization of economic decisions and the pursuit of greater efficiency by directives rather than by altering incentives.

(b) But we do not think that any of the economic reforms adopted thus far will have an appreciable effect on economic performance.

3. A decisive shift in economic policy cannot be expected until a new Soviet leadership arrives on the scene.

B. Even a succession leadership would be likely to choose to "muddle down" for a time rather than to confront head on the problems raised by slowing economic growth.

1. First of all, the new leaders might understandably hope that the difficulties of the 1980's would pass as the resources of Siberia become available, the enormous investments in agriculture begin to pay off, and labor force growth turns upward.

2. In any case, during the succession some time probably would pass before a consensus could be reached regarding important policy changes. Politically palatable and administratively expedient solutions are not as clearly available as they were during previous changes of the guard.

C. We do not think "muddling down" is tenable in the long run, however.

1. By the mid-1980's a new, well-established Politburo could be persuaded that more radical policies were necessary.

2. In broad terms, the Soviet Union could then move in two possible directions, each of which could have strikingly different implications for internal developments in the U.S.S.R. and for the Soviet Union's position in the world.

D. On the one hand, the new leaders might choose to impose austerity by all means available in order to support continued growth in military spending while finding the resources to increase investment.

1. Consumption would suffer, and the draconian measures of the past might be needed to keep the labor force working.

2. A regressive policy shift of this kind probably would also mean much less reliance on economic relations with the West and a tougher stance toward ideological deviation in Eastern Europe.

3. To justify austerity and appeals for self-sacrifice a new Soviet regime would probably have to evoke an image of heightened danger from the West or China.

E. Alternatively, the economic picture might look so dismal by the mid-1980's that the leadership might coalesce behind a more liberal set of policies. These policies could include major shifts in resource allocation, structural reforms, or both.

1. The leadership could, for example, reverse its economic policies and sharply increase the production of consumer goods in an attempt to elicit more productivity from the labor force.

2. Giving greater priority to the consumer almost certainly would mean a slowdown in the growth of military spending.

(a) The Soviets could moderate the growth in defense spending by economizing in ways that would have only modest impacts on the modernization of their forces—by stretching out selected weapons programs, for example, or by taking advantage of the limited direct savings made possible by arms control agreements.

(b) But a stronger rein on defense spending would be imposed only after a close look/review that gave assurance that such a slackening would not result in the loss of foreign policy gains that have, in their eyes, been made through the political use of military power—though such a change in policy might lessen their ability to seize opportunities in the future.

3. Some cutback in Soviet support to Eastern Europe is also possible as the economic situation deteriorates. With domestic oil production falling, for example, Moscow would not continue exports at their current level (nearly 2 million b/d) without doing serious harm to its own economy.

F. While a major shift in resource allocation would give some relief to the population and improve economic performance somewhat, a significant boost in economic growth cannot be achieved without major structural reforms.

1. These reforms would include much greater decentralization of decisionmaking, less reliance on central planning, and much more reliance on monetary and price incentives.

2. The introduction of structural reforms, however, might not be possible without resource reallocation in favor of the consumer and investment.

3. And even with such reallocations, many in the leadership will view any radical departure from prevailing centralized methods of organization and management as an erosion of Party control.

Soviet Defense Spending

I. Mr. Chairman, I now shall review what we know about Soviet defense spending and where we think it is headed.

BACKGROUND

A. The Soviet Union continues to treat information on its defense spending as a closely guarded state secret. They report only one piece of data about it—a single-line entry for "defense" in the published state budget. This figure clearly understates actual Soviet defense spending.

B. To compensate for this lack of published information about the actual costs of Soviet military activities, the Central Intelligence Agency develops detailed estimates of annual Soviet defense spending. Other analysts, both in and outside the Federal Government also attempt to estimate these expenditures.

C. There are two ways presently used to estimate how much the Soviets spend on their military.

1. One is the organizational modeling—or "building block"—approach, which identifies and enumerates the physical elements of the Soviet defense effort over time and applies direct cost factors to them.

2. The other method relies on deriving implicit defense costs from published Soviet economic statistics. This approach is used by most researchers outside of government.

3. All such estimates necessarily are based on analytical constructs that are subject to various errors and limitations. We use both methods. We find the building block approach more reliable and versatile, and we use it to form our detailed estimates. We also use the statistical method to provide overall checks on those estimates.

D. The estimates I shall discuss today were derived using this building block methodology. We believe estimates of Soviet military costs made in this fashion are especially well suited to the needs of U.S. policymakers. Apart from incorporating the best judgments of the Intelligence Community on the nature and size of the Soviet defense effort, our estimates also offer a detailed expenditure series that allows us to address key intelligence questions like:

1. The burden of defense on the economy of the U.S.S.R., expressed in real resource terms;

2. The comparison of U.S. and Soviet defense activities, as expressed in a common currency, U.S. dollars, not only in total but also in terms of the individual components of the defense efforts of each country;

3. The organizational, functional and geographical distribution of Soviet resources;

4. The cost and resource implications for the Soviets of alternative force levels—for example the potential savings associated with SALT and MBFR agreements and the costs of the incursion into Afghanistan.

PHYSICAL DATA

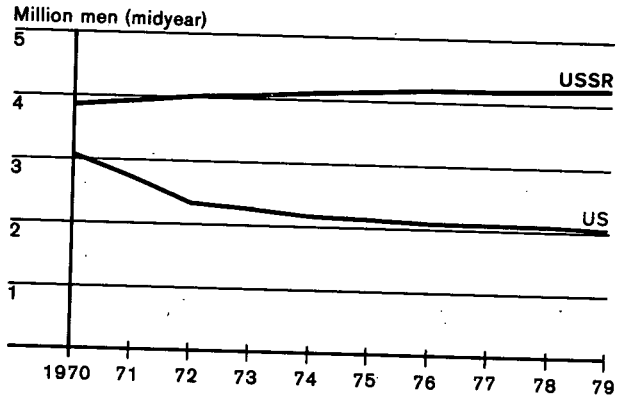
II. Before I discuss the dollar comparison of Soviet and U.S. defense activities, I want to note some of the physical data underlying our estimate.

A. The number of peop e estimated to be serving in Soviet military units is currently more than twice that of the U.S. military-approximately 4.3 versus 2.1 million men.

1. On the Soviet side, this comparison includes those in the U.S.S.R.'s Ground Forces, Air Forces, Air Defense Forces, Navy, Strategic Rocket Forces, the Border Guards of the Committee for State Security, and the national command and support structure.

2. It does not count over 800,000 men assigned to militarized security forces of the Ministry of Internal Affairs and military construction and transportation troops, who do not fill what in the U.S. would be considered national security roles.

US and Estimated Soviet Active Military Manpower



The USSR line excludes Internal Security Troops and construction troops—well over half a million men—who do not fill what in the US would be considered national security roles.

B. The Soviet order-of-battle of most major weapons systems also is greater than that of the U.S. For example:

1. The Soviets have about 350 more ICBM launchers than the U.S.; some 45 more ballistic missile submarines with about 350 more launch tubes; almost nine times as many strategic interceptors; about 500 more tactical aircraft; and about 200 more attack submarines.

2. The Soviet Union has about 755 MR/IRBM launchers and over 9,400 strategic SAM launchers. the U.S. has neither category of weapons.

3. The U.S. does have a numerical advantage, however, in some areas. We have, for example, over twice the number of long range strategic bombers and about 50 percent more major surface combatants (over 3,000 tons).

DOLLAR ESTIMATES

III. Turning to the dollar estimates, I shall summarize the dollar valuation of Soviet defense activities which we published earlier this year. In making these estimates, we use constant 1979 dollars. Some figures may differ a little because we now know actual U.S. outlays for 1979; in January we had only estimates.

A. We use dollar cost estimates to compare the size and trend of U.S. and Soviet defense activities in terms of resource input.

B. We derive these estimates of Soviet activities on the basis of what it would cost, using U.S. prices and wages, to produce and man a military force of the same size with the same numbers of weapons as that of the U.S.S.R. and operate that force as the Soviets do.

TRENDS

IV. Our comparisons of the relative costs of U.S. and Soviet defense activities show a continuation of the trends presented last year.

A. The horizontal bars show that the estimated dollar costs of Soviet defense activities exceed U.S. outlays for the 1970–79 period by approximately 30 percent.

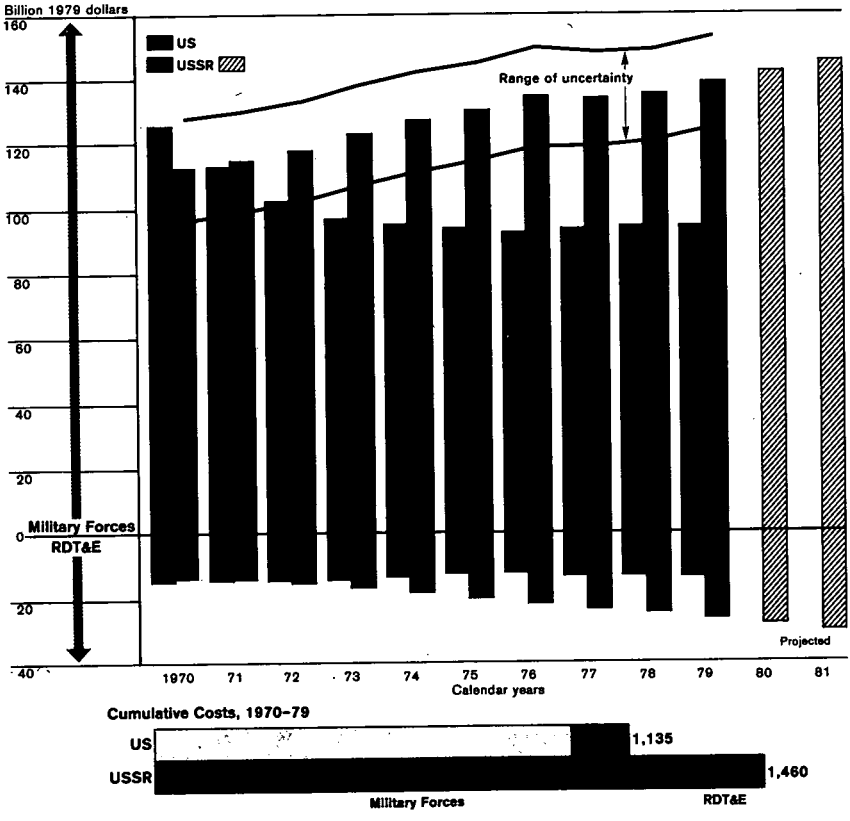
B. But, the trends are quite dissimilar.

1. The estimated dollar costs of Soviet defense activities grew steadily over the period at an average rate of about 3 percent, with upward trends in nearly all the major elements of the Soviet defense establishment.

2. U.S. outlays, on the other hand, fell from the beginning of the decade until 1976. From then until the end of the period, U.S. outlays grew slightly as increases in RDT&E, procurement, and operating costs offset continued declines in construction and personnel costs.

Total US and Soviet Defense Activities

A comparison of US outlays with estimated dollar costs of Soviet activities if duplicated in the United States



The dollar cost estimates reflect the cost of producing and manning in the US a military force of the same size and weapons inventory as the Soviet force and of operating that force as the Soviets do. The costs shown for military forces are investment and operating costs excluding pensions; they are best estimates, with possible error margins displayed. The costs shown for Soviet RDT&E are estimates derived in the aggregate, using a less certain methodology; because they provide only rough measures, they are shown separately from the dollar costs of military forces. The US defense costs are in terms of outlays based primarily on the Department of Defense Total Obligational Authority (TOA) in *The Five-Year Defense Program*, September 1979. The estimated dollar costs of projected Soviet defense activities for 1980 and 1981 are preliminary assessments and are subject to greater uncertainty than those for earlier years. Comparable US data were not available.

COMPARISON FOR 1979

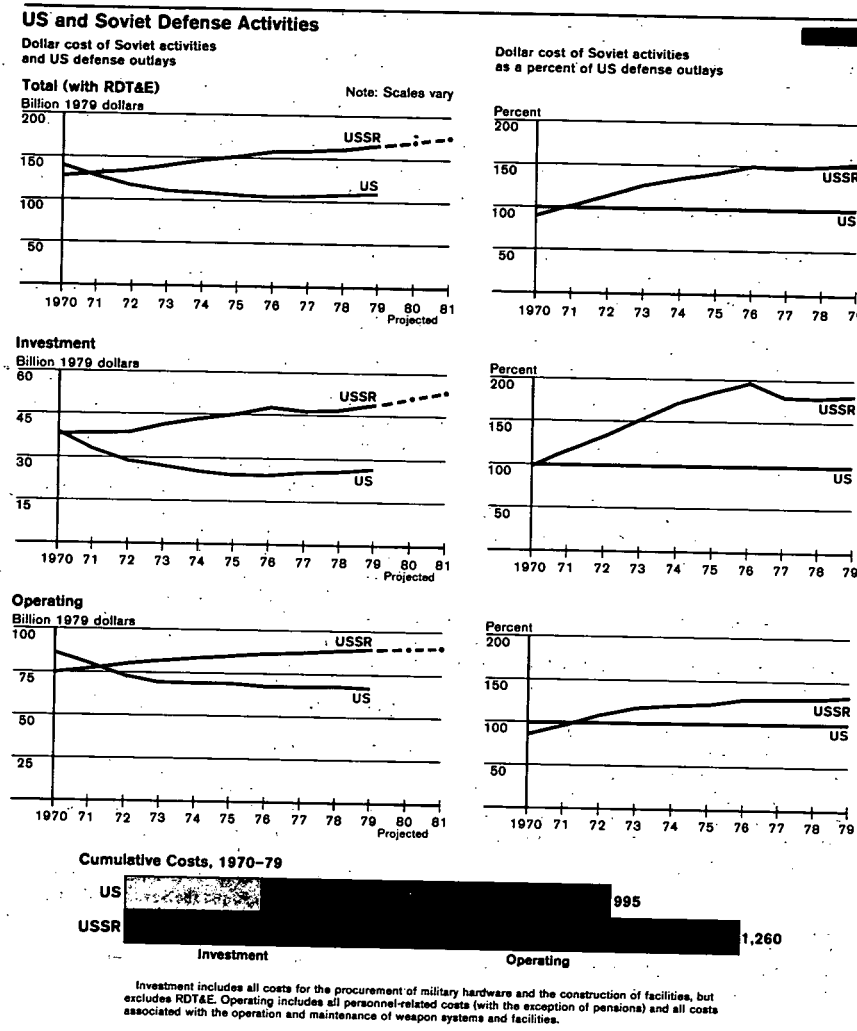
C. As a result of these diverging trends, the estimated dollar costs of Soviet defense activities have exceeded U.S. defense outlays since 1971. In 1979, the Soviet total was about $165 billion, approximately 50 percent higher than the U.S. outlays.

RESOURCE AND MISSION COMPARISONS

V. First we will compare the resources devoted to investment and operating costs.

A. The investment category covers the dollar costs of activities that reequip, modernize, or expand forces through the procurement of equipment including major spare parts, and construction of facilities.

1. For the 1970–1979 period the estimated dollar costs of Soviet investment were about 50 percent greater than U.S. outlays. Soviet investment increased continously over the period while U.S. investment declined sharply after the Vietnam buildup before turning up again after 1976.



Investment includes all costs for the procurement of military hardware and the construction of facilities, but excludes RDT&E. Operating includes all personnel-related costs (with the exception of pensions) and all costs associated with the operation and maintenance of weapon systems and facilities.

2. The estimated dollar costs of Soviet investment exceeded U.S. outlays by an increasing margin after 1970 and since 1975 has averaged about 80 percent greater each year.

