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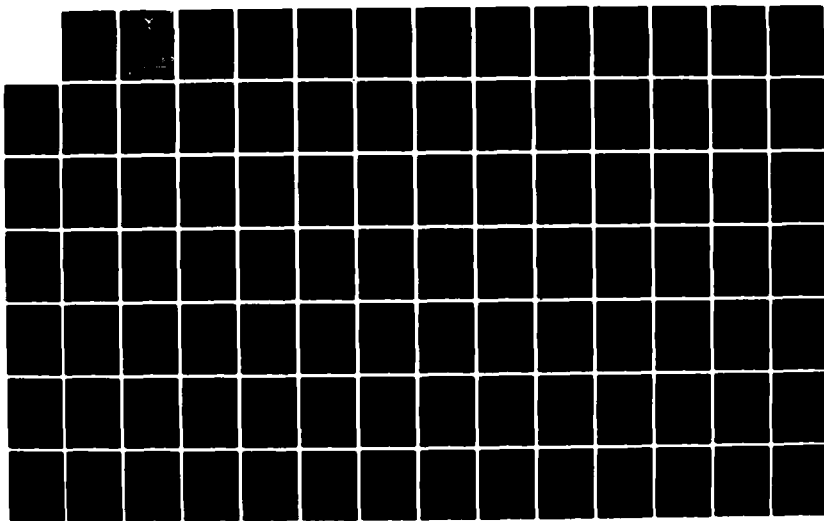
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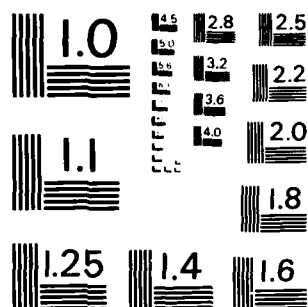
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SOVIET STRATEGIC AIRLIFT

Steven C. Mason, Captain, USAF
Catherine M. Robertello, Captain, USAF

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Over the past decade, Soviet airpower, especially strategic airlift has become an increasingly important instrument in the projection of Soviet military power. Followers of Soviet military affairs have given considerable attention to the development and deployment of new Soviet weapon systems, especially new combat aircraft such as the Backfire, Fencer, and Foxbat. Western scholars have generally treated Soviet airlift capabilities as almost an afterthought in the literature, usually under the category of other interventionary forces. Therefore, the objective of this research is to identify and evaluate the role of Soviet airlift in the projection of military power to include the doctrinal environment in which Soviet airlift capability evolved, the Soviet airlift capabilities from an organizational and operational perspective, and the assets and liabilities the Soviets have in their use of airlift as a power projection tool.

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SOVIET STRATEGIC AIRLIFT

A Thesis

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Logistics Management

By

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September 1983

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This thesis, written by

Captain Steven C. Mason

and

Captain Catherine M. Robertello

has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT

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CHAPTER 1

INTRODUCTION

Background

At the present stage the historic functions of the Soviet Armed Forces is not restricted merely to their function in defending our motherland and the other socialist countries. In its foreign policy activity, the Soviet state actively, purposefully opposes the export of counterrevolution and the policy of oppression, supports the national liberation struggle, and resolutely resists imperialist aggression in whatever distant region of our planet it may appear (10:A1-A18).

Marshall Grechko, politburo member and Minister of Defense, made this unprecedented statement in 1974 to inform Soviet party members that the responsibility of Soviet Armed Forces is not limited to defense of the motherland, but includes the intention to project military power to any point of Soviet interest, worldwide. This policy shift added an external role to the military doctrine and marked a major Soviet effort to upgrade its air transport capability (40:57).

This external role was assigned to Soviet Armed Forces for three major reasons. One was to support increased Soviet foreign political commitments, especially several bilateral treaties with various third world countries. For example, Soviet friendship treaties were established with South Yemen, Ethiopia, Afghanistan, Mozambique, Angola, and Iraq. Secondly, based on these treaties, Russian support

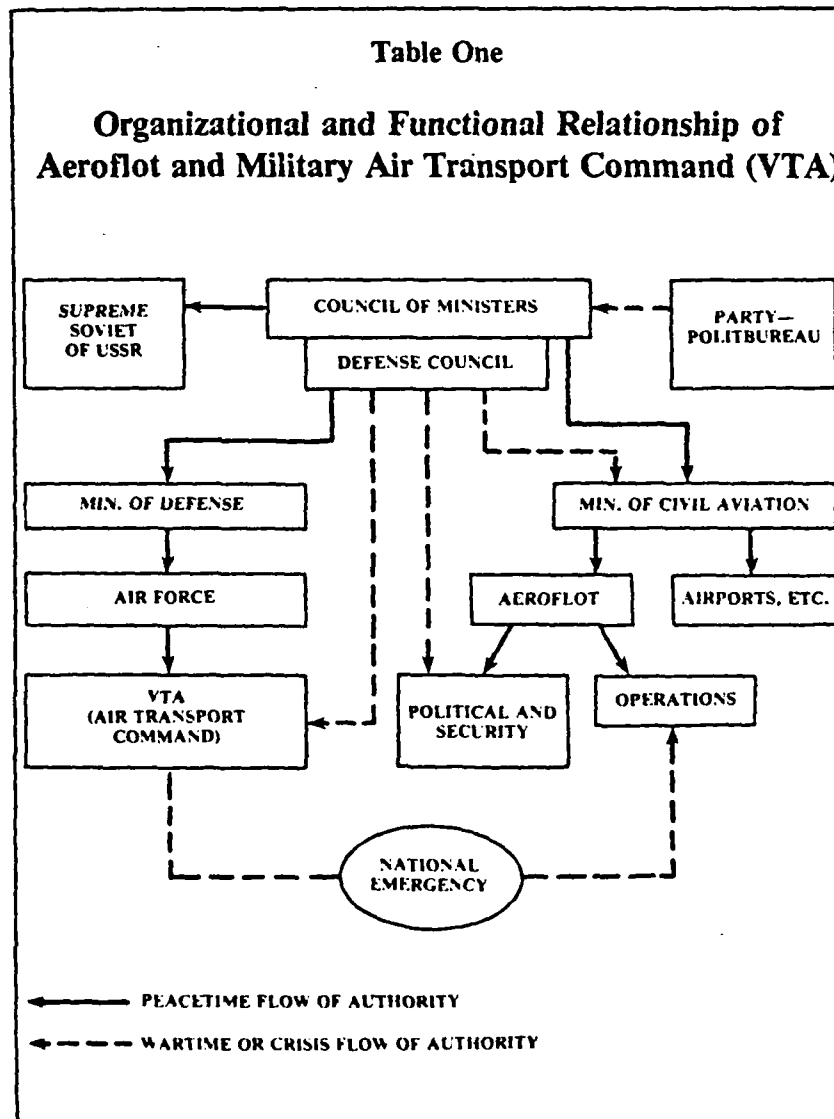
was extended beyond the Warsaw Pact countries and U.S.S.R. proper. Finally, the external role of the Armed Forces was required to thwart the expansion of American "imperialism" while simultaneously spreading socialism (16:37-38).