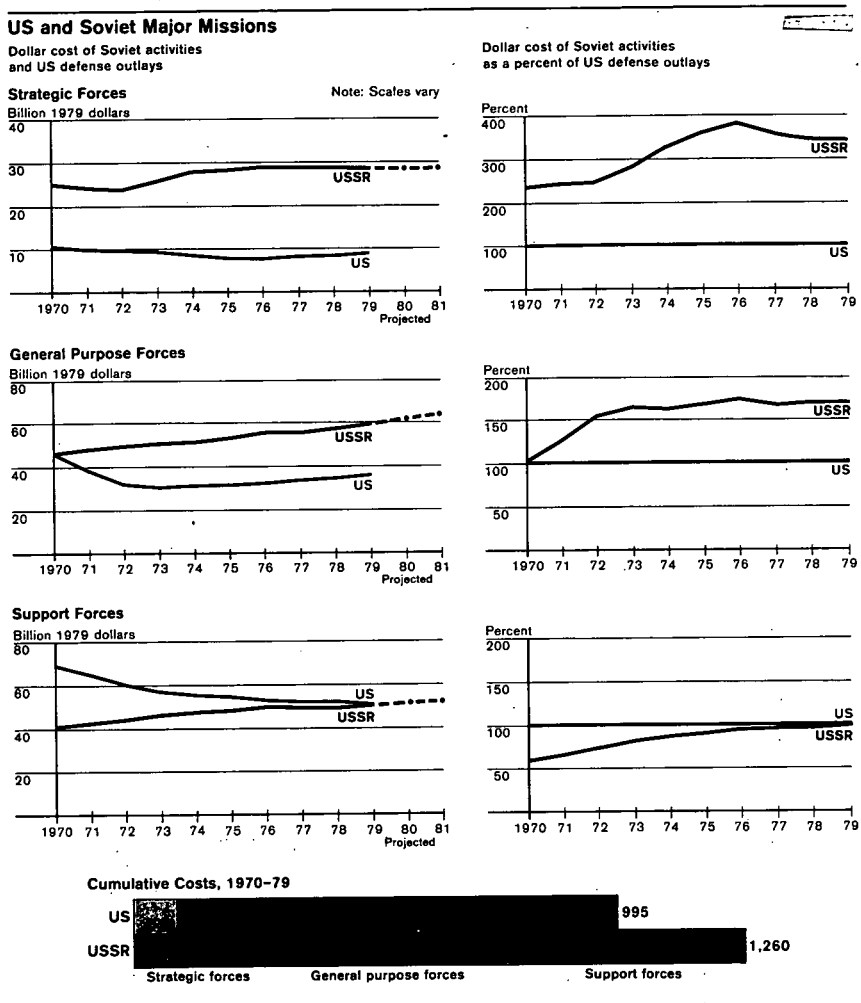
B. Operating costs are those associated with maintaining current forecs and include personnel costs.

1. For the entire period, the Soviet total was slightly greater than that for the United States.

2. However, the trends have been very dissimilar. The costs of Soviet operating activities exceed those of the United States by a widening margin after 1971. By 1979, the estimated dollar cost of Soviet operating activities was nearly 30 percent higher than U.S. outlays.

C. The next comparison is between the U.S. and Soviet military activities that support major missions.

1. The missions depicted on these charts accord with the guidelines outlined in the U.S. Defense Planning and Programming Categories (DPPC) document published by the Department of Defense. The dollar costs assigned to these missions, however, do not include RDT&E.



These comparisons use *US Defense Planning and Programming Categories* of November 1979, with minor adjustments made to attain comparability. Costs for pensions and RDT&E of both sides are excluded.

D. Strategic forces include all those assigned to intercontinental and peripheral attack, strategic defense, and strategic control and surveillance.

1. For the 1970–79 period, the estimated cost of Soviet activity for strategic forces was about three times that of the United States. In 1979, it was over three times larger.

E. The intercontinental attack forces include ICBMs, intercontinental ballistic missile submarines, and long-range bomber aircraft.

1. During the 1970–79 period, the dollar costs of Soviet activity were 70 percent greater than that of the US. In 1979, they were about 55 percent greater.

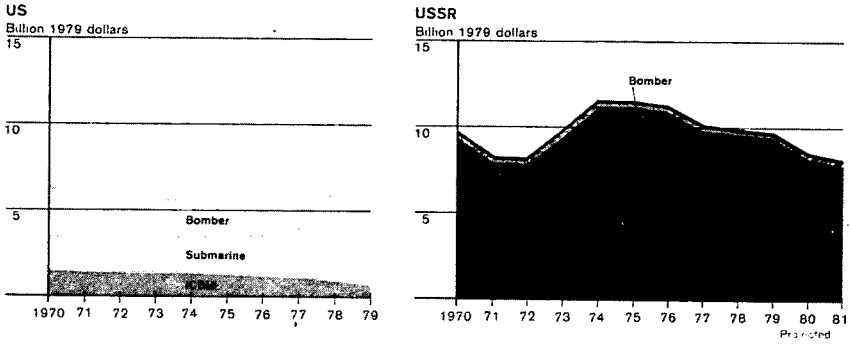
2. Within the respective intercontinental attack forces, there was a substantial difference in emphasis.

a. The dollar costs of Soviet ICBM programs over the entire period was four and a half times U.S. spending; the 1979 level was nine times that of the U.S.

b. For submarines with an intercontinental attack role, the dollar costs of Soviet programs were 65 percent greater than U.S. outlays for the entire 1970–79 period, although the dollar costs of both countries' activities were roughly equal in 1979.

US and Soviet Forces for Intercontinental Attack

A comparison of US outlays with estimated dollar costs of Soviet activities if duplicated in the United States



The intercontinental attack mission is defined according to the *US Defense Planning and Programming Categories* of November 1979, with minor adjustments made to attain comparability. Costs for pensions, nuclear materials for warheads, and RDT&E of both sides are excluded. The peripheral attack forces of the USSR are also excluded.

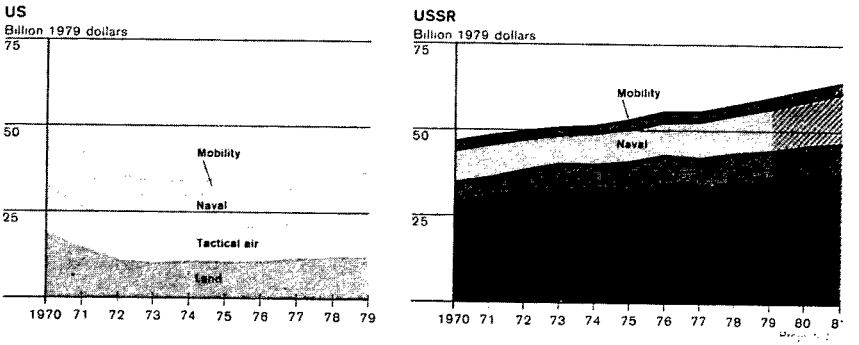
c. The U.S. has put more emphasis on its forces. Over the 1970–79 period, U.S. outlays for intercontinental bombers exceeded the dollar costs of comparable Soviet activities by over 400 percent and for 1979 by 350 percent.

F. Peripheral attack forces, for which the United States has no counterpart, accounted for about 15 percent of the total Soviet strategic mission over the 1970–79 period.

G. The general purpose forces include all those assigned to land, tactical air, naval, and mobility (airlift and sealift) forces.

US and Soviet General Purpose Forces

A comparison of US outlays with estimated dollar costs of Soviet activities if duplicated in the United States



The general purpose mission is defined according to the *US Defense Planning and Programming Categories* of November 1979, with minor adjustments made to attain comparability. Costs for pensions, nuclear materials for warheads, and RDT&E of both sides are excluded.

1. For the 1970–79 period, dollar costs of these Soviet activities were 50 percent more than corresponding U.S. outlays.

2. Land forces account for the largest share of both the Soviet and U.S. general purpose forces.

a. The estimated dollar costs of Soviet land forces increased steadily throughout the period. Outlays for U.S. land forces also have grown since the low point in 1973.

b. In 1979, Soviet activity for these forces—measured in dollar terms—was over two and a half times that of the United States.

3. The costs of general purpose naval forces (excluding multipurpose carriers, which in the DoD accounting system fall in the tactical air mission) were relatively constant for both countries over the period with some slight increases toward the end of the period.

a. In 1979, dollar costs of the Soviet activities were about the same as U.S. outlays.

b. If, contrary to DoD definitions, the costs of multipurpose carriers and their aircraft were included, U.S. outlays would be about 50 percent higher over the decade.

4. U.S. outlays for tactical air forces (including multipurpose carriers) were one-third more than the cumulative dollar costs of comparable Soviet activities for the 1970–79 period.

a. However, while the overall U.S. trend was downward until 1974 and displayed a slow growth after that, the estimated dollar costs for Soviet tactical air forces grew rapidly from 1970 to 1973 as they modernized their forces.

b. U.S. outlays in 1979 were almost 30 percent greater than the dollar costs of the Soviet forces.

c. If the costs of U.S. multipurpose carriers and their aircraft were excluded from the comparisons, the estimated dollar costs of Soviet tactical air activities exceeded U.S. outlays by over 40 percent for the decade.

RUBLE ESTIMATES

VI. This chart shows our latest estimates of Soviet defense spending in constant 1970 ruble prices.

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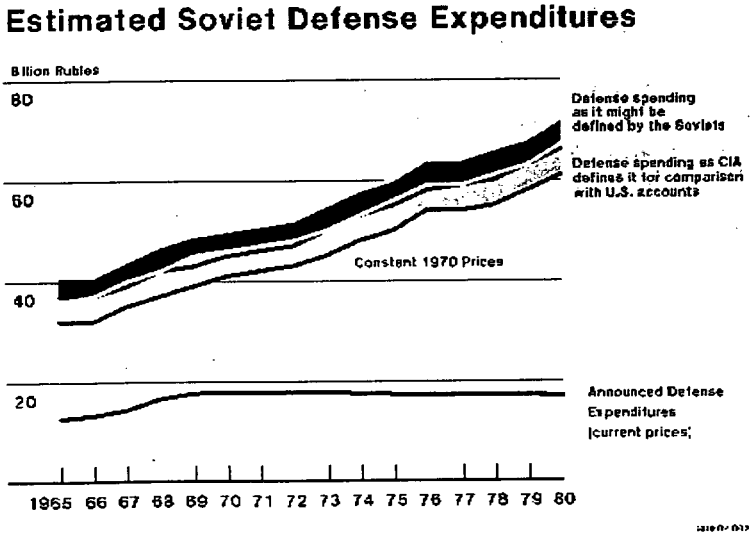

A. As defense is defined in the U.S., Soviet defense spending has grown at an average of 4–5 percent a year since at least 1965 and probably will reach 61–66 billion rubles in 1980. This is shown in the lower of the two bands on the chart.

B. If we use a broader definition that the Soviets apparently use, spending is some 5 to 6 billion rubles higher. This is shown in the upper of the two bands on the chart.

C. The single line below the two bands shows defense as reported by the Soviets in their annual state budget.

D. Defense spending probably accounted for 11 to 13 percent of Soviet GNP between 1965 and 1978—a roughly constant share over this period because defense and the economy were growing at about the same rate. More recently, though, defense spending continued to increase at about the same rate as in the past while Soviet economic growth declined to its lowest rate since World War II. Thus by 1979, the share of GNP devoted to the military probably increased by about one percentage point, to 12 to 14 percent.

SPENDING BY RESOURCE CATEGORY AND MILITARY SERVICE

VII. Soviet spending has reflected significant force expansion and, more recently qualitative improvements.

A. Since 1965, about half of Soviet defense spending has gone to investment in weapons, equipment, and facilities, almost one-third to operating costs, and about one-fifth to military research, development, testing, and evaluation (RDT&E).

1. RDT&E expenditures appear to have grown more rapidly than either investment or operating expenditures. We estimate that in 1980, RDT&E expenditures will be almost one-fourth of Soviet defense spending.

2. Defense investment has grown at nearly the same rate as total Soviet defense spending. The procurement of new weapons and equipment has been the major factor driving defense spending upward.

3. The operating category includes expenditures for personnel and for the operation and maintenance of the forces. As a result of a military manpower increase of more than one million men, total military pay and allowances grew by almost 40 percent between 1965 and 1980. During the same period, operation and maintenance costs doubled as the stock of Soviet military equipment grew and increased in complexity.

B. The next graphic shows our estimates of Soviet defense investment and operating expenditure by military service.

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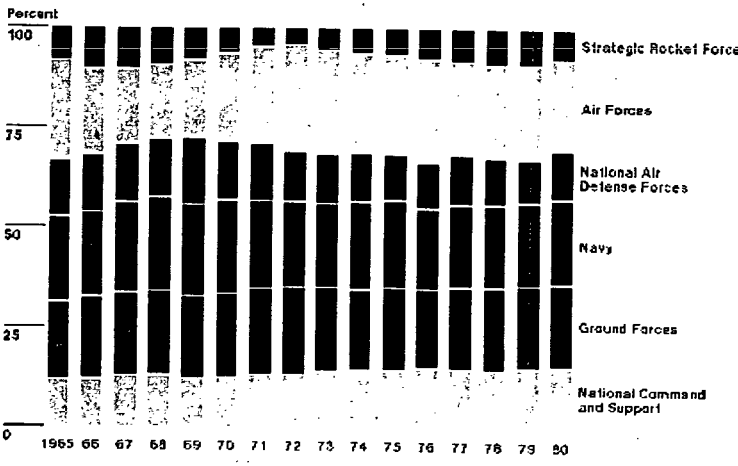
Shares of Estimated Soviet Investment and Operating Expenditures for Military Services



1. Since 1965, the Soviet Naval, Air and Ground Forces each have received about a fifth of defense investment and operating spending.

a. Ground and Air Forces' spending has grown in response to Soviet perceptions of the threat from China and the West and to an emerging military doctrine that reemphasized the possibility of large-scale conventional conflict.

b. Spending for the Naval Forces also has grown as a result of Soviet pursuit of balanced force modernization. Since the early 1970s, however, it has lagged somewhat behind the growth of overall defense investment and operating expenditures.

2. The National Air Defense Forces, which are responsible for defending the U.S.S.R. against attack by hostile aircraft and ballistic missiles, have received an average of a little less than 15 percent of defense investment and operating spending.

a. The National Air Defense Forces' share peaked in the late 1960s when the Moscow ABM system and the SA–5 SAM were being fielded. Expenditures for these forces fluctuated during the 1970s but are projected to increase substantially through mid-1980s as the Soviets attempt to shore up their defenses against low-altitude bomber and cruise missile attack.

3. The Strategic Rocket Forces, which operate land-based strategic missiles, have received an average spending share of less than 10 percent.

a. Spending for the SRF has fluctuated sharply, reflecting procurement cycles, first for the SS–9, SS–11, and SS–13, and then for the SS–17, SS–18, and SS–19 ICBMs and the SS–20 IRBM.

4. National Command and Support, which includes rear service and other general support functions, has averaged less than 15 percent of investment and operating expenditures since 1965.

a. The increased expenditures during this period reflect growth in the size of the Soviet armed forces and of the central Ministry of Defense apparatus, as well as the increased complexity of supporting more advanced weapon systems.

INDICATORS OF FUTURE DEFENSE SPENDING

VIII. These are the trends in Soviet defense spending that we have seen over the past 15 years. As I mentioned earlier, we see no sign that the economic slowdown will affect defense spending between now and 1985.

A. To identify any potential adjustments the Soviets might be making in their defense spending we are monitoring a number of indicators of future defense programs. All of these indicators suggest that defense spending will continue to grow at about its historic rate.

B. Thus the available evidence indicates that, if the Soviets do not alter their current plans, defense spending probably will grow over the next five years at or near the rate of the past 15 years.

1. If economic pressures became particularly severe, however, the Soviets could moderate this rate of increase in defense spending by economizing in ways that would have only modest impact on the modernization of their forces—by stretching out selected weapon programs, for example, or by taking advantage of the limited direct savings made possible by arms control agreements. This would have only a slight effect on the rate of growth of defense spending.

C. In the longer term, growing economic difficulties may push the Soviet leaders to reexamine their plans with a view to reducing the growth of defense spending.

1. But they will have to weigh their economic concern against their perception of future military requirements and their strong sense of the utility of military power in advancing Soviet policy objectives.

D. Even if the Soviets moderate defense spending, we think it highly unlikely that, even in the longer term, economic difficulties will force a reversal of the Soviet leaders' longstanding policy of continuing to improve their military capabilities.

SOVIET MANNING PRACTICES AND ADVANCED TECHNOLOGY

Mr. Chairman, I shall conclude with some remarks about the way the Soviets will match the competence of their conscript force with the increasingly sophisticated weapons.

A. Unlike the U.S., the Soviets rely on conscripts to fill the majority of their military manpower requirements. Approximately 70 percent of the Soviet force is made up of short-term conscripts with minimal technical skills. The Soviet military system has been structured, however, so that these conscripts can effectively operate and maintain the modern weapons systems in the Soviet inventory.

B. Soviet weapons designs generally have eased potential maintenance problems by emphasizing the concepts of reliability, standardization, and limited modification from one generation of weapons to the next.

1. As I mentioned, Soviet designers have displayed a penchant for using proven components and existing technology whenever possible in the development of succeeding generations of weapons.

2. This incremental approach to weapon system improvements minimizes requirements for retraining maintenance specialists, because they continue to work with familiar technologies and components.

C. Soviet training and maintenance practices complement this design philosophy.

1. Conscript training—both in the classroom and on the job—focuses on developing skills in narrowly defined specialties. Technically trained junior officers and extended servicemen closely supervise conscript activities in accordance with operating and maintenance norms that leave little to the discretion of unit personnel.

2. These norms are detailed in clearly written "cookbook" instructions which require only that the conscript be able to read and understand the Russian language to accomplish his duties.

D. Stress on component replacement, rather than repair, at the unit level also serves to minimize shortcomings in the training of conscripts.

1. Complex maintenance is performed in specialized repair facilities at the rear echelon.

2. This allows for the concentration of technical expertise and repair machinery where they can be used most effectively in peacetime.

E. We do not believe that the Soviets will make sweeping changes to their traditional operations and maintenance philosophy or manning practices in order to accommodate the increasing complexity of their new weapons systems.

1. The conservatism of the Soviet weapons design philosophy, specialization of military tasks, rigid maintenance norms, and reliance on technically trained junior officers should continue to buffer conscripts from the effects of technological advances.

2. In addition, recent analysis indicates that the average educational level of conscripts has risen significantly in recent years and probably will continue to rise.

The Chinese Economy

I. Mr. Chairman, in the ensuing remarks I will address China's current political and economic situation and prospects for the Chinese economy in 1980 and beyond.

II. Regarding the political situation, Mr. Chairman, I can say that since the beginning of this year, the Chinese have made major progress toward preparing for a smooth succession to the Deng-Hua leadership.

A. The Chinese Communist Party's Fifth Plenum held in late February represented a personal triumph for Deng Xiaoping.

1. The Plenum reestablished the Central Committee Secretariat which had been dismantled during the Cultural Revolution. This executive organ was once described having a broader reach than any other party or government organ. The Secretariat should help assure future collective decisionmaking, and, a plus for Deng, the membership consists of people who basically share his economic views.

2. The dismissal of four Politburo members considered to be leftist holdovers strengthened Deng's hand and removed a symbol of resistance to his policies. Their fall also helped clear the way for reform among rank-and-file members.

B. At the National People's Congress which began 30 August, major leadership changes were made, which installed a Deng protege as Premier and economic pragmatists, like-minded to Deng, to key positions. These shifts imply that the realistic economic policies of the past 1½ years should continue.

1. Deng himself stepped down as Vice Premier after having relinquished the military chief of staff post earlier this year. Deng nonetheless will continue to play a major role in policy formulation by virtue of his position as party Vice Chairman.

2. Hua, having been implicitly criticized for failures of the original post-Mao modernization plan, relinquished the premiership to Vice Primier Zhao Ziyang. Hua meanwhile retains his title of Party Chairman, but his access to the levers of power have been so circumscribed, that he may turn out to be no more than a figurehead leader.

3. Other senior vice premiers followed Deng's lead in surrendering some of their responsibilities.

4. Top economic planners in harmony with the reformist views of Zhao Ziyang were appointed to head the major economic planning bodies.

C. Despite the recent achievements in preparing the succession to a younger leadership, there are still pressing issues that will bear directly on the prospect for political stability and successful long-term modernization of the economy.

1. Demaoization: The cultural Revolution and Mao Zedong's responsibility for actions taken at that time remain sensitive issues.

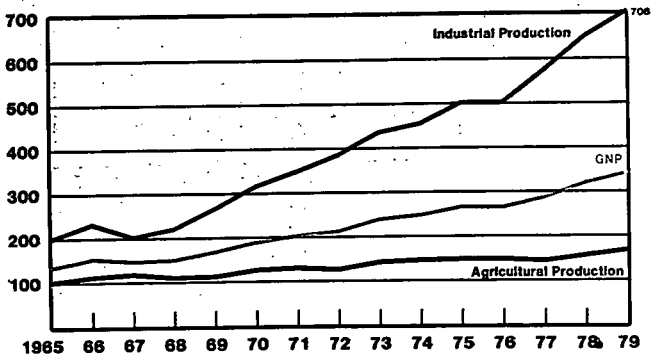
2. Party reform: During the Cultural Revolution (1966–1976) party discipline was lax. For millions of party members who joined at that time mass movements, innerparty factionalism and freedom to operate with a minimum of control from above were the accepted norms of party work. Now those party members, who prospered under Mao and still adhere to Maoist thought, are resisting party reforms which require stricter discipline and that party members be both "red" and "expert" (i.e. that they develop the technical skills necessary to promote modernization).

D. In turn, the permanence of the succession arrangements—both the new generation of leaders and the greater emphasis on institutions—will depend on whether the leadership can point to positive results from its modernization program.

III. On the domestic economic front, China has abandoned its overambitious program for rapid modernization and embarked on a more moderate course of readjustment and reform.

China: GNP, Industrial Production, and Agricultural Production, 1965–1979

(1957=100)



Unclassified

A. In 1979, the Chinese began to deemphasize heavy industry or producer goods and encourage light industry or consumer goods.

1. Beijing's reordered planning priorities resulted in growth rates of 9.6% for light industry and only 7.7% for heavy industry, in marked contrast to past years when heavy industry has led the way. Industry as a whole rose 8.5%.

2. In heavy industry, because of the planned slowdown in investment spending, production of steel increased only 2 million tons, reaching 34 million tons last year.

3. In light industry, production of consumer durables such as TVs and radios surged, a reflection of government policy to increase the availability of consumer goods.

B. Beijing is also spurring output in agriculture. China's agricultural sector remains backward but the past year and one half have brought improvements in food supplies and in industrial corps.

1. To increase agricultural productivity, the state raised the prices it pays peasants for farm products, while lowering the costs of fertilizer, pesticides and other inputs.

2. Beijing also lowered taxes on farm income.

3. And the government has encouraged more private activity in agriculture, allowing an expansion of private farm plots and rural free markets.

4. As a result, agricultural output for 1979 increased by 8.6% over 1978 levels.
5. Food grain production was up by 27 million tons in 1979 to a record 332 million tons. This compares with 179 million tons in the Soviet Union.
6. Grain imports set a new record of 11 million tons, with 4 million tons coming from the U.S.—a measure of Beijing's efforts to increase urban food supplies.
7. However, with current population over 1 billion, per capita grain availability is only slightly higher than levels that prevailed in the late 1950s, and overall food supplies remain little more than adequate.

C. The increased availabilities of food and consumer goods have raised average living standards although the gains appear to be largely a restoration of real income losses suffered during 1966–76.

1. China's 100 million urban workers view their living standards today as, at best, no better than in the late 1950s. That perception, plus an estimated 10 to 20 million urban unemployed, hold the seeds of social discontent.
2. Wage increases announced in late 1979, and based on the formula "to each according to his work", are only slowly being enacted.
3. Inflation continued to be a problem. The official cost-of-living index showed a 2% increase in 1979. This is high by Chinese standards and official indexes are known to understate actual price increases.

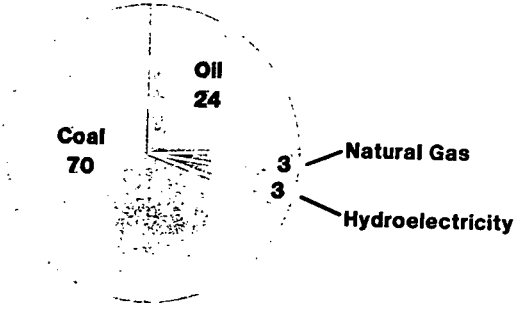
D. Beijing realizes that investment—34% of national income in 1979—remains too high, squeezing the consumer.

1. During much of the 1970s, too many, often ill-conceived, projects were started and shortages of fuels, transport and materials made it impossible to complete many of them.
2. Beijing has tried to reduce investment by curbing allocations from the state budget.
3. But local entities found other funds to continue the high rate of investment spending. This led to an unexpected increase in 1979 investment spending which contributed to the 1979 budget deficit.

E. Energy has been one of the foremost constraints to faster economic growth.

7.

China: Production of Primary Energy, 1979
Percent



Total
653 Million Metric Tons
Coal Equivalent

Unclassified
PHL801.004

1. Beijing continues to pour domestic and foreign capital into the coal, oil, and hydro-power sectors; however, many energy projects will not be completed until the second half of this decade.

2. Until then, energy output will continue to grow slowly.

a. Coal output, which accounts for 70% of total energy supplies, increased just 2.8% in 1979.

b. Oil production, which makes up 24% of total energy supplies, grew by only 2%. This is attributable to a levelling off of output at established fields, particularly at the giant Daqing oilfield, and technical problems inhibiting output at new fields.

c. Output of natural gas and hydropower increased more rapidly than oil and coal, but since they represent only 6% of total energy supplies, they were not enough to make a difference in the total picture.

3. Total energy supplies of 652 million tons of coal equivalent (8.8 million barrels per day oil equivalent) in 1979 were further tightened by exports of 16 million tons of crude oil and petroleum products and 4.5 million tons of coal—mainly to Japan—to earn foreign exchange. Oil exports to the U.S. were initiated, reaching 700,000 tons in 1979.

F. To recapitulate, Mr. Chairman, Chinese domestic economic policies emphasize light industry over heavy industry, consumption over investment, and focus on spurring output in agriculture and energy—all part of their overall plan of readjusting imbalances in the economy.

G. Along with readjustment, they are pursuing a policy of reforming economic management.

1. Central control over commodity pricing and distribution and some aspects of the labor market are being relaxed.

2. A substantial number of enterprises are being allowed to keep part of their profits normally turned over to the state.

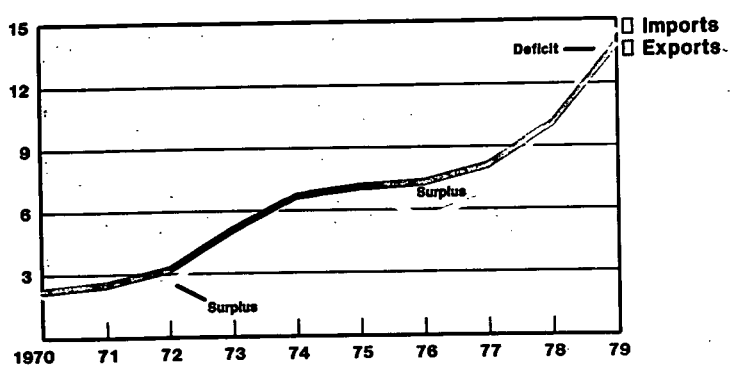
3. The reform movement has met with resistance from entrenched bureaucratic interests in government and in the party. Deng, Zhao and others, however, seem determined to push ahead.

IV. The foreign trade sector continued its rapid growth in 1979. There were major changes in foreign trade organizations, import priorities, and financial practices—all aimed at making imports of western technology cheaper and easier, and the impact of imported technology more pronounced.

A. Beijing ran an $800 million trade deficit last year, with exports up 37% to $13.7 billion and imports up 41% to $14.5 billion.

1. On the export side, textiles, with large volume increases, and petroleum, with both volume and sharp price increases, led the way.

China: Trends in Foreign Trade, 1970-1979



2. As for imports, cotton purchases surged to supply the rapidly growing textile industry, while steel imports—by far the largest component of the total—fell sharply in second half 1979 as domestic priorities shifted.

3. China has continued to run a trade surplus in agriculture, exporting meat, fish, fruits, and soybeans to nearby Asian countries and importing grain and cotton, mainly from the U.S. China runs a deficit in non-agricultural trade.

B. Beijing has moved to beef up dangerously low foreign exchange reserves.

1. More than $27 billion in commercial and government-backed loans were lined-up in 1979 although Beijing drew down only $1 billion of these. The credits—most of which are tied to project purchases from the lending countries—were extended by every major industrial country.

2. China was able to turn the $1.1 billion trade deficit in first half 1979 to a surplus in the second half.

3. We estimate Chinese foreign exchange reserves, excluding gold, reached about $2 billion (equal to two months imports) by yearend 1979.

C. Beijing's imports of Western equipment and technology in 1979 shifted away from heavy industry (especially steel) to energy, transport and communications, and light industry.

1. Most negotiations for whole-plant deals were suspended for a 4-month period in early 1979 as Beijing redefined its import priorities and reassessed its financial resources.

2. By late 1979 contract signings were slowly getting back on track, but by yearend they amounted to only $2 billion, compared to the record breaking $8 billion in 1978.

3. Purchases of technology in 1979 began to reflect a more practical approach. Beijing began seeking western help in modifying existing facilities whenever possible rather than buying major new plants.

D. China's foreign trade policies underwent major changes in 1979.

1. A joint venture law, permitting up to 100 percent foreign ownership, was approved in July 1979.

2. More than 100 compensation deals and 2,000 processing arrangements were concluded in 1979—mostly small, and for light industry. Under these agreements western equipment and technology is brought into China in return for Chinese goods and services.

3. In the southern provinces of Guangdong and Fujian, special zones are being set up to encourage foreign investment, especially by overseas Chinese in nearby Hong Kong and Macao.

4. To help facilitate these changes, decisionmaking authority in certain foreign trade matters—once the exclusive reserve of organizations under the Ministry of Foreign Trade—has been delegated to provincial—and municipal-level authorities and export-oriented firms.

E. China has shown its intention to expand its role in the world economy by assuming membership in several international economic organizations.

1. Last April, Beijing took over the "China" seat in the International Monetary Fund, replacing Taiwan.

2. In May, China joined the World Bank, International Development Association, and International Finance Corporation.

3. Beijing may eventually join the General Agreement on Tariffs and Trade, and the Asian Development Bank.

V. Now, Mr. Chairman, I would like to turn to China's economic relations with. the United States.

A. Last year US-China trade hit $2.3 billion, with a $1.1 billion U.S. surplus In 1978, trade was $1.2 billion with a $500 million balance in favor of the U.S., or about one-half.

B. The strong U.S. export performance last year resulted from a surge in Chinese imports of U.S. cotton, grain, metals, miscellaneous machinery, and instruments. EXIM Bank financing has not played a role in U.S. exports thus far because Beijing only recently became eligible for EX–IM funds. On the other hand, PRC exports to the U.S. were probably held down by U.S. textile quotas.

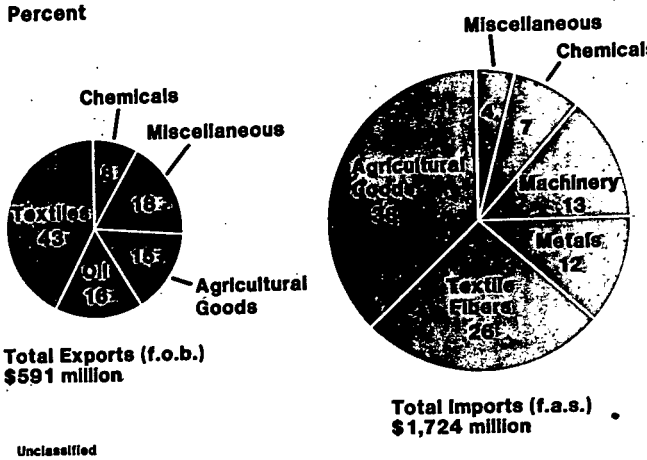
C. The U.S. still is hampered by the under developedstate of banking relations with the PRC; U.S. banks have yet to establish branch offices on the mainland.

D. Members of COCOM have given tacit approval to a relaxation of restrictions on high technology exports to China. Computer and technology sales soon to be approved will add to U.S. exports in 1980 and 1981.

E. Most-favored-nation status probably helped Chinese exports to the U.S.

China: Trade with the United States, 1979

Percent



Unclassified

VI. On Sino-Soviet relations, Beijing has sharpened its anti-Soviet position in the past year.

A. In response to Soviet actions in Afghanistan, the Chinese indefinitely postponed the second round of political negotiations with the U.S.S.R. which had been expected to open last spring.

B. Bilateral trade, which has been declining in importance for some time, is expected to fall in 1980 to under $500 million.

VII. Turning to China's economic performance in 1980, Mr. Chairman, Beijing has set modest goals in keeping with the policy of readjustment and consolidation.

A. The 1980 economic plan calls for output in heavy industry to rise just 4½ percent compared with last year's 7.7 percent growth. Light industry is to expand by 8 percent and agriculture by 3.8 percent—a respectable showing on top of excellent growth in 1979. Nevertheless we expect grain imports of up to 13 million tons.

B. On the foreign side, two-way trade is planned to grow at 11 percent—down sharply from last year's rate.

C. Beijing is hoping that energy conservation will enable it to meet growth targets for 1980.

1. Last year despite only 3 percent energy supply growth, GNP rose by 7 percent.

2. Beijing is expecting little or no increase in total energy supplies in 1980, but it is counting on more successful conservation efforts.

D. We believe the Chinese stand a good chance of making most of their goals for 1980, despite scarce energy and raw materials supplies.

1. In first half 1980, industrial performance was better than the Chinese leadership had expected, putting the economy well on the road to plan fulfillment.