To complement these strategic concepts, Russia has expanded and modernized its power projection capabilities. Efforts to improve Soviet power projection can be better understood with an overview of the Soviet air transport organization followed by a review of past recent examples of Soviet air transport use.

The total Soviet air transport capability is vested in both military and civilian organizations. The military arm of Soviet air transport is the Voyenna-Transportnaya-Aviatsya, or more commonly, the VTA. With almost 1300 transport aircraft, the VTA provides both peacetime and wartime strategic military airlift for the Ministry of Defense. Complementing the VTA is the Soviet Civil Air Transport System or Aeroflot. With a 1650 plane fleet, Aeroflot is the world's largest airline in terms of scheduled route mileage and passengers carried. Figure 1-1 shows the relationship that both Aeroflot and VTA have in peacetime and wartime environments (28:39). The basic

FIGURE 1-1

ORGANIZATIONAL AND FUNCTIONAL RELATIONSHIP OF
AEROFLOT AND MILITARY AIR TRANSPORT COMMAND (VTA)



difference, peacetime to wartime, is that in wartime Aeroflot is no longer under the jurisdiction of the Council of Ministers, but joins the VTA under the Defense Council. It is through the Defense Council, then, that the VTA uses both personnel and material assets of Aeroflot to support military airlift needs.

At times in recent memory, the Soviets have relied on either or both the VTA and Aeroflot to provide their air transport requirements to intervene in events of international importance. Shortly after the November 1956 uprising in Hungary, Soviet forces were airlifted in to quell the civilian outburst and to help install a Soviet controlled puppet government (40:201). When Czechoslovakia sought independence from the Soviet Union in 1968, Soviet air transport of necessary military personnel and supplies enabled the Soviets to seize control of the airfield at Prague, stop the independence movement, and maintain Soviet control over Czechoslovakia (40:202). Employment of Soviet air transport capabilities have occurred outside the Warsaw Pact countries as well. Shortly after the 1967 Israeli-Egyptian six-day war, the Soviets bolstered several Arab states with tons of military arms and equipment. Egypt, Syria, Algeria, and Iraq all received support via some 350 flights of Russian transport aircraft (47:41). Again, during the 1973 Middle East War, the Soviet Union airlifted war materiel to Arabs, flying almost 1000 sorties to supply the Egyptians with more than 15 million tons of

supplies (3:65). Soviet capability is not limited to equipment, arms, and supplies as evidenced during the 1975-1976 Angolan conflict, when Aeroflot airlifted an estimated 25,000 Cubans to Angola (16:35). Shortly after the Angolan conflict, over a 3-month period in 1977-1978, Moscow airlifted 600 armored vehicles, several tanks and over 400 artillery pieces to Ethiopia (29:113). Most recently, in December 1979, Soviet Troops were airlifted into Afghanistan, participating in the ousting of the Afghani government and installing a Soviet controlled puppet government (47:41).

From the preceding examples, certain conclusions can be drawn about the direction of Soviet airlift strategy:

1. Present Soviet doctrine clearly assigns an external role to its Armed Forces; thus the Soviet Union is now involved in areas where it never before ventured.
2. Quantitative increases and qualitative improvements are increasingly visible, are likely to continue, and possibly will accelerate later in this decade. These changes allow the Soviet Union to project military power more rapidly as well as to sustain forces in distant areas for longer periods of time. The previous examples of Soviet power projection are in part testimony to the quantitative increases and qualitative changes the Soviets have made.
3. Although the Soviet power projection capability is certainly intercontinental, they still place high priority on their periphery--such as Eastern Europe, the Middle East, South and Southeast Asia. Although the Soviets have a projection capability to many Third World countries. their immediate border, where the Soviet naval and ground forces are concentrated, remains their primary protection priority (16:43).

Problem Statement

Over the past decade, Soviet Airpower, especially strategic airlift, has become an increasingly important instrument in the projection of Soviet military power. Followers of Soviet military affairs have given considerable attention to the development and deployment of new Soviet weapon systems, especially new combat aircraft such as the Backfire, Fencer, and Fosbat. Western scholars have generally treated Soviet airlift and airborne capabilities as almost an afterthought in the literature, usually under the category of the interventionary forces. Therefore, the study and analysis of the role of Soviet airlift in the projection of military power remains to be accomplished.

Research Objective

The objective of this research is to identify and evaluate the role of Soviet airlift in the projection of military power.

Research Questions

1. What is the doctrinal environment in which Soviet airlift capability evolved?
2. What are the Soviet airlift capabilities from an organizational and operational perspective?
3. What are some of the assets and liabilities the Soviets have in their use of airlift as a power projection tool?

Scope

As previously identified, there are two major sectors of Soviet transport aviation: military (VTA), and civilian (GVF or Aeroflot). As these are closely linked organizations, both must be considered for a proper evaluation of Soviet airlift. This study will focus on Soviet Strategic Airlift, or more specifically on fixed-wing transport aircraft. Soviet Strategic Airlift is "the element of aviation intended for airborne assault landing operations; for transporting troops and combat materials; for delivering armament and materiel to troops and bases; and for evacuating sick and wounded personnel (18:42)¹.

¹This is contrasted by the U.S.A.F. definition of strategic airlift: that airlift which may be applied to effect a strategic advantage, characterized by the continuous or sustained air movement of units, personnel and logistics support between the CONUS and overseas areas and between area commands. Strategic airlift forces will, when required for augmentation of tactical airlift forces, effect delivery of forces into objective areas with airdrop or land delivery as far forward as the tactical situation permits (46:662).

The U.S. parallel definition of tactical airlift is: the means by which personnel, supplies, and equipment are delivered by air on a sustained, selective, or emergency basis to dispersed sites at any level of conflict throughout a wide spectrum of climate, terrain, and conditions of combat. Air Force tactical airlift forces enhance the battlefield mobility of the Army in ground combat operations by providing a capability to airland or airdrop combat elements and providing these forces with sustained logistical support. Air logistical support permits rapid delivery with a minimum of transshipments from source to final user destination. In furtherance of the combat mission of the Army, the Air Force will sustain an Air Line of Communication to division and brigade bases (46:688).

Justification

The ability to project power on a global scale has helped the Soviet Union to reach and maintain superpower status. Recently, the Soviets have bolstered their dominant military posture on the Eurasian landmass with the development of a substantial Soviet military capability to reach remote areas of the world. Since the bolstering of their military capability coincides with their political military objectives, we should be aware of what these changes mean to U.S. interests. Soviet political interests, especially in the third world, have changed in scope over the past decade. In response, the Soviet Military Airlift substantially augmented their potential for worldwide as well as regional strategic airlift operations. According to William Schneider in his article, "Soviet Military Airlift: Key to Rapid Power Projection," the Soviets "will be capable of challenging American interests in most areas of the world during the coming decade (16:80)." A study to identify and evaluate this capability is necessary in order for the U.S. to meet these challenges.