2. Foreign trade also has done surprisingly well, with China's global exports jumping 36 percent in first half 1980. And Beijing was able to maintain a $1.2 billion trade surplus.

3. Based on first half grains, we estimate real GNP growth will be 6 percent in 1980.

E. U.S.-China trade should hit $4 billion in 1980, with a hefty $2 billion U.S. surplus. U.S. exports to China should increase by 75 percent in 1980 to more than $3 billion. PRC exports to the U.S. are also expected to be up sharply, to more than $1 billion.

VIII. In 1981–85, Mr. Chairman, we expect Chinese GNP growth to range from 5 percent to 6 percent.

A. The current readjustment program will be extended, perhaps through 1983 or 1984.

1. This implies around 6 percent growth in industrial output during 1981–85, with higher rates for light industry than heavy industry.

2. Growth in heavy industry will slow to about 4% based on stepped-up government efforts to curb capital construction and reduce unwanted steel inventories.

B. In the energy sector, primary energy supplies are expected to expand by only 3% annually in 1981–85, compared with 9% annual growth in the 1970s.

1. Oil exports are not likely to increase significantly and could decrease.

2. Coal exports on the other hand should continue to climb.

3. And the availability of primary energy to domestic consumers will not keep pace with demand. However, conservation efforts, shutting down inefficient users of energy and the shift to less energy-intensive light industry, could help Beijing sustain the estimated 5% to 6% GNP growth rate.

4. Nevertheless, chronic shortages of electric power brought on by insufficient generating capacity could continue to cut into industrial production, even if availability of raw energy appears adequate.

C. We believe growth in agriculture will pick up substantially, to around 4% to 5% per year.

1. The revised goal for grain production—400 million tons in 1990—implies average annual growth of 1.7% in 1981–1985, compared with a 3.7% average over the last decade.

2. Livestock and industrial crops are expected to grow more rapidly than grain output.

D. China will likely continue to incur small trade surpluses or deficits for the next several years, now that foreign exchange reserves are restored to acceptable levels.

1. Despite levelling off of the volume of oil exports, price increases will yield higher revenues and provide the basis for capital imports.

2. Exports of textiles should continue to grow about 20% to 30% yearly in value terms.

3. These categories account for roughly one-half of total Chinese exports thereby guaranteeing increases in foreign exchange earnings in the coming years.

4. Import growth will be fairly slow, a reflection of Beijing's efforts to curb heavy industry, and the more gradual approach to technology imports.

E. We expect China's unemployment problem to worsen, largely because of demographic factors beyond the government's control.

1. Even with population growth curbed to around 1% per annum (which by itself would be a significant government achievement), the labor force will grow at twice the rate because youth born during the baby boom of the 1960s are now reaching working age.

2. On the demand side, the growth in urban job opportunities is likely to slow from the excellent performance of 1978–1979.

3. Rural areas apparently now provide even less of a future for job seekers than the cities.

4. Beijing's longstanding policy of promoting urban-to-rural migration as a way of easing urban unemployment, shows signs of failing.

5. Urban youth the government sent to the countryside have been returning and rural adult men are coming to the cities to find work.

F. Now, Mr. Chairman, I would like to turn to the implications of China's future economic performance for U.S.-China trade. With regard to U.S. exports, U.S. businessmen and farmers should benefit from Beijing's efforts to increase the availabilities of food and consumer goods. On the import side, growth in PRC sales to the U.S. will continue to stem from textiles and other light manufacturers.

1. Beijing expects to import 11-13 million tons of grain over the next few years and is likely to continue to rely on the U.S. to meet fully one half of its needs.

2. Demand for U.S. cotton is also likely to remain strong.

3. Beijing is apt to rely on the United States for high technology and machinery and equipment.

4. In view of the possibility of Chinese domestic energy shortages, renewed emphasis on oil exploration and development bodes well for future sales of US oil drilling equipment.

5. China's efforts to boost earnings from tourism may generate increased demand for passenger aircraft, mainly from the United States.

6. Textiles are likely to continue to account for over 40% of U.S. imports from China over the next few years.

7. With increases in domestic oil production having tapered off and much of China's remaining oil supply tied up in contracts with other countries, large volume increases in oil exports to the U.S. are unlikely. However, China's export earnings should continue to benefit from oil price increases.

8. Consumer goods such as watches, calculators, and bicycles may begin to make headway in the U.S. market if China is successful in its attempts to improve its quality control and marketing techniques.

IX. What does all this mean?

A. The past four years have been a period of tremendous change for China.

1. Politically it has meant replacement of nearly all of Mao's extremist and disruptive domestic and foreign policies with a pragmatic and comprehensive modernization program, and a bold new foreign policy. These developments have been accompanied by a sweeping purge of leftist leaders at all levels of the Chinese party and government—they have been replaced by officials who are more loyal to the leader identified with all these measures, Deng Xiaoping.

2. For economic policy it has meant a complete turning away from highly ideological leftist policies to extraordinary pragmatic policies with very little ideological content.

3. Just how far the Chinese are willing to go in their efforts to revitalize and reform their economic system is not yet clear. But it is clear that ideology is much less binding than only a year or two ago. Premier Zhao Ziyang has been quoted as saying that Marxism requires only two things: state ownership of the means of production and payment according to work done; as long as these conditions are met, Marxist principles are upheld.

4. Zhao's analysis obviously gives the Chinese a lot of freedom in reshaping their economy. And speeches at the National People's Congress, which began on August 30, indicate that Beijing intends to push ahead with a wide range of economic reforms.

B. Carrying out these reforms, however, is further complicated by Beijing's efforts to eliminate the large number of bottlenecks and imbalances in the economy that are the result of more than a decade of leftist policies and a near paralysis in economic decisionmaking.

1. About a year and a half ago, in the spring of 1979, the Chinese leadership made some very hard policy choices, completely changing the focus of economic policy. Now the emphasis has shifted away from steel and machine building toward agriculture and light industry; the rate of investment is being reduced to allow for more rapid growth of personal consumption; and foreign trade is being assigned a more important role in the development process.

2. In general, Beijing is more interested in productivity and efficiency, not mindless production of goods for which there are no markets. This has also meant that the Chinese are looking more carefully at the demand for commodities and as a result are experimenting with competition in the market place to decide what is to be produced and who should produce it.

C. The search for higher productivity and greater efficiency has carried over into the foreign sector as well.

1. Foreign trade policy more than ever before embodies the idea of comparative advantage. And the Chinese are making great efforts to gain larger shares of foreign markets.

2. One area where change in development strategy has had a great impact is imports of foreign technology and equipment. On one hand the reduction of investment in 1979 and 1980 has reduced demand for foreign technology and equipment; on the other hand, the new stress on productivity and efficiency has drawn attention to China's inability to rapidly absorb large quantities of foreign technology.

3. Now, Beijing sees that imported technology, while still important, is not really an answer to its economic problems. The new 10-year plan for 1981–90, when the drafting is completed, will reflect this realization that the foreign sector can contribute only modestly to China's economic performance during the 1980s.

D. All of these changes are controversial; inevitably they are going to generate heated debates within the party and government.

1. They will provide an environment for policy making that will further strain political skills and institutions. And in this sense they increase the probability of political instability.

2. At the same time, however, as pragmatic economic policies begin to pay off, enlarging the economic pie and perhaps reducing conflicts over resource allocations, political stability may be enhanced.

3. For the time being, there is no way to foresee which of the two tendencies will dominate, or if an uneasy equilibrium will emerge.

E. All of this adds up to a great deal of uncertainty for U.S. policymakers and businessmen.

1. It is fair to say that the prospects for political stability and economic progress have never before looked so good.

2. But the next few years will be stressful ones for the Chinese, both politically and economically, as Beijing attempts to deal with new problems in new ways.

Admiral TURNER. Basically, the economy of the Soviet Union that we've come to describe to you today is an economy which is losing its momentum. And yet at the same time, the emphasis on military programs within that economy continues very strong. In short, the picture has not changed very much from that which we've given you in years past.

Let me touch, then, very briefly, on the state of that economy; but more importantly, talk at somewhat greater length on the difficult choices that the state of the economy poses for the Soviet leadership over the years ahead.

In terms of performance, overall rate of economic growth has declined steadily since the sixties, as shown on this chart.[1]

The first bar shows that, in the decade of the sixties, there was an average growth of roughly 5 percent per year in GNP. The second bar, shows that for the decade of the seventies it has dropped to an annual average of a little below 4 percent. But here, we show it broken down into the first half of the seventies, and you can see how it's stepped down to just about 3 percent in 1975–79. In 1979 it was less than 1 percent. A major crop failure in 1979 and subsequent U.S. export restrictions have grabbed most of the headlines in 1979, but industry, the traditional growth leader, also turned in its worst showing since the end of World War II. Industrial production increased by only 2.2 percent in 1979.

SLOWDOWNS IN ECONOMIC GROWTH

Senator PROXMIRE. Let me just interrupt for a minute.

This steady reduction as the years go on—does that reflect primarily a drop in productivity? Or is there some other element here?

Admiral TURNER. It's the combination of events. The rate of growth in investment is dropping. There has been a decline in productivity. For example, their investments in raw material extraction in Siberia are becoming more expensive. And I have some charts to go through both of those in some detail.

But, in short, the very low rate in 1979 was a combination of this low rate of industrial growth—2.2 percent—and a slump in agriculture.

Senator PROXMIRE. One more question. That shows a persistent decline over three different periods. Prior to 1961, was the growth of the Soviet economy higher than 5 percent?

Mr. DIAMOND. Six percent in the fifties.

Senator PROXMIRE. Is this kind of an adjustment from so many countries that were hit awfully hard in World War II—Germany

[1] See fig. I, p. 106.

and Western Europe, for instance—is that a pattern, enormous growth in the fifties and then some falling off?

Mr. DIAMOND. Only in part. The belligerents, specifically Japan and Germany, got rolling in the early fifties and kept that momentum, especially in Japan, continued right on into the early seventies—very high rates of growth. Germany's average annual rate of growth was higher in the sixties than it is in the seventies. But you didn't have the sort of deceleration that you observed in the Soviet Union, either for Japan or Germany.

France performed better in the sixties than it did in the fifties. England also grew faster in the sixties than in the fifties but slipped substantially in the seventies.

Senator PROXMIRE. What I'm trying to get at is that you wouldn't interpret this as primarily a reflection of an adjustment to the enormous effect of World War II?

Mr. DIAMOND. No. This is not consistent with what has happened in the developed West.

Admiral TURNER. Over the eighties, it's going to continue to decline for a number of reasons: prospective decline in the oil output, falloff in the rate of growth of investment and the rate of growth of the labor force, a sharp rise in overall costs resulting from a rapid depletion of the easily accessible raw materials, and increasing difficulty in extracting and processing new deposits of fuel and other raw materials, shortfalls in the production of basic industrial products that have become serious bottlenecks to the economy—steel, cement, fertilizer, for example.

The chart[2] shows that in the sixties there was at least a positive rate of annual increase in productivity. In the seventies, it actually turned negative. This failure of the Soviet system to generate productivity gains on the scale of those equivalent in the Western countries is probably their biggest economic headache.

Against this background of economic difficulties, they're now trying to agree in the Politburo on a 5-year plan. Some exceedingly difficult decisions face them, in our view. In a nutshell, the problem is that these increments to national output are not sufficient to permit simultaneous achievement of their four basic objectives. The first of these is to increase investment enough to maintain forward momentum in energy production and to remove bottlenecks in transportation and key industrial sectors. Second is continued growth in defense spending. Third is increased economic support for their Eastern European allies, and the fourth is some substantial increase in consumer welfare.

The tough choice, moreover, has got to be made in this period when major changes in leadership loom on the Soviet horizon.

SOVIET DEFENSE BURDEN

Senator PROXMIRE. May I ask; is there any indication at all that the Soviets' increased investment in the military has had an adverse effect on their economic development?

Admiral TURNER. I think you have to say that when you are putting 12 to 14 percent of your gross national product into the

[2] See fig. II, p. 107.

defense sector, you have clearly denied yourself an opportunity to put it into investment, and of course into consumption. And I think one of the themes of this briefing is that the lack of their willingness to put into consumption is hurting their productivity.

Senator PROXMIRE. Not only into consumption, but also into industrial investment. After all, you can tie up limited investment resources by building up military forces. You can't build up your industry and your agriculture at the same time.

Admiral TURNER. Absolutely not. They are overcommitted in their machine-building industry. They have demands for much more modernized equipment for oil-well drilling, for industrial production, and so on, than they can possibly produce at this time. And yet, their continued investment in the military is very substantial.

So, I think the answer has to be yes; it does deprive them of the opportunity of putting that investment elsewhere. And, of course, in the eighties, the maintenance of the military is going to be a real factor for them, because the rate of the growth of population will slow.

They are going to do this in a period of leadership change. Brezhnev is 73. As you know, most of the rest of the members of his Politburo are around that age, and a lot depends, as far as their economic policy in the future, on when Brezhnev goes, and how the succession proceeds, and how quickly some effective new leadership takes over whether it's an individual or a group. It may be a period of uncertainty, a time when it's difficult for them to make the decisions of a difficult nature, such as I think they face here.

DEFENSE SPENDING

Let me talk about these four goals that I just mentioned, and illustrate why each of those represents a difficult choice as far as whether they could go back on it or not. Let's start with defense, which we've gone over a number of times. As I said, I'll get to the methodological issue separately, and take it up in whatever detail you want.

This chart [3] we've shown you before, and has just been extended a year. It shows again, in the upper band, what we calculate Soviet defense spending to be, and as you recall, they include some things in there that are done in our country by NASA and other agencies. The bar shows what we think defense spending would be if comparable to the U.S. defense budget. And the line at the bottom simply shows the claimed defense outlays they publish in their annual statistics.

We think here that defense spending accounted for 11 to 13 percent of GNP between [1965] and [1978] a roughly constant share. But then, as the economy since [1978] has not grown quite as rapidly, that share has increased to about 12 to 14 percent.

There are indications that the present Soviet leaders do not intend to cut back on defense. Their public speeches underscore the need to press on with military programs, and our monitoring of indicators of future defense programs suggest to us that defense spending is going to continue to grow at about the same 4 to 5 percent a year.

If these projections of both the continued rise in the funding of defense and a decline in the overall GNP are correct, by 1985 the

[3] See fig. III, p. 108.

annual increase in defense spending could absorb over half of the increment of GNP for that year. And there, of course, we get back to your point. It really will cut into what they can do in terms of investment in other areas of their economy.

This continuing priority on defense, at a time when the economy is faltering, of course, may appear paradoxical. It raises questions about Soviet motives and intentions. But actually, it's been the policy of this leadership ever since its rise to power in the mid-1960's to emphasize the expansion and the modernization of its armed forces.

Apparently underlying that is a belief in the political utility of a strong military, a conclusion that from their point of view has paid off well in terms of the prestige they've gained in achieving strategic parity with the United States, and the capacity to carry out a more aggressive policy in the Third World, particularly since 1975 in Angola, Somalia, Yemen and Afghanistan.

International Concerns

In the immediate future, the Soviets would appear to have additional incentives to keep their emphasis on defense. On the one hand, they're concerned that new United States and NATO weapons planned for the next few years could, in their view, offset some of the gains they've made in strategic forces. On the other hand, they're worried about the current international situation, which they view as being at the lowest point in about 15 years.

Senator Proxmire. You say it's the lowest point in 15 years. In other words, they think they're worse off—the Soviet Union as a world power is worse off? They have suffered in Afghanistan—because of the situation in Poland, perhaps?

Admiral Turner. I'm sorry. I think I phrased that very poorly.

I think they view the tensions in the world, the relations with the United States, the uncertainties of the international horizon, as worse now than in the last 15 years.

Senator Proxmire. I know it's a subjective matter to have made a judgment on, and it's hard to be sure on it. But do you have any notion of how they feel about their relative strength?

Admiral Turner. I think that the Soviet leadership today feels relatively good about what they believe they have achieved for themselves, largely through this use of their military arms.

Senator Proxmire. When they look around the world, and see that China, now, is a massive power and hostile, and they're having trouble on their borders, and they're having trouble in their satellites—they got kicked out of Egypt; of course, that was some time ago.

Admiral Turner. There's no question they've got their share of problems. It's my view that, although they are not happy with what's been going on in Afghanistan, they have not looked on this as a major setback or a cost that they can't endure for some period of time. In short, they're not taking any action in Afghanistan to escalate their activity there in order to get it over with. They seem to be willing to carry this degree of burden, it looks to us, like almost indefinitely.

Clearly, they're very worried about Poland and are treating that in a very delicate sense. On the other hand, we see no backing off in their support for their other clients around the world—Kampuchea, Vietnam, Ethiopia, Angola, and Cuba.