CHAPTER 2

METHODOLOGY

Overview

The previous chapter introduced the background material of and objectives for this thesis. This chapter presents the methodology used to research and evaluate the material mentioned in the preceding chapter. The objectives of this research paper will be met by a thorough review and evaluation of the current literature. The research plan is presented first, indicating the sources and method of information collection. The analysis plan explains the methods used to analyze the information and provide answers to the research questions. Finally, the limitations section states the limitations on the research and information gathering methods, and identifies any limitations pertaining to this research effort.

Information Collection Plan

A number of studies related to this thesis were obtained using Defense Technical Information Center (DTIC) resources. These studies provided some additional information and background material. Areas addressed using DTIC were Soviet Power Projection, Air Power, Air Transport, Strategic Airlift, and Military Strategy. Also, information was obtained by a variety of other means, including telephone and personal interviews, trade journals,

periodicals, and published texts on the subject. A continuing effort was made to survey literature available from the Defense Documentation Center, Defense Intelligence Agency, Rand Studies, AFIT School of Systems and Logistics library, AFIT School of Engineering library, Wright State University library, and the University of Dayton library. The DTIC search provided some useful sources; however, the most useful sources were obtained from the AFIT libraries.

Information Analysis Plan

The goal of the information analysis was to meet the research objective and answer the research questions previously listed in Chapter 1.

To answer question one, "What is the doctrinal environment in which Soviet airlift capability evolved?", a review of historical examples of Soviet use of strategic airlift was derived from translations of Soviet policy statements. Also, we examined Soviet foreign political commitments and related doctrinal evolution. These efforts enabled us to trace the doctrinal evolution of Soviet strategic airlift.

The second research question, "What are the Soviet airlift capabilities from an organizational and operational perspective?", was answered by analyzing the following six factors:

1. Range of aircraft.
2. Payload capabilities.
3. Loading/offloading capabilities.
4. Geographic reaction requirements.

5. Organizational structure.
6. Type and number of aircraft.

To answer research question three, "What are some of the assets and liabilities the Soviets have in their use of airlift as a power projection tool?", we evaluated the assets and liabilities of Soviet airlift as a projection tool. An analysis was conducted of the positive attributes of Soviet airlift which enable the Soviets to meet political and military objectives. This was contrasted with those characteristics which inhibit Soviet airlift use.

Collectively, in answering these three questions, the research objective is then achieved. Today's role of Soviet airlift in the projection of Soviet military power is identified and evaluated.

Limitations

In addressing this study's limitation, the available unclassified information is not substantially different, in fact or figures, from any classified literature. Although much information concerning Soviet strategic airlift doctrine, capabilities, assets, and liabilities is classified, this research effort will not address, evaluate, or report any classified material.

CHAPTER 3

SOVIET MILITARY DOCTRINE

Overview

A review of the Soviet Military Doctrine is necessary to understand the development of Soviet Armed Forces. The discussion will begin with some basic tenets of Soviet Military Doctrine. This will be followed by a review of three specific periods in post World War II Armed Forces development. The evolution of Soviet Airlift Doctrine can be traced through the historical events of these periods. The first period is from 1945 to Stalin's death in March 1953. The second is from April 1955 to the advent of Rocket warfare in 1959. The final period starts in 1960 and continues to present day (40:37).

Soviet Military Doctrine

According to the Dictionary of Military Terms: A Soviet View doctrine is defined as

VOYENNAYA DOKTRINA (Military doctrine)-- A nation's officially accepted system of scientifically founded views on the nature of modern wars and the use of armed forces in them, and also on the requirements arising from these views regarding the country and its armed forces being made ready for war.

Military doctrine has two aspects: political and military-technical. The basic tenets of a military doctrine are determined by a nation's political and military leadership according to the socio-political

order, the country's level of economic, scientific and technical development, and the armed forces' combat material, with due regard to the conclusions of military science and the views of the probable enemy (6:37)

This basic definition is further explained by the late Soviet Minister of Defense, Marshall Andrei A. Grechko, as "a system of views on the nature of war and methods of waging it, and on the preparation of the country and army for war, officially adopted in a given state and in its armed forces (40:37)." The purpose of doctrine, according to Grechko, is to answer six basic questions:

1. What enemy will have to be faced in a possible war?
2. What is the nature of the war in which the state and its armed forces will have to take part?
3. What goals and missions might they be faced with in such a war?
4. What armed forces are needed to perform the assigned missions and in what direction must military developments be carried out?
5. How are preparations for war to be implemented?
6. What methods must be used to wage war?

Military Doctrine is concerned with future war (40:37).

Two Soviet laws of war identify the relationship between political and military thought. The first law delineates the control of politics over military. "The nature of a political goal has a decisive influence on the conduct of war (3:38)." Marshall Ogarkov emphasized the subordination of strategy under politics. Politics determines the goals of war, the methods of its waging, and assigns specific tasks to strategy, while mobilizing the necessary resources and manpower for the needs of war (40:XX). The second law parallels the Soviet goal to

achieve the superior correlation of forces during war or peacetime. The force with military strength and intelligent strategy for the situation will win the war. The emphasis is on creating superiority in the correlation of forces and to use it to their advantage (7:38).

Five main factors of military doctrine are derived from these two laws of war².

1. surprise attack on the enemy,
2. securing and maintaining the initiative from the outset,
3. strategic attack,
4. swift purposeful operations,
5. complete destruction of the enemy in his own territory(1:95).

These factors were reflected in the external development of Soviet forces and Soviet strategy.

²The U.S. parallel to Soviet doctrine is that U.S. military doctrine is primarily formulated to support our basic national security objective which is: "to preserve the U.S. as a free nation with its fundamental institutions and values intact(48:1-1)." Based on this doctrine, nine principles of war provide guidance for the most efficient and effective employment of aerospace power. They are: define the objective, offensive (initiate the action), mass (force concentration), economy of force (no more, no less than necessary), surprise, security, unity of effort (integrated, responsive, decisive), maneuver (moves/countermoves), simplicity (quick, clear, concise), timing and tempo, defensive (equals a good offense) (49:5-4).

1945-1953

Major General S. Kozlov identified the 1945 to 1953 period of Soviet military doctrine in his article, "The Development of Soviet Military Science after World War II" when he wrote,

In the first post war period the development of Soviet military theory predominantly proceeded along the traditional path of generalization and analysis of the experience of the past war, of working out on this basis conclusions and recommendations for the conduct of armed conflict by ordinary (conventional) means. This period may be considered as 1946-1953 (20:29).

Since the October Revolution of 1917, the evolution of Soviet military science has gone through several phases. Though this evolution has experienced several significant transformations, none was as massive nor rapid as the changes brought about by the introduction of nuclear weapons into the armed forces during the period 1945 to 1953. These changes are referred to as the modern revolution in Soviet military affairs. While this revolution was mostly a nuclear revolution, it also included the application of other sciences and technologies in the Soviet drive for across-the-board military-technical superiority (7:20).

In spite of the development of nuclear weapons, studies during this period consisted of a World War II "lesson learned" type of study. Discussion of doctrine was prohibited during Stalin's lifetime. Although senior Soviet officers may have recognized that the nuclear weapon had brought about basic changes in warfare, they had to act as

if these weapons did not exist (40:38).

This was possible because the strategic situation confronting the U.S.S.R. after World War II's conclusion was radically changed from the prewar situation. Although traditionally strong, Germany was in ruin; and regional power Japan was reeling from its defeat. Hence, the traditional pressures on Russia's eastern and western peripheries no longer existed, and both Europe and Asia, weak from the trials of war, were open to the advances of Communist military and political forces. The United States was the only country powerful enough to thwart Soviet imperialist advances (19:220).

Given this situation, the Soviets focused their efforts on obtaining air superiority with new weapons and forces. War for the Soviets became an intercontinental rather than a periphery threat. Thus, until Stalin's death in 1953, airlift was put on the back burner while the buildup of intercontinental bombers increased (19:220).

1953-1960

Marshall Su R. Malinovski in his article, "Historical Exploits of the Soviet People and their Armed Forces in the Great Patriotic War," described three events in 1953 that are regarded having brought about the second postwar period in Soviet military doctrine: Stalin's death, the development of the hydrogen bomb, and the decision to mass produce long-range missiles as the primary delivery system for nuclear warheads (7:20).

The next stage in the development of the Armed Forces began in 1953. At that time a hydrogen bomb test took place in our country, and the mass production of various types of rockets was organized, which were to serve as the principal carriers of nuclear weapons. There was a high-speed development of various types of rocket and nuclear weapons, atomic energy, electronics, automation, and many different technical means of armed combat. This made it possible, in a relatively short period, to supply the Soviet Armed Forces with the most modern combat equipment, including such formidable weapons as intercontinental ballistic rockets with powerful thermonuclear charges (23:24).

Following Stalin's death, changes that one would expect, did not immediately take place. Stalin's hold on Soviet military thought, the traditional thought processes that characterized the first postwar period, lingered for almost half of this period's seven years. For this reason, the second postwar stage appears to have had two distinct phases. The first phase, 1954 to 1957 was devoted to the study of the nuclear weapon and plans for its employment were developed. By 1957, almost 1000 pages of material concerning modern wars and military doctrine had been written and presented to the Chief of the Soviet General Staff, Marshall V.D. Sokolovskiy (7:21).

This period's second phase, 1947 to 1960, was characterized by the production and deployment of long-range missiles, and as increased focus and study of the implications of nuclear weapons (7:21).

In 1958 a seminar--discussion began in the General Staff on problems of military art and a future war. All high-ranking officers, from army commanders up, representatives of all arms of troops, participated in these seminars. The seminars were of a secret nature,

and the conversations and discussions that took place there must not be revealed to any outsiders. The basic questions discussed were those of a future war and the state of Soviet military art.

By 1959 all the top military brains of the General Staff agreed that Soviet military doctrine needed to be revised. Future strategy must be developed on the basis, first of all, of the availability of nuclear weapons and missiles (31:251).

The years of Soviet study of the nuclear weapon and plans for its employment were culminated in December 1950 when the Strategic Missile Force was created as a separate force component; the Kremlin followed this event a month later by announcing a new nuclear doctrine (7:21). These events are regarded as milestones in Soviet military development and also as the beginning of the modern era in Soviet military doctrine, with "its main content the recognition of nuclear weapons as the chief means of combat (20:29)".

During this period, the shift of military doctrine from bombers to ICBMs as the primary nuclear delivery system, affected Soviet Air transport in a positive way. Aircraft designers, engineers, and facilities that were previously used to produce bombers, became increasingly available for air transport production (25:101). With these increased resources, air transports with turboprop and then jet powerplants were developed. Strategic Badger and Bear (B-52 complement) bombers were converted for transport use. Some of the initial designs, such as the IL-14, resembling America's DC-3, populated Soviet military airfields until

the early 1960's (39:158). Although during this period, air transport production and development prospered, there was no corresponding doctrinal development similar to the doctrinal study that accompanied the nuclear weapon.

Post Stalin Airlift development was still not a primary Soviet thrust. Three things influenced this direction: the advances and successes in rocketry; combined with the still weak Germany and Japan; and the perception of the States as an intercontinental threat. During this period Stalin's vast research and development programs started to pay dividends in terms of military hardware and weapons. In August 1953, Soviet scientists exploded a hydrogen bomb, dropped from an airplane. In 1955, two new jet bombers, the TU-16 (Badger) and the M-4 (Bison, similar to the B-52) were put in operation. In 1957, Soviet scientists put aloft the world's first artificial satellite and tested the world's first intercontinental ballistic missile. This does not suggest that advances in Soviet Air Transport did not take place, however one can easily see where Soviet emphasis was concentrated.

1960-Present

In early 1960, Khrushchev unveiled the third post-World War II change in military doctrine. In a speech before the Fourth Session of the Supreme Soviet of the U.S.S.R., he affirmed that

As stated at the Twentieth and Twenty-first congresses of the CPSU, there is no longer any fatal inevitability of war.

War will begin, not as it did in the past by invasions of frontiers, but by rocket strikes deep in the interior, and "not a single capital, no large industrial or administrative center, and no strategic area will remain unattacked in the very first minutes, let alone days, of the war."

Although the Soviet Union should expect a surprise attack, such an attack will not by itself win a war. Duplicate rocket sites have been constructed and there would be sufficient numbers of weapons surviving the initial strike to deal successfully with the aggressor.

Both atomic and hydrogen weapons, together with rockets to carry them, are possessed by the Soviet Union. If attacked, the USSR would "wipe the country or countries attacking us off the face of the earth." If the West starts a war, it would mean the end of capitalism. The USSR would suffer huge losses, but would survive...

The Soviet Union has better rockets than the United States and will seek to maintain that lead until agreement on disarmament is reached.

In Modern times a nation's defense capability depends on fire power, not on number of men under arms. Hence, due to possession of nuclear weaponry, the manpower of the Soviet Armed Forces would be reduced (18:146).

This early 1960 speech by Nikita Khrushchev unveiled the third post-war change in military doctrine and outlined concepts that the Soviet leadership believed would determine the nature of a possible war. Throughout most of the 1960s, Soviet military writings continued to stress the nuclear aspect of military power. Minister of Defense Marshal

Malinowsky's speech before the Twenty-second Party congress is characteristic of this period.

Since any military conflict, when the major powers are drawn into it, threatens inevitably to escalate into all-inclusive nuclear war, then we must prepare our Armed Forces, our country and all the people first of all and primarily to struggle with the aggressors in conditions of nuclear war (5:24-27).

Khrushchev's ouster in October 1964 had little effect on this doctrine. Soviet nuclear missile development and production continued throughout the 1960's, so that by the end of the decade, the Soviets perceived that they had achieved nuclear parity with the United States. This in turn led to the belief that a surprise ballistic missile attack by the U.S., while posing the greatest danger, was a decreasing threat. Therefore, in the late 1960's and 1970's, doctrinal modifications appeared that continued to extoll the thermonuclear war threat, while rekindling conventional warfare thought (52:522). In 1968, Marshal of the Soviet Union Zakharov reminded the members of the Soviet Armed Forces that,

Our military doctrine holds that a new world war, if the imperialists unleash it, will be a decisive clash of the two social systems and it will draw into its orbit the majority of the countries of the world, the powerful coalition of the socialist countries, united by unanimity of political and military goals, will oppose the aggressive imperialist block.