Poland

Senator Proxmire. Is it possible that their experience in Afghanistan, and our reaction, perhaps had the effect of discouraging them from moving into Poland?

Admiral Turner. I think it made them more cautious; indeed, yes. They're very concerned about Iran on their southern flank, and we've seen them increasing their attention to these forces in the Trans-Caucasus bordering on Iran. I think, you know, they are worried about being stretched with an active war in Afghanistan, the possibility of having to use their military in Poland—again a possibility—and I think they're genuinely worried. Not just that they might want to take Iran—which I'm sure they'd like to do, but they feel that's probably pretty inflammatory at this time. But with the movement of our rapid deployment force, the establishment of bases in the Middle East area, the establishment of pre-position stocks, the movement of two-carrier task forces into the area, I think they have some genuine concern that we are going to go into Iran. And I think they would feel very much as though they would have to respond in some military way if we did.

Grain Enbargo

Senator Proxmire. Did the grain embargo have an influence on that?

Admiral Turner. Which embargo?

Senator Proxmire. Our grain embargo.

Admiral Turner. I think that's impressed them, as you indicated, with the toughness of our response. As I'll mention in the briefing here, it has curbed their meat production.

Mr. Diamond. Meat output was 4 percent less for the first 8 months than it was in 1979. It will be down for the year at least 3 percent, and maybe as much as 5 or 6 percent.

Senator Proxmire. Does that affect their exports into Poland? I know they export feed grain to Poland.

Mr. Diamond. Normally, they export about 800,000 tons of grain to Poland. But this year they will not.

Senator Proxmire. Isn't that one of the factors that might have helped provoke the Polish strike?

Mr. Diamond. No. The Poles are getting from the West all the grain that they had asked for. Up to September 1, their total imports in 1980 will be around 7½ to 8 million tons of grain, and that's what they thought they needed for this year. So the answer is, the grain embargo on the Soviet Union did not impinge on the Polish economy.

Economic Disequilibrium

Admiral Turner. Anyway, in sum, we see strong pressures to sustain their investment on the military side. And clearly, as we've discussed informally here, this impacts on their ability to make investments in machinery and construction and so on.

Shortages of basic materials, as I mentioned, like steel and cement, have interrupted their construction activity, have impinged on many of their industrial operations. Soviet leaders have been planning to speed up the introduction of new capacity in these areas, but have had

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little success so far. Scattered evidence we have on directions of this new 1981 to 1985 5-year plan indicates that they realize that their machine-building capacity is overcommitted, and needs priority attention.

What has developed, then, is an economy here which is in growing disequilibrium. There are problems in one sector, which degrade performance in another. Since these didn't spring up overnight, but in large part reflect past mistakes in allocating investment resources, they can't be overcome quickly.

ENERGY

Turning to a second major problem, maybe their worst problem is this energy question. The sharply declining energy growth will be the biggest constraint on their overall economic growth. During the 1970's energy output grew at an annual rate of nearly 5 percent. In 1985, we estimate the growth will be down to about 1½ percent.

Even if Moscow sharply raises the amount of investment in this sector, which does seem likely, this conclusion basically reaffirms my statement of a year ago. It is based on the intensive review that we've conducted of the Soviet energy situation over the past 6 months. To do this, we use experts not only within the Government, within our own agency, but outside of it as well.

[Security deletion.]

Senator PROXMIRE. Here again, we have a requirement for investment which poses a tough choice for the Soviet Union. And once again, to the extent that they continue to build up and increase their military force, it would have some effect.

Admiral TURNER. That's correct. It is a little bit more than just an investment problem, though. Because they don't have the skilled labor, the trained people—and in some instances, the capacity in their own country to build the right drills and bits and other equipment that they need. And we have noted that as they have tried to push this drilling to a much higher level, that it's become less and less efficient.

Senator PROXMIRE. Of course, they can get all those things over a period of time, if they would put the money in, if they would train their people.

Admiral TURNER. That's correct. And again, it's part of our overall prospect here. The Soviets are not running out of oil. In fact, in the 1990's, if they play the game right, they may be one of the few producers increasing capacity. But for the next decade or thereabouts, they're behind the power curve, and they won't be able to keep their production either up or prevent it from declining.

As long as it declines, as we think, they're going to have some tough tradeoffs for energy between what they need and what Eastern Europe needs. It's going to be a problem. That's clearly reflected in the Polish situation today, because they produce 12 million barrels today. Nine of it they consume themselves, three of it they export: Two to Eastern Europe, one to the free world, for which they get hard currency. They can insulate their own economy from the impact of the oil decline by reducing exports to Eastern Europe, but as you are well aware, they can't push this too far without serious dangers of political repercussions.

At the same time, if they cut back exports to the West, the million

barrels a day they sell to us, this would reduce their hard currency earnings, which are very important to them if they're going to continue to import grain, steel, and machinery from us.

Oil, of course, is not their only problem in the energy field, because 30 percent of their energy is coal. And the coal output does not have a good prospect, either. Mine capacities since the mid-1970's have been slow coming on stream. Mine depletion has been rising.

The other area, gas, unlike coal and oil, has good prospects. Growth during the next 5-year plan is likely to average about 5 percent annually. Because, however, gas is not easily substitutable for oil in a number of important industrial uses, Moscow will employ much of this growth to increase exports to the West.

New Gas Pipeline

The Soviets are moving ahead very rapidly with plans for a $10 to $15 billion natural gas pipeline to carry their gas to Western Europe. It offers the West at least $6 billion in new equipment sales in return for substantial deliveries of gas to Europe—and at a time when Europe faces uncertain deliveries from traditional non-Communist suppliers. By 1985, West Germany, for example, will get about 30 percent of its natural gas from the Soviet Union.

To the Soviets, this is a financial bonanza. Soviet gas exports would be the equivalent of a million barrels a day of oil by the late 1980's.

Economic Burden of Poland and Eastern Europe

The unrest in Poland exemplifies the problem of the economic burden of Eastern Europe on the Soviet Union. For several years, Moscow has been trying to reduce the cost to themselves of maintaining their empire in Eastern Europe. They've been raising the prices that Eastern Europe pays for the energy and raw materials it buys from the Soviet Union. It's also tried to put a ceiling on the energy it's willing to supply during the period 1981 to 1985.

Recent events in Poland are likely to lead Moscow to reexamine its policy, however. Eastern European countries have been facing the same kind of sharp slowdown in economic growth that confronts the Soviet Union. Gross national product has grown more slowly in the second half of the 1970's than in the first half in every East European country except Romania.

The unrest in Poland shows that Moscow is taking a big risk if it assumes an inflexible attitude toward Eastern European economic activity. The Soviets' first priority will be to extend aid to Poland, feeling it is necessary both to avoid politically dangerous economic deterioration and to limit Warsaw's political concessions to their workers.

Poland was in serious economic and external financial trouble even before these strikes. Their economy did not grow at all in 1979. It registered another large hard currency deficit, which reached a total of $20 billion by the end of last year. The debt service ratio last year was 80 percent. For this year, even before the summer's turmoil, we project a current account deficit of about $3 billion, roughly the same as last year.

One cost of the strike settlements will be a hard currency balance-of-trade deficit worse than previously anticipated. According to Polish estimates, increases in wages and other benefits resulting from the strikes will total at least $3 billion a year. If the Government were to match only a third of this amount with consumer goods imported from the West, the trade deficit and debt would rise by over a billion dollars at an annual rate.

On the other hand, Warsaw really must buy some consumer goods if it's to ease the shortages, restrain inflation, and hold down consumer discontent. The Soviets can provide some of the aid to Poland in a number of ways. They can provide trade credits, as they have in the past, by running trade surpluses with Poland. They can continue to trade with Poland at prices favorable to Poland, more favorable than those prevailing on the world markets. They can grant outright hard currency loans, and they can ask Soviet-controlled banks in the West to lend to Poland, as they did last month.

On September 11, Poland and the Soviet Union signed an aid agreement in Moscow that the Poles have valued at $690 million. How firm this aid commitment and others are is open to question, however. We continue to suspect that Moscow intends to make its aid conditional on how effectively Warsaw dilutes its concessions to the Polish workers.

For the moment, however, Moscow is in a position to give some hard currency aid to Poland. Because of the high oil prices last year, the U.S.S.R. is in its strongest financial position in many years.

As I have argued, however, Soviet flexibility in providing aid will erode rapidly in the 1980's as the Soviet energy production falters, leading first to a fall and then a disappearance of oil exports. Moscow will therefore be cautious in offering aid, knowing that Eastern European requirements are bound to increase in the short run.

As the U.S.S.R. extends aid to Poland, other Eastern European countries are likely to press for similar help, even in the absence of unrest comparable to that in Poland. In the longer run, as the expected economic slowdown in Eastern Europe grinds on, and the gap between popular expectations and actual material conditions widens, the probability of unrest is likely to rise, and the aid requests to the Soviet Union are likely to grow more urgent.

But the Eastern European need for help will be growing at just the time when we think the rise of living standards in the Soviet Union will come to a halt. The Soviets will be very reluctant to increase or subsidize European consumers more when they are already more prosperous than those in the Soviet Union.

Possible Unrest in Eastern Europe

Senator Proxmire. What prospect is there that this pretty grim situation that you sketch for the Eastern European countries that are part of the Soviet empire—what prospect is there that there could be unrest, or more than unrest, attempts to overthrow governments—in any of these Eastern European countries: East Germany, Bulgaria, Czechoslovakia, and so forth?

Admiral Turner. The East Germans, Romanians, and the Czechoslovaks are the most nervous, and they are quite nervous today. On

the other hand, I think the prospects for serious outbreaks—overthrows of government—have been reduced, in a sense, by the Polish situation. Those governments are so alert that they will move very rapidly to quash the kinds of things that developed in Poland.

Senator PROXMIRE. What can they do fundamentally, however, other than what they did in Poland, which was to cave in? In doing so, they have, as you say, limited resources—getting more limited all the time.

Admiral TURNER. I think the only thing they can do is apply strong-arm force at a very early stage to prevent a worker movement from gaining any momentum.

Senator PROXMIRE. That has its limits, doesn't it?

Admiral TURNER. It has its limits over the longer run.

Senator PROXMIRE. I would think it would have its limits also in the short run, with respect to economic production. If people become more and more disaffected and distressed, and they feel repressed, it seems to me that their economic response—the only way people who are pushed around this way can show it would be to diminish their productivity.

Admiral TURNER. I think there's no question. We've been saying we think that's one of the reasons why productivity is on the decline inside the Soviet Union. There's little to be gained by working harder. You earn more rubles, but you may not have access to the goods and services you desire. You're absolutely right.

I am saying that, first of all, there were unique circumstances in Poland. You know, the Poles are a unique people.

Senator PROXMIRE. Even something that seems as remote as the fact that we have a Polish pope. That must have a tremendous effect on a people as religious as the Poles are.

Admiral TURNER. And, of course, Poland has had a unique position, a more free position for the church. They have had a more independent agriculture, and they have had three excursions through this problem before. And the workers gained a lot of experience. Therefore, they are not today being taken in, as they have been on the three previous occasions, when the Government really watered down—or walked back the cat, as we say in the Navy—on the agreements that they had made.

So, we think that the experience of these workers led them through this negotiation with the Government in a more firm and resolute manner. Those same conditions don't exist in the other countries.

I'm not saying—your point that what they can do to stop outbreaks of problems in 1980 will not solve their difficulties. They will be faced with them over and over again.

UNITY OF WARSAW PACT

Senator PROXMIRE. What does this tell us about the military strength of the Warsaw Pact? Could countries in which it is necessary to follow this strict suppressing situation, with a deteriorating economic outlook and disappointment on the part of the people, provide the Soviet Union with the kind of enthusiastic and effective allies that it would want in the event of any controversy with Western Europe? Wouldn't this tend to weaken the Warsaw Pact?

Admiral TURNER. I personally think it does. It's a very controversial issue, and I've debated with our analysts over and over again.

The one argument on the other side of this—because clearly, if you don't feel that your line of communication across Poland is absolutely secure, you've got to leave forces behind to take care of it in order to make sure that it does remain secure—the argument on the other side, which I think has some validity, is that if there were genuinely a major war between NATO and the Warsaw Pact, the Poles would have a very difficult decision as to whether to throw their lot in or not. But the chances are that they would, particularly if they thought the Warsaw Pact was going to come out the winner in the long run, or if they felt the Germans were going to have another opportunity to take a slice of Poland, if you see what I mean.

In short, even though they might not like the Soviets, and may not be comfortable with their Warsaw Pact position, at a moment of crisis, at a moment of decision as to whether to resist, be somewhat neutral, or join in wholeheartedly in a war that was beginning geographically between East and West Germany, I'm afraid I think there is a reasonable probability that the Poles, both by the pressure of the Soviets——

Senator PROXMIRE. I would concede that. It is just a matter of the quality of support that the Soviet Union would get from these Eastern European countries.

Frankly, I've only been to Poland once, and that was many years ago, 1957. But I'm always astonished at the enormous affection the Poles have, seem to have, for Americans—President Nixon went through there, and he was given a hero's welcome—and the enormous hatred they have for the Soviet Union, for the Russians.

I would think that that kind of an ally wouldn't be very comfortable for the Soviet Union, if they looked to the possibility of a conflict with Western Europe.

Admiral TURNER. I think it is a weakness. It's hard to measure. But, as I say, it doesn't give me much consolation if, when the time comes, they do pick up their kit and march—in part, because they're defending their homeland against the Germans, from their point of view.

SOVIET CONSUMER DEMANDS

Let me move on to pressures on the Soviet leaders for consumption, the consumer. Because with defense continuing to increase its share of the GNP, and investment more skewed to the producing sectors of the economy, with East Europe in need for help, the Soviet worker has little to look forward to in the next several years.

Even with a series of average to above-average drops, and sizable grain imports, we expect the gap between the amount of meat demanded and the amount supplied to widen. Last year's poor grain crop, coupled with a mediocre crop in 1980, and continued partial denial of U.S. grain, means that meat output will remain well below planned targets.

To help to lessen the impact of last year's poor harvest on their livestock program, we estimate that Moscow wanted to import last year between 36 and 40 million tons of grain and oil seeds, which is really the capacity of their ports to handle. The Soviets had hoped

to import 25 million of this from the United States, the maximum allowed during the fourth year of the Soviet-United States long-term grain agreement, which runs from October to October each year.

Under the sanctions implemented by us in January, however, they were limited to 8 million tons, 17 million below what they wanted. They've been able to make up about half of this through additional purchases from Canada and Argentina.

The net result is that grain imports during this year of the agreement will total about 30 million tons, the same as last year, but 6 to 10 million tons short of their original intent.

Based on our estimate of grain availability, and domestic requirements, meat output this year will drop.

Meat production will be down at least 3 percent below 1979. Per capita meat consumption will drop to the level of 1973–74, as you can see on this chart. We have a lot of reporting from the Soviet Union indicating that the food situation is serious. People have described it as the worst in many years.

The recent strikes at the motor vehicle plants at Tol'yatti and Gor'kiy were touched off by food shortages. They were settled only after the authorities rushed in supplies from surrounding areas. This deteriorating food situation represents a major setback in the regime's efforts to raise living standards.

At present, per capita consumption in the Soviet Union is about a third of that in the United States, as you can see by comparing the top bar and the bottom bar on this chart. The gap was narrowing in the 1960's, but it has widened again during the 1970's, as Soviet growth trailed off.

The Soviets, as you can see on the chart, also lag far behind the major Western European countries and Japan.

Senator PROXMIRE. I don't want to get off the track, but I've heard a devastating indictment of our excessive meat consumption. I'm sure theirs is deficient, but I think it's not altogether in our interest to consume the colossal amount of meat we do. And I've heard many, many doctors argue this to be the principal reason—and of course, there's a lot of dispute on this.

Mr. DIAMOND. There's such a wide gap between the Soviet and United States consumption.

They are 60 percent below ours. A more viable comparison is Eastern Europe. There, they are 30 percent below Polish consumption. The Poles are now consuming 78 kilograms of meat.

Senator PROXMIRE. The Poles consume about as much as they do in West Germany.

Admiral TURNER. According to that, yes.

Senator PROXMIRE. They tell me that at the end of World War II, meat consumption was so low, they couldn't find enough people for a study of heart disease in medical universities in Europe. Then, after we began to get enough meat, they began to consume more. Then heart disease came back, and they had plenty of people to work on and to treat, and resumed their study of heart disease.

At any rate, what startles me about that chart is the fact that Poland is right up there with West Germany.

Mr. DIAMOND. That's right. Can't you see the Soviet consumer respond to appeals from Warsaw for aid to further enhance the Polish diet, when they know about this sort of discrepancy?