It will be a thermonuclear war according to the nature of the means of armed conflict used in war. The nuclear weapon will be the main and decisive means of waging world war, and the rocket will be the main means of delivering it on target. At the same time, all other kinds of weapons and combat equipment will find broad

application in the war (52:522).

Although Zakharov's writings reminded the Armed Forces of thermonuclear war, it also reminded of nonnuclear war. It is the latter vein that Soviet air transport development in the 1960's continued to prosper. Production efforts focused primarily on the AN-12 (Cub) and AN-22 (Cock), both turboprop powered aircraft, and the IL-76 (Candid) an as yet undeveloped jet transport.

Soviet policy during the Arab Israeli October 1973 War was to minimize two risks: an Arab defeat and a superpower confrontation. The strategy the Soviets used clearly reflects this policy. The Soviets used their own airlift to support the Arabs while pressing for peace in the negotiations. In response to the deterioration of Syrian military front, the Soviets launched an airlift of military supplies to Syria and Egypt. On October 10, 125 AN-12s flew to Syria, 42 AN-12s and 16 AN-22s flew to Egypt, and 17 AN-12s flew to Iraq delivering approximately 2750 tons of equipment. The airlift continued after this day but not quite as heavy. The pattern of airlift supply was managed as a response to political and military considerations. The airlift went first to Syria, then an even larger airlift to Egypt and to Iraqis when their participation was important to stabilize the Syrian Front. The Soviets demonstrated a well developed and responsive airlift capability in this war, delivering about 12,500 tons of equipment (32:18-23).

The Soviet policy followed during the October 1973 War

identified the way Soviet thinking was evolving. Their actions during the war reflected their belief that force and diplomacy are complementary courses of action. They favored a political settlement while at the same time they used airlift and sealift to deliver the means to launch a war. The Soviets negotiated for a ceasefire while mounting in an airlift of military equipment to clients engaged in actual hostilities. Their policy during an acute crisis appeared to follow one basic rule: promote the use of "enough force to maintain credibility with one's friends and clients "while engaging in diplomacy that would ensure the crisis would not lead to superpower confrontation (32:35-37).

Another revision of Soviet military doctrine took place in 1974 when Marshall Andrei Grechko stated, "that the mission of the Soviet Armed Forces was no longer restricted to defending our motherland and other socialist countries (38:48)." This signalled the Soviet intention to project military power and presence worldwide. By 1975 the Soviet Union reached nuclear parity with the U.S. which gave the Soviet Union a nuclear shield to project military power and presence worldwide with relatively little risk (38:48). The Soviets followed this revision with the commissioning of the aircraft carrier Kiev and, an airlift of weapons and military hardware to Angola. Support to other African countries followed in 1978 and Afghanistan in 1979. One of the leading Soviet research institutes, the Institute of World Economy and International Relations explained how the

nuclear shield allowed for a military doctrinal shift.

The possession of strong strategic superiority was always one of the most important prerequisites for pursuing an active foreign policy, since the very recognition of this superiority by other states often forced them into agreeing to certain and at times considerable concessions, or submitting to the demands of their more powerful rivals (38:58).

The Soviets borrowed theories from us as well. An American theorist of international relations, Nicholas Spykman, put his finger appropriately on the issue forty years ago:

There is no security in being just as strong as a political enemy, there is security only in being a little stronger. There is no possibility of action if one's strength is fully checked; there is a chance for positive foreign policy only if there is a margin of force which can be freely used (9:62-63).

Therefore, Soviet projection of military power, except attempts in isolated instances of volunteer and proxy forces, had to await the buildup of strategic nuclear forces (38:58).

When nuclear parity was reached with the U.S., Soviet military doctrinal revisions became more offensive in nature. Marshall Andrei Grechko summarized the essential elements of military doctrine in 1975, reiterating the concept of superior correlation of forces and signaling an offensive nature of the doctrine.

With regard to the military content of Soviet military doctrine... (the) Ideas of activeness of offensive and defensive operations, and of resolute and total defeat of an enemy permeate the entire development of the

Soviet Armed Forces--their technical equipping, organizations, and methods of training and educating personnel (11:572).

During this final postwar period of Soviet military doctrinal evolution, the Soviets made many small revisions to their military doctrine. Not only was it evident that nuclear parity provided the Soviets with a shield under which they could more fully develop their capability to project military power, we also saw the link between Soviet military doctrine and weapons system development. In the U.S., weapons are developed first, then the strategy is fit to the weapons system. Conversely, in the Soviet Union, a new doctrine or doctrinal expansion may occur when the political-military hierarchy believes that science and technology have made possible the new weapons to support it. The weapons are then developed further, based on doctrinal requirements (38:61).

It is in this vein that Soviet air transport development during this period prospered. early production efforts focused primarily on the AN-12 Cub and AN-22 Cock, both turboprop powered aircraft; then as technology permitted, the Soviets developed and produced their first jet transport, the IL-76 Candid. This was closely followed by research and development of the Soviets first widebodied jet aircraft, the IL-86 (3:58).

Summary

As initially indicated, Soviet military doctrine has

two sides: the political and the military-technical. To the Soviets, the political side is determined by a nation's political and military leadership depending on the socio-political order. Western observers tend to attach greater importance on what the Soviets consider the military-technical side of doctrine and ignore the political side. However, in the international arena, it is the latter that tends to best explain Soviet moves (3:59).

The goal of Soviet military doctrine has evolved since 1917 from the preservation of the Soviet state and defense against external threats, to expansion of the Soviet empire and promotion of global objectives. Basic to this theme is still the defense of the Soviet motherland, but since World War II, the military has had the additional requirement of defending and promoting Communism (33:16).

From World War II to the 1960's Soviet attempts to project military power were held in check by the superior U.S. nuclear capability. However, as parity was realized by the late 1970's, Soviet military doctrine had undergone several revisions and become more offensive in nature. This evolving military doctrine was not lost on U.S. Secretary of Defense, Casper W. Weinberger, when he observed, "Its expansion, modernization, and contribution to projection of power beyond Soviet borders are obvious (46:38)." The Pentagon mirrors his observations: "a growing capability to project military power beyond the periphery of the U.S.S.R. is a reflection of this Soviet drive to exert influence

worldwide (46:39)."

The Joint Chiefs of Staff FY 82 posture statement noted that military power is the Soviet union's most effective instrument for advancing its interests.

Its economy is stagnating, its political institutions are showing increasing strain, and around the world its ideology is frequently rejected. By matching U.S. in some military categories, and by surpassing it in others, the Soviet Union is steadily increasing its international influence and expanding its capacity for direct action outside its borders (46:42).