Admiral TURNER. Well, moving on, the Politburo's short-run response to this squeeze on consumption is likely, in our opinion, to be stress on labor discipline and efforts to restrain consumer demand. They'll try to hold down the year-to-year rise in wages and salaries, may decide to raise prices on consumer goods and services. This is an option that's avoided, since price increases in meat and butter led to civil distrubances in 1962.

But, after years of promising workers a higher standard of living, it is significant that some senior party and government officials are downplaying the link between worker motivation and the provision of more and better goods, as we've discussed a number of times this morning. In fact, since mid-1979, Moscow has been pushing for tighter control over incomes and manpower.

A Central Committee-Council of Ministers decree, issued in July of last year, gives the Gosplan more power to allocate scarce labor resources and to control the level of wages.

ECONOMIC PROSPECTS

Let me look at the longer term possibilities now. We think the aging Soviet leadership is marking time. In the economic arena, it prefers tinkering at the margins to extensive policy changes. The alternatives seem too painful and too risky, especially since the leadership cannot expect to enjoy the fruits of policies whose benefits will be deferred for more than a few years.

In the matter of economic reform, for example, the Politburo can probably be content to continue with the half-hearted measures announced in July. On balance, over the past year, various decrees call for more centralization for economic decisions, and the pursuit of greater efficiency by directives rather than by altering incentives.

We do not think that any of the economic reforms adopted thus far will have an appreciable effect on economic performance. A decisive shift in economic policy just can't be expected until a new Soviet leadership arrives on the scene. Even a succession leadership would be likely to choose to muddle down for a time rather than to confront the problem head on.

First of all, the new leaders might understandably hope that the difficulties of the eighties will pass as the resources of Siberia become more available, as the enormous investments they've been making in agriculture begin to pay off, and as the labor force growth turns upward again. In any case, during the succession, some time probably would pass before a concensus could be reached regarding important policy changes. Politically palatable and administratively expedient solutions are not as clearly available as they were during the previous changes of guard.

We don't think, then, that muddling down is tenable in the long run. By the mideighties, a new, well-established Politburo could be persuaded that more radical policies are necessary. In broad terms, the Soviet Union could then move in two possible directions, each of which could have striking implications for internal developments in the Soviet Union and for the Soviet Union's position in the world.

On the one hand, the new leaders might choose to impose austerity by all means available in order to support the continued growth of

military spending, while finding the necessary resources to increase investment. In this case, consumption would suffer, and the draconian measures of the past might be needed to keep the labor force working. A regressive policy shift of this kind probably would also mean much less reliance on economic relations with the West, and a tougher stand toward ideological deviation in Eastern Europe.

To justify austerity and appeals for self-sacrifice, a new Soviet regime would probably have to evoke an image of heightened danger from the West or from China.

Alternatively, the economic picture might look so dismal by the mideighties that the leadership could coalesce behind a more liberal set of policies. These policies could include liberal shifts of resource allocation, management reforms, or both. The leadership could, for example, reverse its economic policies and sharply increase production of consumer goods in an attempt to elicit more productivity from the labor force.

Giving priority to the consumer almost certainly would mean a slowdown in the growth of military spending. They could moderate the growth in defense spending by economizing in ways that would have only modest impact on the modernization of their forces by stretching out selected weapons programs, for example, or by taking advantage of the limited direct savings made possible by arms control agreements.

But a stronger rein on defense spending would be imposed only after a close review, making the assurance that such slackening would not result in the loss of foreign policy gains that have, in their eyes, been made through the political use of military power. Still, such a change in policy might well lessen their ability to seize similar opportunities in the future.

Some cutback in Soviet support to Eastern Europe is also possible as the economic situation deteriorates. With domestic oil production falling, for example, Moscow would not continue exports at their current level without doing serious damage to its own economy.

While a major shift in resource allocation would give some relief to the population, and improve economic performance somewhat, a significant boost in economic growth cannot be achieved without managerial reforms. These would include much greater decentralization of decisionmaking, less reliance on central planning, and much more reliance on monetary and price incentives.

Introduction of such structural reforms might not be possible, however, without the resource allocation in favor of the consumer and investment. And even with such reallocation, many in the leadership will view any radical departure from prevailing, centralized methods as an erosion of party control.

Senator PROXMIRE. Before you go into the Chinese, I'd like to ask you some more questions about the Soviet Union.

Admiral TURNER. Yes, sir.

Senator PROXMIRE. I notice that you start off the analysis of the Chinese economy with a stress on the victory of the pragmatists, and the use of incentives, which you've just indicated the Soviet Union has rejected; and the centralization which the Soviet Union is featuring, but which the Chinese Communists seem to be escaping.

Is it possible that the Soviet Union will learn a lesson from the Chinese, see the Chinese economy growing and their influence and

power growing, because they have followed a policy that encourages improvements in productivity—that they might do the same thing?

Admiral TURNER. It's certainly possible. I think it's doubtful for a couple of reasons.

One is, it will take a long time for the Chinese to demonstrate that this really does benefit them importantly, of course, the Soviets have such different problems than the Chinese; particularly the Soviets, being in a more aggressive political mood, really feel the utility of military force for political advantage more so than the Chinese, at this stage in their development, anyway.

It doesn't seem to me they're trying to take advantage of their military forces in quite the same way.

Second, the Soviets historically have worried about the two-front situation, and really do have a strong military concern—greater, perhaps, than the Chinese, who have demonstrated by, as we say in this briefing, going to 1-percent growth over the last decade in their military, they have a feeling, I believe, that even with their very obsolete military force, that they can meet their minimum defense requirements without stretching themselves nearly as much as the Soviets are for defense.

In short, I think the Soviet imperatives are quite different.

COST COMPARISONS OF DEFENSE

Senator PROXMIRE. Admiral, critics of the CIA's dollar-cost methodology are saying that the results exaggerate the size of the Soviet defense budget. For example, you do a detailed analysis comparing the dollar costs of the United States and the Soviet budgets, but you do only a superficial comparison of what the two forces would cost in rubles.

And for the comparison to be balanced, shouldn't it be done in the same or a similar amount of detail in both dollars and rubles?

Mr. BARRY. Mr. Chairman, as we have pointed out, we do the comparisons primarily in dollars. We like to use dollars as the principal method of comparison for several reasons.

First of all, dollar costs are the most readily communicable types of comparisons to most of our consumers. This is because most U.S. consumers tend to think in terms of dollars. To the extent that U.S. defense tradeoff decisions are made, they're usually made in terms of dollars. We're frequently asked the question, for example, "How much is that in real money?" And what's intended is dollars.

It is true that a common practice in international economic comparison is to frame the comparison between two countries in terms of the currencies of both, and to present either a range or some measure of central tendency, such as the geometric mean.

We have carried out, over a period of several years, comparisons in rubles. When we first began them, and first began reporting them to this committee, I think they were properly characterized as superficial. Over the last several years, however, we've increased significantly the amount of detail in which we do these comparisons.

For example, the personnel comparison in rubles are now done in 21 different categories for each of the military services. The remainder of the estimate is done using some 80 budgetary breakdowns from the

U.S. defense budget, each of which is estimated in rubles using an appropriate ruble-dollar ratio, which is further weighted by a more detailed breakdown of those budgetary categories.

Senator PROXMIRE. How does that compare in detail with the dollar amounts that we've been getting?

Mr. BARRY. The level of detail is less.

Senator PROXMIRE. How much less?

Mr. BARRY. There's no easy way to compare them, because the methods are quite different.

Senator PROXMIRE. What are the major detailed data that you develop for dollars that you don't develop in rubles?

Mr. BARRY. In the dollar comparison, we rely on a direct costing or building block method, which involves first of all counting up the physical activities in the Soviet Union, and then applying dollar-cost estimates to each. These then are compared with U.S. defense outlays.

When we do the ruble comparison, we estimate Soviet spending in rubles using that same detailed building block method. Rather than applying a direct ruble cost to every U.S. activity, we use breakdowns of U.S. budgetary dates, and then apply dollar to ruble conversion factors to those dates. So the method is quite different.

The categories of U.S. budgetary data number in the hundreds, as opposed to several thousands on the Soviet side.

Senator PROXMIRE. We both agree that there's some inherent bias in comparing the defense budgets of any two nations. You say, measured in dollars, Soviet defense activities were 50 percent higher in 1979 than the United States. Measured in rubles, they were 30 percent higher.

Is it possible that if you were able to do the ruble comparison in as much detail as in dollars, the dollar-ruble gap would be even wider? Isn't it possible that the Soviet spending would be only 15 percent higher, or less?

Mr. BARRY. Senator Proxmire, we doubt that that would be the case. We don't think that the uncertaintly would be of that order of magnitude.

Senator PROXMIRE. That's a guess. You don't really know. You're doing exchange rates instead of the building blocks.

Mr. BARRY. No, sir; not precisely. We do not use exchange rates. We do a fairly detailed breakdown of U.S. budgetary categories and convert the dollar costs to rubles based on direct comparisons of ruble and dollar prices for samples of products within those categories.

We believe this is a fairly detailed and reliable method.

Admiral TURNER. Jim, can I ask you, as you've refined the ruble costing over the years, has it gone from 25 to 30 percent, or from 35 to 30 percent? You see what I mean? Which way is it tending?

Mr. BARRY. One of the comments that's often made about this type of analysis is that, in theory, as you do a finer and finer breakdown, the so-called index number spread; that is, the ratio between the dollar and the ruble comparisons, would increase. We have found that not to be the case. We don't get a significantly different answer by using this more detailed method of recent years than we got by using the more superficial method.

Senator PROXMIRE. Could you make available to our staff your study of the ruble comparison?

Mr. BARRY. Sir, we have at the moment no study that is published. We do have sets of working notes, which certainly we can turn into a paper to be made available to your staff.

Senator PROXMIRE. Now, when both dollar and ruble comparisons of United States and Soviet economic activities were made, a much greater difference shows up. That's well stated in the study prepared by the CIA analyst for the 1979 Joint Economic Committee volume, "The Soviet Economy in a Time of Change." There, the spread between dollars and rubles, according to this paper, is 1.54 for total consumption, 1.74 for consumer durables, 1.30 for total investment, 1.63 for machinery and equipment, but only 1.11 for defense and space.

How do you explain this disparity? And isn't it correct that if the spread for defense were similar to the rest of the economy, the Soviet defense budget would be about the same size as the U.S. defense budget measured in rubles?

Mr. BARRY. Mr. Chairman, it certainly is the case that if the spread in defense were similar to that in the rest of the economy, the comparison of United States and Soviet defense activities would look quite different. We believe, however, that there are good reasons why the index number spread in the defense sector of their economy should not be similar to that in other sectors.

The index number problem rests on a number of basic theoretical assumptions, the primary assumption being that countries will maximize the use of cheap resources and minimize the use of expensive resources. This is basic neoclassical microeconomic theory, and presumes rational economic actors responding to relative prices.

It seems to be the case that in the defense sector of a modern country, there is significantly less responsiveness to relative prices. First of all, the very ability of a country to change its mix, say, of procurement and men is limited significantly by the technological characteristics of modern weapons. For example, even if men were substantially cheaper in the Soviet Union, they could not trade off, say, one ICBM for a few thousand more people and gain the same amount of military power. So the range of ability to change the mix is quite limited.

Second, even within procurement categories, the Soviets do not choose to maximize the purchases of those equipments which are cheap. They respond not to relative prices but to the imperatives of military technology and to the existence of an external threat.

Finally, the index number problem also relies on assumptions about free markets, substitutability of goods, and the interaction of supply and demand. These certainly, affect the Soviet consumer, so that in the consumer sector, the Soviet worker will make a choice on the basis of relative prices.

In the defense sector of any economy, however, we don't have anything approaching a perfect competition model. Defense sectors can be characterized by monopsonistic buyers—single purchasers of the goods and service—and either monopolistic or oligopolistic suppliers. In such cases relative prices may have very little impact on choices. In other words, defense sectors simply work substantially differently than other sectors of the economy. So there's no particular reason to expect the index number spread to be the same, and we believe that our empirical work supports that.

Senator PROXMIRE. It works differently. There's no question. Our defense is overwhelmingly influenced by the rest of our economy. The economies to be achieved in automotive production are reflected in our tank production. The economies to be achieved in our private aircraft production are reflected in the way we produce military aircraft. Throughout our procurement, that's the case.

CHINA'S DEFENSE DOLLAR COST

In personnel—I want to get into another issue, but according to your own calculations, the dollar costs show that Chinese defense activity is about 70 percent as great as the Soviet Union's, and about equal to the United States. Doesn't that illustrate the fallacy in your approach? Nobody would argue that the Chinese have a military force equal to the United States. It's obviously far, far less, unless you're talking about fighting right within the nation itself.

Would the bias be corrected if you made the comparison in yuans?

Mr. BARRY. Mr. Chairman, before answering that, I think it's important to note, as we have many times before this committee and many times in our publications, that we do not believe that the dollar-cost comparison can or should be used as a measure of military effectiveness.

Senator PROXMIRE. Well, that's right. But it's so easy and so quick, so simple, it's being used that way. It has a profound influence on the Congress and the public. And I think the conversion of the public from an attitude of 20 years ago or 15 years ago, of saying that we should spend about as much we were spending on defense, or maybe less, to one which is overwhelmingly now—people are saying we want to spend more, as a result of being told that the Soviet Union is spending far more than we spend.

Now you tell us that we shouldn't use that as a comparison. But as I say, it's a simple shorthand that people can grasp quickly and easily, and say, "Well, the Soviets are 50 percent or 30 percent or whatever more powerful than we are," something, I think you would agree, is a ridiculous comparison. Because they are more powerful in some respects, but we're ahead of them in others.

Admiral TURNER. If General Motors finds that Ford is spending 50 percent more than they are on research and development, and so on, they're going to be worried, even if Ford is still a lesser producer and a lesser company. Maybe it's not a good comparison.

But I think the message of the 50 percent, Mr. Chairman, is that there is some new cause for alarm when a country with a smaller gross national product than ours is willing to put a little bit more than twice as much of its effort and attention into this section. I think that is a proper cause for concern, as compared with whether they get 50 percent more military capability from it, which is not a proper conclusion.

Senator PROXMIRE. Let me ask once again, though. Doesn't your calculation that shows that Chinese defense activity is about equal to the United States illustrate an obvious fallacy in the approach? Wouldn't the bias be corrected if you made that comparison in yuans?

Mr. BARRY. Mr. Chairman, in the information that we supplied to your staff, we made the calculation of the overall dollar cost of

Chinese defense activities, using the same personnel cost factor that we use for the Soviet Union. We noted in that response that this is clearly an upper bound—in fact, would exceed an upper bound—because it would be, in our view, inappropriate to apply even that dollar-cost factor to the Chinese military.

I do not know what the answer would be.

Senator PROXMIRE. What average personnel costs did you use?

Mr. BARRY. We used an average of $12,300 per man.

Senator PROXMIRE. By the way, is it possible that you're understating the Chinese defense in dollars? You apply the same average costs for U.S. manpower for the Chinese Army. Can you explain how a 7½ million-man force can be only 70 percent of the Soviet Union's, measured in dollars?

Mr. BARRY. Mr. Chairman, I'm afraid I don't have all the detailed backup calculations with me on this. The method that we used, to attempt to answer your question, was to take the average dollar-cost factor that we applied to Soviet forces—which is not a simple U.S. pay factor.

Senator PROXMIRE. Look at it this way. The average U.S. manpower cost per man is $20,000. Multiply that by 7½ million, you get $150 billion for personnel alone, even if there's no equipment at all; they don't have a rifle or a jeep. It would be $150 billion, which is what our outlay, we hope, will be in 1981.

Mr. BARRY. We wouldn't do it that way, and in fact, that is not the procedure we use to estimate dollar costs of military personnel in the Soviet Union.

Senator PROXMIRE. Isn't that the result?

Mr. BARRY. Yes, sir. But that's not the procedure.

Senator PROXMIRE. Isn't that what we do when we dollar-cost the Soviet Union?

Mr. BARRY. No, sir. We do not apply an average U.S. pay. We do a very detailed breakdown of Soviet military personnel, identifying by rank, position and skill the people who man the Soviet military. We then apply a dollar-cost pay factor which is appropriate to the skill level—that is, the job carried out by the Soviet serviceman.

Senator PROXMIRE. What does the average come out to be, first for the Chinese and then for the Soviets?

Mr. BARRY. In the exercise that you just described, we use the same average for the Chinese and the Soviets. I do not have the figure. I do know that on the average, service by service, the pay factor that we apply to the Soviet military personnel ranges 10 to 20 percent lower than the average pay for U.S. military personnel.