The tip in military balance toward the U.S.S.R. has given them the initiative to take the aggressive political and military actions and to undermine other nation's resistance to Soviets pressures (46:42). Therefore, Western leaders must be concerned about the extent to which Soviet doctrinal modifications, both political and military-technical, result in major changes in the military posture of the Soviet Union. And, most recently in the concentration on the buildup of forces able to project military and political power worldwide (3:62).

CHAPTER 4

SOVIET AIRLIFT CAPABILITIES

Overview

To fully understand the role of Soviet Strategic airlift in the projection of military power, an indepth look at Soviet airlift capabilities from an organizational and operational perspective is necessary. The discussion will begin with the Soviet transport aviation organizational outline of the peace and wartime chain of commands. This will be followed by a discussion of Soviet transport capabilities in terms of the type, number, payload, range, and loading/offloading capabilities of the Soviet transport airlift fleet. Finally, we will discuss four recent examples where the Soviets demonstrated their power projection capability.

Soviet Transport Organization

Soviet Armed Forces are organized in five separate services: Strategic Rocket Forces, Ground Forces, Troops of Air Defense, Air Forces, and Navy, all of which are under the Ministry of Defense. The Ministry of Defense and the General Staff provide centralized command and control to the Armed Forces (comparable in authority to both the U.S. Secretary of Defense and the Chairman of the Joint Chiefs of Staff). Subordinate to the Minister of Defense is the Chief

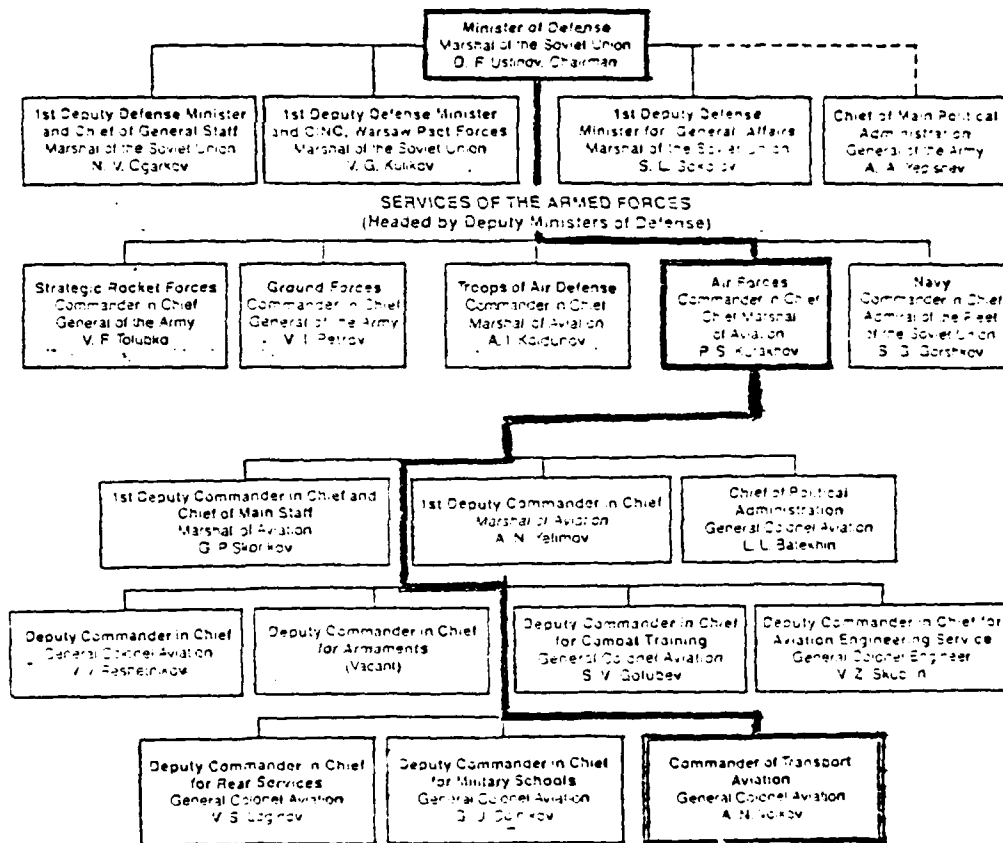
of General Staff, head of active duty officers who are the Deputy Ministers of Defense. The major elements of air power are organized into three separate services in the Soviet Union: Strategic Rocket Forces, Troops of the Air Defense, and Air Forces. The Soviet Air Force is divided into three main elements: Transport Aviation, Frontal Aviation, and Long Range Aviation (40:7-8). For a wiring diagram see figure 4-1 (36:55)³.

The Transport Aviation (Voyenno-Transportnaya Aviatsiya--VTA) is tasked with providing airlift support to all branches of the military. The current Commander of the VTA is General Colonel of Aviation A.N. Volkov, who commands a force of over 50,000 troops (41:56). Overall, Transport Aviation forces are organized in a triangular way, with the highest command level being an Air Division, consisting of three regiments, each composed of three squadrons of approximately ten fixed wing aircraft (12:108). The VTA command Staff is subordinate to the Soviet General Staff While many VTA units are directly assigned to the 16 Soviet military districts for direct support, VTA headquarters

³Chart does not list commanders for Frontal Aviation and Long Range Aviation. Frontal and Long Range Aviation units are assigned to military districts and to Soviet groups of forces abroad with operational control over joint commands remaining with the General Staff (39:155).

FIGURE 4-1

COMMAND AND STAFF OF MINISTRY OF DEFENSE
AND SOVIET AIR FORCES



retains administrative control over the units. The military districts exercise day-to-day control over the aircraft and crews, similar to a U.S. Unified Command (26:8). Figure 4-2 shows a map of U.S.S.R. with the military districts (40:174). Figure 4-3 illustrates the operational structure of the Soviet Armed Forces (40:175).

The effectiveness of the VTA can be greatly increased through the use of the Soviet civil airlines, Aeroflot, which is in effect a full-time reserve for the VTA. Although Aeroflot and the VTA are separated in civilian and military administrations, the links between the two are strong. The organizational structure of Aeroflot closely resembles the VTA, but is administered by the All-Union Ministry of Civil Aviation. This is a civilian agency, however Aeroflot's controlling leaders, from the top down are high ranking active or former active duty officers of the Soviet Air Force (28:42). Aeroflot is headed by the Soviet Air Force Air Marshall of Aviation, P.B. Bugaev. In fact, most of Aeroflot personnel also serve in the Air Force reserves and the pilots regularly fly in the military as Air Force reservists. Also, every principle military transport in the VTA inventory is flown by Aeroflot. It is estimated that Aeroflot could transfer over 300 aircraft to the VTA without experiencing a severe disruption of civil service (40:9). Figure 4-4, a wiring diagram, helps to illustrate the relationship of the VTA and Aeroflot (40:175).

FIGURE 4-2

MILITARY DISTRICTS, FLEETS, AND AIR DEFENSE DISTRICTS



THE SIXTEEN MILITARY DISTRICTS SHOWN ABOVE ARE APPROXIMATELY COMPARABLE TO US JOINT COMMANDS. SOVIET FRONTAL AVIATION UNITS (COMPARABLE TO US TAC AIR UNITS) ARE ASSIGNED TO THE MILITARY DISTRICTS. IN ADDITION TO THE MILITARY DISTRICTS THERE ARE FOUR GROUPS OF FORCES BASED IN THE WARSAW PACT AREA. THE TWO PRIMARY AIR DEFENSE DISTRICTS ARE AT MOSCOW AND BAKU.

FIGURE 4-3

OPERATIONAL STRUCTURE OF THE SOVIET ARMED FORCES

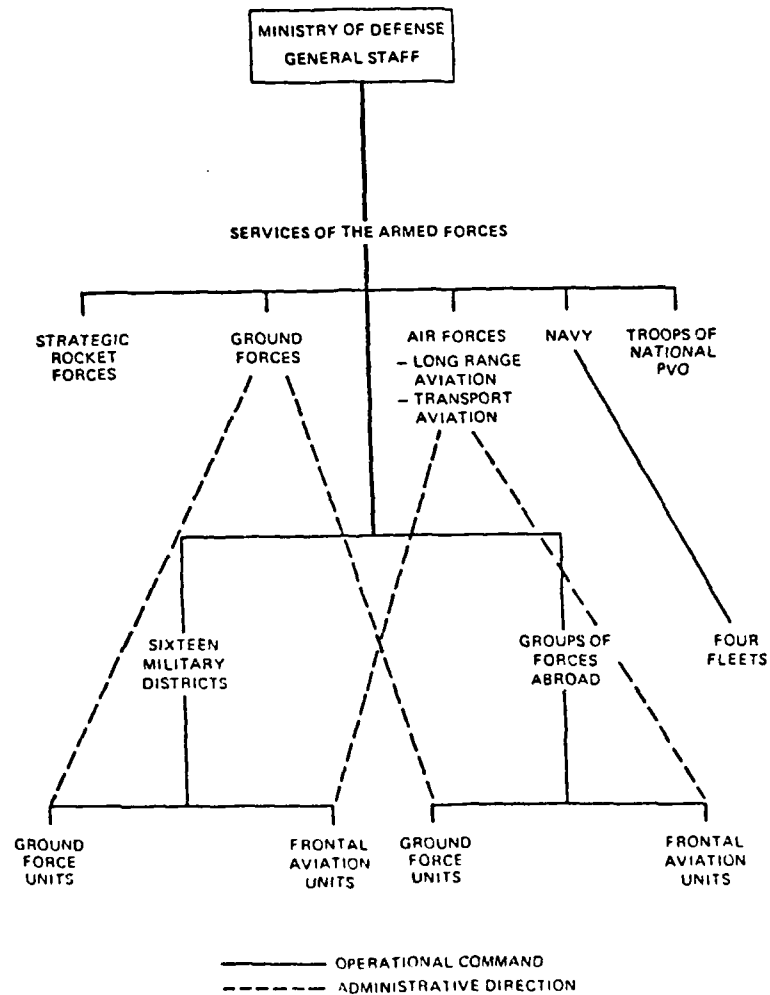
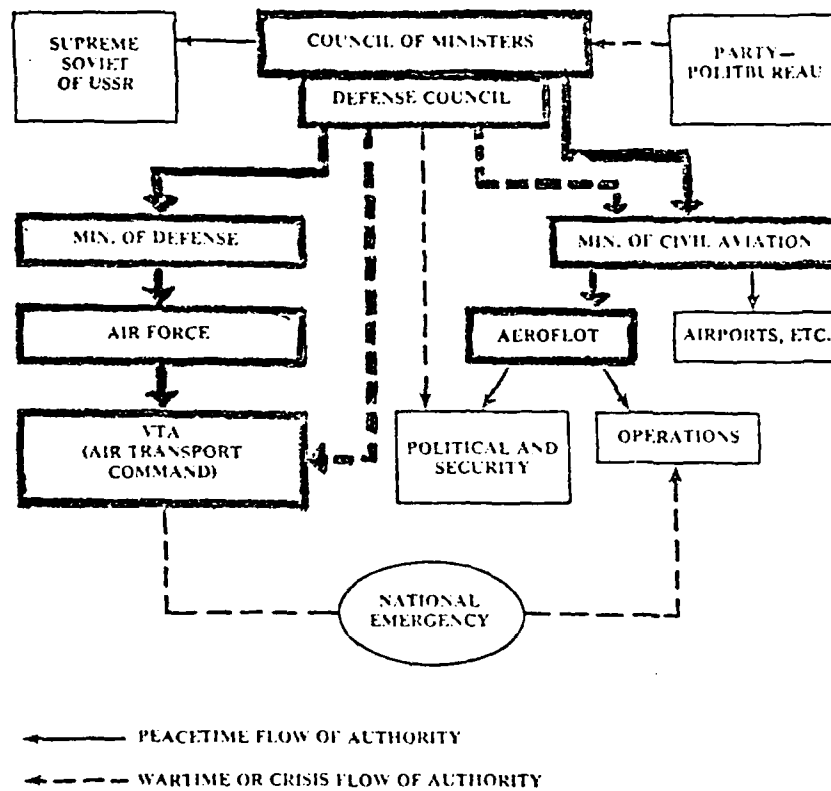


FIGURE 4-4

ORGANIZATIONAL AND FUNCTIONAL RELATIONSHIP OF
AEROFLOT AND MILITARY AIR TRANSPORT COMMAND



Aeroflot plays an important role for Soviet airlift capability. The duplication of aircraft adds a built in reserve of 300 transports to the VTA for quick augmentation. Aeroflot has 500,000 employees, with a route distance of 500,000 miles, 40% beyond Soviet borders. Almost every branch of the Socialist economy is directly or indirectly connected with Aeroflot. The party and the government are devoting a lot of attention to Aeroflot, equipping it with the latest aviation equipment, modern navigational and landing equipment; expanding the scientific research, training and technical base; increasing the network of airlines; and constructing/reconstructing airports. During the Ninth Five-Year Plan, 60 new air terminals were constructed with a total throughput capacity of more than 40 million passengers per year. These improvements to the terminal facilities parallel the increase in large body aircraft which were entering the inventory. Aeroflot has become more efficient and more effective with newer, bigger, and faster aircraft as well as modern support facilities to keep them flying (43:6-7).

Soviet Transport Capabilities

To fulfill its broad mission the VTA is subdivided by category of aircraft: strategic, tactical-operational, and tactical transports. The strategic is a relatively new class with the wide body transports, such as the AN-22, used for long range transport of men and supplies. The operational-tactical are medium range transports, such as

the AN-12, used to carry these reserves to the points near the front lines. The tactical transports, dominated by helicopters, are used to distribute the reserves to the appropriate battlefields. These three categories work together to move the Soviets from home to battlefield efficiently and quickly (5:94).