Senator PROXMIRE. Do you do that because their skill is less?

Mr. BARRY. Yes, sir. Because what we are trying to capture in our dollar-cost concept is the cost to the United States of manning the Soviet force and operating it the way the Soviets do.

Senator PROXMIRE. Well, 20-percent lower would make it $16,000. Multiply $16,000 by 7½ million and you still have a huge personnel cost for the Chinese Army—$120 billion in personne .

Mr. BARRY. Mr. Chairman, I'm afraid I don't have the detailed calculations here. There may be a difference between your $20,000 figure and our factor, because of price base and inflation. I'm sure we can explain the difference. The average pay for the total force is

considerably lower (about $10,000 per man) because of the preponderance of lower paying positions in the Soviet conscript and Chinese Armies. Looking position-by-position the differental is 10–20 percent.

Dollar Cost of Military Personnel

Senator Proxmire. Now, the CIA approach is criticized for overvaluing Soviet military personnel. That occurs because no account is taken of the superior quality, training, and education of U.S. military manpower. Now you're telling me you do take that into account.

Mr. Barry. Yes, sir, we certainly do.

Senator Proxmire. You say you do it by evaluating, position-by-position, the skill and so forth: the training of the American and the Soviet military personnel.

Mr. Barry. Yes, sir, I think an example might help to clarify this.

In the Soviet Union, officers often carry out maintenance and maintenance supervision functions that in the United States are carried out by noncommissioned officers or petty officers. The functions of the electronics maintenance officer on a Soviet ship, for example, are similar to the function of a chief petty officer on a U.S. ship. In this case we would apply the dollar pay factor for a chief petty officer.

Senator Proxmire. How about the fact that the Soviet Union has a higher percentage of draftees, in a very short time? They have a draft system, we have a volunteer system. I know we have a big turnover.

We still have, I expect, people with somewhat more experience in the military than the Soviet Union.

Mr. Barry. Yes, sir, that is one of the principle differences between the two military establishments. The Soviets have gone to great lengths to organize their military establishment and their military procedures so as to minimize the demand placed on the conscripts.

For example, they have a very conservative maintenance system that stresses cookbook solutions, very clearly written textbooks, and frequent overhauls back at the factory where the equipment was originally produced. The functions of the soldier in the field are simply to replace components or to ship equipment back to the factory—to carry out very simple maintenance procedures. But it certainly is a major difference between the structures of the United States and Soviet armed forces.

Differences in Technology

Senator Proxmire. Another specific source of criticism is that the dollar-cost methodology does not take account of the U.S. technological advantages. In previous hearings, CIA spokesmen have admitted the United States has an overall lead in military technology. But you said that in 1977, "while virtually all the Soviets' inventory of equipment falls within U.S. production and technology, the Soviets simply do not have the technology required to produce many of the U.S. weapons for which they produce no substitutes."

Yet this technology edge does not get picked up in the dollar-cost approach. Doesn't that bias the comparison in favor of the U.S.S.R.?

Mr. Barry. Mr. Chairman, the technological difference does get picked up in the dollar-cost approach.

Senator PROXMIRE. How can you possibly pick it up if they simply don't have the technology? If we can produce weapons that they can't produce at all, how can you pick that up?

Mr. BARRY. Mr. Chairman, this is the famous infinity problem. If there is one product in either country that the other country can't produce, then, in theory, a comparison of defense activities, or GNP, or any other economic comparison which included that product, would be infinite. Clearly, this isn't a viable result for any kind of analysis or comparison. Not only would it invalidate any international comparison, it would also affect intertemporal comparisons. If we were able to find one product that is produced in the United States in 1980 that couldn't be produce in the United States in 1972, then all of the constant-price GNP estimates produced by the Department of Commerce would be invalid.

Senator PROXMIRE. We agree on that.

Mr. BARRY. Clearly, you have to make some simplifying assumptions here.

What we do to compensate for the superior level of U.S. technology is to make subjective judgments and increase the relative prices ot U.S. equipment in rubles when we judge the United States to have the technological lead or a technological advantage that would translate into a relatively more costly product.

Senator PROXMIRE. Can you give us access to that so we can examine it?

Mr. BARRY. Yes, sir, we can.

Admiral TURNER. But implicit in your question, sir, is that we are comparing effectiveness rather than effort. Because yes; our technological equipment may—but as an ex-military man, not always—give us an effectiveness advantage. But effectiveness is not what we're comparing here. We're comparing what their effort is into their military.

Senator PROXMIRE. Well, we want to know—I think effectiveness, you're right. Effectiveness is something we may not compare. But I think effectiveness is what all of us really are concerned about. It's vital to compare the cost ot one and the cost of the other, and say the cost of one is higher. But what we're concerned with is effectiveness, whether or not they can produce an aircraft carrier like ours, nuclear powered and so forth. Maybe they could. But it would be very, very hard for us to determine the cost to them.

And I suspect if you have 13 attack carriers or major carriers, it would be very costly.

Admiral TURNER. I agree entirely.

Senator PROXMIRE. Maybe impossible.

Admiral TURNER. We try, in other fora up here, to give effectiveness comparisons as best we can. I would be very pleased to sit down with you. I think we've made, in the last 3 years, real strides in how to display strategic nuclear effectiveness comparisons, rather than just telling you they've got so many SS–18's, and we've got so many Minutemen, and so on.

I would enjoy going over that with you, if you ever have time.

I'm trying hard—but not as successfully, since it is more difficult—to find ways of similarly drawing effectiveness comparisons on the conventional side. But it is much more difficult to do.

Nuclear Submarines

Senator Proxmire. Another example in the Navy, of course, is in nuclear submarines. I realize the Soviets have built a few attack submarines with titanium hulls. Isn't it correct that ours are much more solid, and have superior nuclear reactors; that theirs are noisier, ours are quieter, therefore theirs are more vulnerable—in this respect, equivalent to the earliest U.S. models?

Isn't it also correct that they have trouble keeping theirs at sea, and that's why so many are in port? While we can put a dollar price on things like titanium hulls, you don't put one on the superior reactor plants and silent operations. Doesn't that tend to undervalue the U.S. subs when you talk about the cost?

Admiral Turner. Again, if you look on the cost as a measure of effectiveness, yes.

[Security deletion.]

Senator Proxmire. At any rate, that particular element does make their submarine more vulnerable.

Admiral Turner. Yes.

Senator Proxmire. Easier to detect and find, locate, and eliminate.

Admiral Turner. By our detection techniques, yes.

Senator Proxmire. And we don't put a cost on that.

Mr. Barry. In general, when we cost Soviet weapons systems, we try to cost in as much detail as possible and to replicate the differences between United States and Soviet designs. The submarine example you pick is an unfortunate one, because our methodology for submarines is not as rigorous as those for some of the other weapons systems.

Cruise Missiles

Senator Proxmire. How about cruise missiles? They have cruise missiles, but ours are superior, I understand, qualitatively. They cannot build counterparts to our system, because they don't know how. How much higher a price do we place on the U.S. missiles because of technological superiority? If you don't give it a higher price, how do you price it?

Mr. Barry. We do not ourselves price the U.S. missiles. Rather, we take the dollar-cost estimates of Soviet activities and compare them with U.S. budgetary data. We don't do any individual cost estimates on U.S. weapons.

We certainly could break out, if you desire, some of our data on the Soviet cruise missiles and their costs. And if we could successfully obtain cost data from DOD, we could put together a comparison of the costs and characteristics of Soviet and United States cruise missiles.

Senator Proxmire. You still have an infinity question, don't you? They can't produce them.

Mr. Barry. Yes, sir. The infinity question obviously can't be solved. If there's any single product that can't be produced in the other country, it's unsolveable.

[Security deletion.]

Trends in Technology

Senator Proxmire. What are the trends in United States and Soviet technology? We're generally ahead, I take it. Or are we ahead?

Admiral TURNER. Oh, yes. I think as a generalization, that is true. I think two factors apply: That they are surely closing that in many areas; and second, that sometimes our technological advantage is overstated because they do a simpler technique, but perhaps more brute force, in a sense, and achieve the same end objectives.

We tend to, in my personal opinion, over-sophisticate our weapons and our platforms.

Senator PROXMIRE. I have a list here of relative U.S.-U.S.S.R. standing in the most important basic technology areas, and I'll go down them and see if this list is correct.

It shows aerodynamics, fluid dynamics, U.S. and U.S.S.R. equal. You might interrupt me if there's any place where I'm in error here.

Automated control, U.S. superior; computer, U.S. superior; military instrumentation, U.S. superior; directed energy, U.S.-U.S.S.R. equal; electro-optical sensor, U.S. superior; guidance and navigation, U.S. superior; hydroacoustic, U.S. superior; intelligence senor, U.S. superior; manufacture, U.S. superior; materials, lightweight and high-strength, U.S. superior; microelectronic materials and integrated circuit manufacture, U.S. superior; nonacoustic submarine detection, equal; nuclear warhead, equal; optics, U.S. superior; propulsion, U.S. superior; radar sensor, U.S.-U.S.S.R. equal; signal processing, U.S. superior; software, U.S. superior; and telecommunications, U.S. superior.

Those are the list here, as the most important——

Mr. WEAVER. I think that's a list that's used in the Secretary of Defense's defense posture statement. We've looked at that list, and we do not have any disagreements with it.

[Security deletion.]

Senator PROXMIRE. If we put dollar values on all the systems where we lead technologically, and which the Soviets do not know how to produc, would that raise the size of the U.S. defense budget relative to theirs by a very substantial amount?

Mr. BARRY. Mr. Chairman, there is a difference, I think, between areas in which the United States leads technologically, and categories of systems that the Soviets cannot produce. For example, it certainly would be possible—though difficult and more costly—for the Soviet Union to reproduce many of the characteristics and performance of some of our advanced aircraft, despite the fact that we have a technological lead in many areas.

One of the elements of the comparison in rubles, which is one of the ways of getting around the index number problem, is to attempt to compensate for U.S. technological advantage that would be proportionately more costly to the Soviet Union. And as I pointed out earlier, we have made an attempt to do that. That is a major part of the reason for the difference in the comparative levels of resource inputs when measured in dollars and rubles.

SALT

Senator PROXMIRE. Now, a breakdown of the military missions, according to your calculations, shows Soviet costs of military missions three times larger than U.S. costs in 1979. Can you discuss what the Soviets are likely to do in the way of new strategic programs in the

event that SALT completely fails, and all restraint on strategic arms is dropped, what the cost may be?

[Security deletion.]

Senator PROXMIRE. In the absence of SALT, we face that additional gamble, threat.

Admiral TURNER. That's correct. Even within the SALT limits, if they start early in the 1980's, they can, in my opinion, match the prospective plan.

Senator PROXMIRE. Even with SALT?

Admiral TURNER. Even with SALT, they can match the MX shelters as rapidly as they come in.

[Security deletion.]

READINESS

Senator PROXMIRE. Now, with respect to readiness in previous hearings, we discussed Soviet readiness standards, and the fact that Soviet troops do not generally exercise with front-of-the-line equipment. The Soviet pilots have much less flying time with their aircraft. Soviet ships have much less steaming time than they're in port than the United States, and the Soviet ICBM's are less ready than U.S. missiles.

Have there been any significant changes in the Soviet practice in these respects?

Admiral TURNER. No, sir.

Senator PROXMIRE. So you would agree that U.S. standards of readiness will result in greater proficiency of U.S. manpower?

Admiral TURNER. Generally, yes. I would say this; that I believe the Soviet philosophy is to be able to have a very high level of materiel readiness at times of their choosing. Our philosophy is to have a very high readiness, a constant high readiness, at all times. In short, when the Soviets peak for war, I think they will be very ready, and perhaps they can afford that, whereas we can't. So we go to a high exercise mode.

They are much more, I believe, conscious of their materiel readiness problems, and have a philosophy that not operating it too much will leave it in better shape. It goes back to a statement you made that they use more depot maintenance.

Therefore, when an operator gets a flyable aircraft from the depot, he's reluctant to put too many hours on it, if you see what I mean. Because it's got to go back to the depot. So his sense of readiness is to have that within his nondepot limits. We do so much more of our maintenance on the line that that doesn't constrain us as much. It's an entirely different philosophical approach to readiness.

Senator PROXMIRE. Is the estimate that the Soviets have [security deletion] of their divisions fully combat-ready?

Admiral TURNER. [Security deletion.]

Senator PROXMIRE. How does that compare with our readiness? Ours is probably worse, isn't it? We've read about 10 Army divisions, that 6 of them are not all ready. Three of the remaining four are in a state of readiness. Only the 82d Airborne is considered ready. Is that right?

Admiral TURNER. You're out of my territory here, sir. I really don't have that data.

Oil Production

Senator Proxmire. I mentioned the controversy over the oil estimates in my opening statement. Several years ago, you predicted that Soviet oil production would peak at 11 to 12 million barrels per day. They're currently producing 12 million barrels a day, or slightly higher.

Are you surprised that they are at the upper end of the range you predicted, and is it possible that they might exceed the present range of production.?

Admiral Turner. John?

Mr. Eckland. I wouldn't say that we're surprised that they're at the upper end of the range. Forecasting oil production is difficult when you have all the data, as the Department of Energy can attest in this country. The range was there because we weren't certain. We would be very surprised, given what we have observed, with the short-term measures they're taking now to achieve this level of production if it were to go substantially above its present level.

Senator Proxmire. Is it possible that even if Soviet oil production declined substantially, the U.S.S.R. may not become a net oil importer?

Admiral Turner. Yes. They have certain slack factors built in. The room for conservation is there. But it's much less than with us, of course.

Senator Proxmire. Does that alter your conviction that they're going to become an oil importer?

Mr. Eckland. Our predictions in 1977 were that the bloc, the combination of the Soviet Union plus Eastern Europe and Cuba would become net oil importers.

Senator Proxmire. Is that still your prediction?

Mr. Eckland. Yes.

Senator Proxmire. Now, the Swedish Soviet research institute called Petrostudies Co. also disagrees with your Soviet oil estimates. It concludes that your oil estimates vastly understate the amount of Soviet proven reserves. It concludes that your estimate is lower than the actual reserves by a factor of 4.

Admiral Turner. But you see, that's not germane. I've said to you already today that in the 1990's, their reserves will come into play, and they will be an increasing producer of oil. The Swedes are just talking about an entirely different problem. We're talking about the 1980's and what they can produce, not what they have for reserves in the ground.

Senator Proxmire. I'm talking about proven reserves.

Mr. Eckland. Yes, Senator.

Senator Proxmire. Proven reserves are produced.

Admiral Turner. Not unless you've got a well in them.

Mr. Eckland. Senator, there's another question. The Soviet reserve system books oil in place, of which about one-third, given world oil industry standards, will be producible. Now, we spent considerable time in the conference we had in Reston discussing reserves.

Senator Proxmire. Let me ask you this. Do you agree or disagree with the Swedish research institute's estimates?

Mr. ECKLAND. We disagree quite vehemently, as did almost everyone at the conference we had.

Senator PROXMIRE. You disagree that the reserves are as large as they estimate?

Mr. ECKLAND. If we're talking about reserves of oil, which means oil that has been discovered and they know where it is, yes, sir.

Senator PROXMIRE. You disagree?

Mr. ECKLAND. Now, if we're talking about potential, which is oil that may not be discovered yet, we don't have a position on that.

Senator PROXMIRE. Now, the Soviets are expending an enormous amount of money on new gaslines to West Europe. This proves that they're planning to increase their sales of natural gas to the West, because they see no energy shortage for themselves in the future. At least it suggests that, doesn't it?

Mr. ECKLAND. No, I don't think so, Senator. The thing you have to remember first about the Soviet Union is that their demand is much more influenced by seasonal factors than is U.S. demand. In the Moscow area, fuel consumption in the winter is about 2½ times what it is in the summer. The problem they have with gas is that gas is not for them a storable fuel. Their own literature says they would have to increase the amount of underground storage capacity for gas by a factor of 15 to 20 from where it is now for them to be able to progress much further in substituting gas for oil in their domestic economy.

GAS

Senator PROXMIRE. As I recall in your presentation, you also argued that while they had problems with coal and oil, their gas was relatively abundant.

Mr. ECKLAND. They don't have a production problem with gas, Senator. It's a phasing problem over the season. Right now, they've got roughly constant seasonal consumption of gas. In other words they use as much as they can in the summer. They switch over a lot of their powerplants from oil to gas in the summer months.

The problem is that when the demand rises in the winter, they don't have the possibility to increase gas production. So the situation they're going into in the future is that they'll have surpluses of gas during half of the year, and they'll have shortages of gas during half of the year.

Senator PROXMIRE. But can they convert to using gas in place of coal and oil?

Mr. ECKLAND. They have done so. Almost all of their electric powerplants, which are their largest consumers of oil at the moment, are dual-fuel plants. They burn gas in those plants in the summer, when demand from other sources—heating and so forth—for gas is not high. In the winter, they switch these plants over to oil, which is a storable fuel.

Senator PROXMIRE. So, the likelihood of a shortage is somewhat diminished.

Mr. ECKLAND. Obviously, the availability of gas is the one great plus in the Soviet energy picture.

China's Economy

Senator Proxmire. Now, there's a rollcall vote on the floor. I'm going to have to go in a few minutes. I don't want to give the Chinese economy short shrift. Could you give us a summary of that?

Admiral Turner. The situation is about the opposite of the Soviet Union in that the Chinese are willing to encourage productivity, to put more into agriculture, and to encourage consumer goods production, and they're willing to make reforms in the management of their economy, specifically allowing market forces to have greater play. So, the Chinese have been achieving about a 6-percent rate of growth of GNP. We think they'll come close to that this year; that they'll aim for about 6 percent through much of the 1980's, but won't quite make it.

In short, overall, the Chinese economy is not in the dire straits that we think the Soviet economy is. But they really do have some constraints themselves, particularly in the energy field, also. Energy has not been developing as rapidly as they had hoped, and will be a constraint.

Another major constraint is simply their ability to absorb new technology, new investment. They have tapered off in their purchase of plant from the West, because they simply haven't got the technical capability, partly due to the Cultural Revolution and its disdain for scientific education, to absorb this amount of new plant.

At the same time, with their opening up and their shift to a more consumer-oriented economy, the opportunities for U.S. exports to China have really grown, particularly in cotton, grain, fertilizers, and light machinery, and in transportation equipment. Our trade with China will double this year, from about $2.3 billion last year to about $4 billion this year, and it'll leave us with a $2 billion surplus on this account.

Mike, are there one or two other points that we should hit for the Senator before he has to leave?

Senator Proxmire. Supposing I do this. I'm going to go and vote, and I'll come back, because I think this is too important an issue simply to summarize. So I'll be back in about 10 minutes. I'll run over and vote and rush right back.

[A short recess was taken.]

Senator Proxmire. All right, sir. Go right ahead.

Economic Reforms and Defense

Admiral Turner. I think the only other thing I want to say—and I will see if Mike Field wants to add anything more, Mr. Chairman—is that I didn't emphasize that we think Deng Xiaoping has pretty well established the momentum for his reforms and redirection of the Chinese economy. He's done it by placing his people in the right positions, by easing Hua Guofeng into what may be almost an honorific position, and by a general momentum that has been established in the economic sector.

You know, the Chinese have had these moves back and forth, these great leaps forward, these cultural revolutions. And there has to be a certain amount of skepticism within the system when a new program

like this comes along. We think they're over that, and that there will be a continuation of these programs on into the future, even without Deng Xiaoping, if he leaves the scene.

In short, they've abandoned an overly ambitious modernization program that this Chinese regime really started out with, in favor of greater emphasis on light industry, agriculture, and the consumer; and in favor or management reform, less centralization—some retention of profits, even, by some of the enterprises within the country. This has increased trade with the United States, with the West, and has also been partly because they've been willing to limit their defense expenditures to an annual increase of about 1 percent.

Nonetheless, we feel that their strategic forces have enough capability to survive an onslaught from the Soviet Union; that they do have a deterrent impact, though modest in size—only a couple of intercontinental ballistic missiles that can reach Moscow, 60 to 100 intermediate and medium range ballistic missiles that can reach the Soviet far east and the central Soviet Union—but that they do have a deterrent impact on the conventional side.

We feel that their military forces, while possessing obsolescent equipment—in part because of their size, in part because of their strategy of retreat, fight, retreat, fight—probably could hold off the Soviets short of Beijing if it came to a full-scale war.

The exception to that would be if the Soviets introduced tactical nuclear weapons to that kind of a conflict. So the Chinese appear to feel that this sort of military posture is adequate to their needs for the foreseeable future, since they really don't look like they're going to be able to make any substantial improvements. They're out to get all the technology they can, and one model of a lot of things, so that some day they can go into production with higher quality military equipment. Today, they neither can afford it, nor probably could they absorb it on top of the other things they need to do.

They just don't have the capability of developing sophisticated production lines for military equipment without really cutting into their basic economy. Mike?

Mr. FIELD. Thank you.

PRICE STRUCTURE

There are two things that I would say. One is, the economic reforms are at a very early stage. The Chinese are just beginning to work out how they're going to put a greater degree of flexibility into the economy. They are grappling with the problem now of how far and how much they wish to use market forces, and I think key to the success of these reforms is going to be reform in the price structure.

If they don't get a rational price structure that reflects the relative scarcity of different commodities in the economy, then a more flexible economy—one in which they use profits as a criterion for measuring success, and one in which they try to upgrade incentives, et cetera—then the wrong messages will get sent through the economy if they don't have the right price structure. Price reform will be difficult for them, but I think it will be key to the success of the reforms as a whole.

Senator PROXMIRE. Before you get away from that, I'm not sure what you mean by "price structure."

Mr. FIELD. Well, under the system that they used before—and which they in fact modeled on the Soviet system—the primary indicator of success for an enterprise is the gross value of output—just the value of the amount sold. No consideration for the efficiency with which the operation is run.

Senator PROXMIRE. Well, that value would be arbitrarily established by whatever price the authorities cared to put on the product.

Mr. FIELD. Price is set by the state. Enterprises produce as large a quantity as possible, with efficiency in production not being something that is particularly rewarded by that system.

Now, when they want to emphasize net value added in the manufacturing process, when they are using profits as an indicator of success, if the price structure is wrong, then an enterprise which is producing items that are not badly needed might have a large profit, because the price of inputs is set low, and the price of the output is set high. That would signal the manager to go ahead and try to produce more.

Whereas, if the prices were adjusted to reflect relative scarcity, then his profit might come down, and resources would be allocated somewhere else. So I think for the succcessful operation of the economic system they are planning, they do need a more rational price structure.

ENERGY

The other problem that I wanted to mention briefly is that of energy. In the short run, in the next 3 or 4 years, the output of energy is going to grow only very slowly. Offshore oil production is just barely getting underway. In south China, they have only just begun to drill. They've just completed the seismic work there. They have a tremendous hydroelectric potential, but planned projects will take a long time to develop.

China is an exporter of energy now, but we don't look for those exports to increase, and they might even be cut back. For example, under the long-term trade agreement with Japan, they're supposed to export 300,000 barrels per day next year, and they've already been telling the Japanese that they will not be able to export that much to them. So in the short run, energy constraints will be a problem.

SOVIET TROOPS ON BORDER WITH CHINA

Senator PROXMIRE. Admiral, has there been any change in the last year in the disposition of the 700,000 Soviet troops on the Chinese border?

Admiral TURNER. No.

Senator PROXMIRE. Can you tell us how long it would take the Soviets to move forces near China to Central Europe for a European contingency? How would they do it?

Mr. CARSON. There you're talking about essentially, Senator, the logistical support problems they would have in transporting those troops or their equipment out. There would be problems even if they

were just trying to move the troops and match them up with equipment that was available at a depot.

Essentially, you've got the trans-Siberian railroad, and whatever airlift assets that would be available at the time. Many of those airlift assets would already be focused on moving forces from the central part of the U.S.S.R. and from the western U.S.S.R. to supplement rail capability there.

Senator PROXMIRE. If they relied entirely on the railroads, how long would it take?

Mr. CARSON. I could get you an estimate. I don't have one in hand. I'm not sure that we have attempted to make such an estimate. Our feeling is that that would kind of be a last gasp resort in terms of reinforcement of their capabilities.

Senator PROXMIRE. Would it be any major problem to move those troops?

Mr. CARSON. No, the troops themselves would not be an insurmountable problem. I think the greater problem would be the question of what the impact in that region would be should they empty it out for a NATO confrontation in terms of what they might expect the Chinese to do in capitalizing.

Senator PROXMIRE. I think it would be inevitably a major problem. How do they move these troops? Moving 700,000 troops by rail would seem to me to be a rough——

Admiral TURNER. That's not our number anyway; is it? 700,000? [Security deletion.]

Senator PROXMIRE. Let me go back to the first question, then. How many Soviet troops are there on the Chinese border?

Mr. CARSON. I think the figure is roughly about 400,000. I'd have to check.

Senator PROXMIRE. My figures were wrong. I said 700,000.

Admiral TURNER. It's still a hard job to move that many people.

Senator PROXMIRE. At last year's hearings, there were 700,000.

Mr. CARSON. I'll doublecheck the figures, sir.

Senator PROXMIRE. Do that, because my first question was whether it changed. And 700,000 was what we understood it to be in last year's hearings.

Admiral TURNER. I could be wrong. I thought it was closer to 450,000. But we'll check that.

Mr. CARSON. I do, too.

Admiral TURNER. It's 43 divisions, right?

Mr. CARSON. Forty-plus.

Senator PROXMIRE. Are you saying that these troops are essentially tied down and not available for the European contingency?

Mr. CARSON. I think [security deletion] those troops are essentially tied down.

MINIMUM DETERRENCE

Senator PROXMIRE. Given the size and relatively small rate of increase in the Chinese defense budget, do you conclude that the Chinese leadership believes in some form of what we call minimum deterrence?

Admiral TURNER. Yes.

Senator PROXMIRE. Do the Chinese continue to urge Japan to increase its defense expenditures?

Admiral TURNER. Anybody have anything on that?

I think the Chinese, behind the scenes, may be doing that. I don't think they've come out publicly.

Senator PROXMIRE. They did before. At least, there was some indication. Wasn't that in public? It was my understanding that they did make a public appeal.

Admiral TURNER. I don't recall that.

Senator PROXMIRE. What types of technology or military hardware are the Chinese interested in obtaining from the United States?

Admiral TURNER. They've been exploring, it is my understanding, primarily in the fields of guided munitions and electronic components they'd like to get from us.

Senator PROXMIRE. Is there any truth to the press reports that Taiwan has been cooperating with Israel and South Africa in new weapons technology?

Admiral TURNER. None whatsoever, to our knowledge.

SOVIET-CHINESE RAPPROACHEMENT

Senator PROXMIRE. Last year, we discussed the possibility of a Soviet-Chinese rapprochement. Has there been any movement in this direction, and what are the prospects under the changed Chinese leadership?

Admiral TURNER. There has not been any real movement in this direction. I think that the primary factor in my mind would be whether the Chinese lose all confidence in the West, and feel they've got to make a rapprochement with the Soviets. I don't see that in the offing.

Most of us believe that such a reapproachment is not a likely event. Mike, do you want to supplement that?

Mr. FIELD. No, I agree. The situation is very much the same, and we don't look for any substantial——

TWO-CHINA POLICY

Senator PROXMIRE. Would a two-China policy on the part of this country, a revival of our treaty with Taiwan, and a recognition, full recognition, of Taiwan as an independent country—would that tend to promote a rapprochement?

Admiral TURNER. I don't know that it would promote a rapprochement. But it would certainly promote a rupture of the United States-Chinese relationship. The Chinese have been very adamant.

Senator PROXMIRE. You say that this would depend on what happens in the West, and I would think they would look to this country as the other superpower, as the most important ingredient. And if this would disrupt their relationship with our country, I would think that it would tend to promote a greater likelihood, at least of rapprochement.

Admiral TURNER. Certainly it would be a step in that direction. What I'm saying, though, is it will be a Chinese measure of U.S. and

Western resolve to stand up to the Soviet Union, as opposed to whether we are close friends with the Chinese. It would be more important to them in weighing how exposed they are to the Soviets. If they feel we're not going to keep the Soviets pinned down on their west, and have much more opportunity to take on the Chinese in the east, then they'll be more concerned.

Senator PROXMIRE. Then I take it the Chinese don't really feel that we constitute any military threat to them.

Admiral TURNER. I don't believe they do at this time, no.

U.S.-CHINESE TRADE

Senator PROXMIRE. Do you have any quantitative estimates of United States-Chinese trade in the next several years? You say increases are not likely to be dramatic. Can you put a dollar figure on this?

Mr. FIELD. Not on trade beyond next year. But we are expecting that this year will be about double what it was last year.

Senator PROXMIRE. Still, that keeps it very, very small, does it not? I mean compared to, say, our trade with Taiwan.

Mr. FIELD. I don't know what our trade with Taiwan is. But I think that the magnitude of trade is probably about the same as it is——

Senator PROXMIRE. As I recall, about a year or so ago, our trade with Taiwan was 10 times or more greater than with mainland China, the People's Republic. Maybe my recollection is wrong, but that is my recollection. Because we had so little with mainland China, it was infinitesimal. You say that will double. but it's still doubling from a very very small base.

Mr. FIELD. From a small base. Taiwan's total trade and China's total trade are roughtly the same.

Senator PROXMIRE. Their total trade with all countries?

Mr. FIELD. With all countries are roughly the same. Our trade with Taiwan has been larger than that with China.

[The following information was subsequently supplied for the record:]

PEOPLE'S REPUBLIC OF CHINA AND TAIWAN TRADE IN 1979

[In billions of U.S. dollars]

	People's Republic of China	Taiwan
Exports (f.o.b.):		
Total	13.7	15.8
To the United States	.6	6.4
Imports (f.o.b.):		
Total	14.5	14.4
From the United States	1.7	3.3

Senator PROXMIRE. [Security deletion] China was the extent to which their new economy—which I think from the standpoint of the Chinese is likely to be very helpful and very progressive, and increase their production; all the indications, certainly in recent years, have been that the country's being decentralized would provide this kind of incentive, and it would be very useful and effective.

Do you have any projections of how large our trade may grow as their economy increases? Are they increasing their production in areas that would result in exports to this country, and needed imports from us?

Mr. FIELD. Major areas in which I think they will have difficulty expanding trade to this country—textiles, for example, have been a major and rapidly growing export. But that will be limited under the terms of the textile agreement, and by the nature of the world market.

I think that a lot of the future Chinese exports—our imports from China—will have to be in light industrial lines where they don't now have very much capacity. They will have to develop new abilities and new lines of products to be able to increase their sales very rapidly.

ECONOMIC OBJECTIVES

Senator PROXMIRE. Would their economic development indicate that it could give them a substantially greater military potential? Or is it mainly oriented in the direction of consumption and so forth, and unlikely to increase their industrial capacity to produce, say, tanks and planes and other military equipment?

Mr. FIELD. I think as their economy develops and modernizes, their ability to produce military equipment and master military technology will certainly increase. But the emphasis in their plans now is on agriculture, on increasing the amount from light industry that is available for consumption, to improve standards of living, and to provide goods for export to earn the foreign exchange they need for the purchase of technology and plant and equipment.

MILITARY BURDEN AND GNP

Senator PROXMIRE. I take it you said that the Chinese are increasing their military expenditures in real terms by about 1 percent a year. What percentage of the gross national product does that represent?

Admiral TURNER. Roughly eight.

Senator PROXMIRE. Eight percent? How does that compare with the Soviet and American gross national products?

Mr. FIELD. Their gross national product is, by our measurement, about $500 billion. That is based on a purchasing power comparison that dates back to detailed data that was available in the 1950's. They themselves have recently started to estimate GNP, and they have published a figure of $253 per capita, which would work out to just under $250 billion in total. That figure is put into dollars at the trade rate of exchange.

So, for example, figures that are available at the IMF on a trade-rate-of-exchange basis are about $250 billion. On a purchasing power parity basis, which tries to measure the strength and effectiveness of the economy, it's something like $500 billion.

Senator PROXMIRE. So their gross national product is about one-fifth of ours, and what—about 40 percent of the Soviet Union's?

POPULATION

To what degree is Chinese economic development dependent on controlling the growth in population?

Mr. FIELD. I think that is their most serious long-run problem. The rate of growth of the population has come down quite considerably in the last decade. It is currently between 1 and 1½ percent, and as long as they can maintain their family limitation program, they can have increases in the standard of living.

If for some reason or other they would relax this campaign, they could literally eat up the gains that they are now in the process of achieving. So it's a crucial longrun problem.

Senator PROXMIRE. I want to thank you very, very much, Admiral Turner. You've done a fine job, and as usual, your presentation's been excellent, and we very much appreciate your testimony.

Admiral TURNER. We are pleased to have the chance.

Senator PROXMIRE. Again, I'd appreciate it very much if you could sanitize the hearing, particularly with respect to the Soviet economy.

Admiral TURNER. Fine.

Senator PROXMIRE. Thank you.

[Whereupon, at 12:50 p.m., the subcommittee adjourned, subject to the call of the Chair.]

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