VTA and Aeroflot transports are developed primarily by three Soviet design bureaus: Ilyushin, Antonov, and Yakovlev. These bureaus design both the Soviet civil and military aircraft that are produced by a network of nearly 400 factories under the Ministry of Aviation Industry. The principle transport aircraft in the VTA/Aeroflot inventories pertinent for discussion here are: AN-12 Cub⁴, AN-22 Cock, AN-26 Curl, AN-72 Coaler, IL-62 Classic, IL-76 Candid, and the IL-86 Camber⁵ (2:13). Table 4-1 summarizes relevant data on each of these aircraft (26:13, 36:56, 15:78, 17:198). Table 4-2 shows similar data on each of the three primary U.S. transports (21:165, 17:409-410, 24:91). It is helpful if we take a closer look at the

⁴Nato Codename

⁵As is common Soviet practice, obsolescent aircraft are rarely phased out, but instead shifted to lower priority missions. Hence, such aircraft as the AN-8, IL-14, and IL-18 are still in wide use, although seen less frequently in first-line service.

TABLE 4-1

CURRENT INVENTORY OF SOVIET TRANSPORT AIRCRAFT

Aircraft*	AN-12	AN-22	AN-26	AN-72	IL-62	IL-76	IL-86
Nato							
Codename*	Cub	Cock	Curl	Coaler	Classic	Candid	Camber
No. in							
VTA	560	50	50	0	2	80	0
No. in							
Aeroflot*	132	0	0	0	165	40	6
Total							
No.	692	50	50	0	167	120	6
IOC*	1959	1967	1969	1988	1967	1975	1985
Engines	4	4	2	2	4	4	4
Type	turbo prop	turbo prop	turbo prop	turbo fan	turbo fan	turbo fan	turbo fan
Cruise							
Speed	320	350	237	388	480	430	500
Knots							
Max							
Cargo	44000	176200	9900	16535	50700 ⁷	80000 ⁷	92600
LBS							
Max							
Range	2100 ^a	3100	559	1985	4160	3100	2858
Miles							
No. of							
Pax/							
Troops	90/60	175/--	40/40	32/32	186/-	140/140	350

*Initial operational capability

⁷Range with only 22,000 lbs of cargo^aMax pay load, not necessarily cargo

TABLE 4-2

CURRENT INVENTORY OF U.S. TRANSPORT AIRCRAFT

=====				
Aircraft	*	C-130H	C-141B	C-5A
	*			
No. of Aircraft	*	258	268	77
	*			
IOC	*	1975	1979	1969
	*			
Engines	*	4	4	4
	*			
Type	*	Turboprop	Turbofan	Turbofan
	*			
Cruise Speed	*	325	492	541
Knots	*			
	*			
Max Cargo Lbs	*	45000	90800	264550
	*			
Max Range NM	*	2590 ⁹	2550 ⁹	6500 ¹⁰
	*			
No. of Troops	*	64	144	345
	*			

⁹With max payload.

¹⁰With 80,000 lb. payload.

transport aircraft that have played and continue to play an important role in the projection of Soviet military power.

When VTA airlift forces were given the mission of troop movement and logistical support of Russian and Warsaw Pact forces in support of Khrushchev's global strategy, a new turboprop transport, the AN-12 Cub began production. At its peak during mid 1950's, it represented almost half of the VTA fixed-wing aircraft fleet, providing airlift capacity for two full army divisions, consisting of 1400 men and equipment, over a radius of 750 miles. The layout of the AN-12 is conventional for a transport, with access to the hold via a ramp-door which forms the bottom of the upswept rear fuselage when closed. This ramp door is made of two longitudinal halves, which when hinged toward the inside of the cabin, allows the direct loading from truck on the ground, or facilitates airdropping of supplies and equipment. The biggest advantage of the AN-12 is its ability to accomodate any type of equipment in the inventory of a Soviet airborne division. A full load of 60 paratroopers can be discharged through the rear exit in less than a minute. After the many years of excellent service as a troop and cargo transport, and in paratroop-dropping roles, the AN-12 appears to be giving way to the newer and larger turbofan IL-76 as the mainstay of the Soviet military air transport force (2:2-3).

The improvement of Soviet airlift capability appeared

to be one of the goals of Brezhnev and Kosygin when they succeeded Khrushchev in 1964. This was an attempt to prevent another embarrassment such as the Cuban missile crisis. The improvement was mainly in the area of strategic transport, a new class of operations intended for the long range movement of men and equipment from the safe interior to the battlefield. This new requirement resulted in production of the Antonov AN-22 Cock, the largest aircraft in the world, until the C-5A. This aircraft first flew in 1965, with a production of more than 50 thru 1974. Both the VTA and Aeroflot operate this aircraft. Aeroflot uses it mainly in the underdeveloped areas of northern U.S.S.R., Siberia and the Far East. The AN-22 remains the only Soviet transport capable of airlifting some of the large Soviet Army artillery pieces, including the T-62 tank (17:190).

The AN-26 Curl, a turboprop transport, appeared on the scene shortly after the AN-22. This aircraft is an improved freight version of Aeroflot's standard short-range airliner, the AN-24 Coke. The AN-26 is one of the first transports to show up in other countries air force inventories, such as Poland, Bangladesh, and Yugoslavia. It is basically an AN-24T with more powerful engines and a redesigned rear fuselage to enhance freight operation. The rear fuselage forms a large loading ramp that can be slid forward under the rear of the cabin for direct loading onto the floor of the hold, or for airdropping cargo. The standard freighter easily converts to carry troops or litters as necessary. It

also has the capability to operate from unprepared airstrip surface because its tire pressure is adjustable in flight or on ground (44:95).

One operational tactical transport that deserves particular attention is the AN-72, Coaler. It is designed for short takeoff runs, steep climbs, high horizontal speed and high load capacity. This is particularly useful for rapid delivery of equipment to developing areas where the airfields may only be small unequipped strips. It is the Soviet's first domestic short-takeoff-and-landing (STOL) transport aircraft. It is similar in design to the Boeing YC-14, that also displays the characteristic boundary layer control engines located high atop the wing. This innovative blown wing technology provides substantial aerodynamic lift without the need for additional thrust. The rear cargo hatch has a ramp which can be lowered to the ground for roll on/off of equipment or the roller conveyor systems can be used. The airtight cargo compartment can also be converted into a refrigerated compartment. Although the USAF did not procure the Boeing version, the Soviet counterpart is now in serial (numbered in order of production) production for both Aeroflot and the VTA. Deployment of this aircraft significantly enhances Soviet tactical transport with its efficient on-board cargo handling equipment. It fulfills the airlift need for a fast-moving mechanized ground force, such as is now deployed in Afghanistan (35-85).

As the Soviets made advances in strategic and tactical

freight and troop transports, they also started production of their first primarily passenger carrying jet aircraft the IL-62 Classic. Capable of carrying 186 passengers, this aircraft allowed a rapid expansion of Aeroflot's route structure which took place in the late 1960's and early 1970's, when this plane was inaugurated on its Moscow-Montreal, Moscow-New York, and Moscow-Tokyo routes. Militarily, the VTA used this aircraft to move troops to and from the forward area during the Soviets six month troop rotations (17:198); and, was the main aircraft used to airlift Cuban combat troops to Angola in 1975-1976 (2:6).

Although the Soviets first passenger carrying jet aircraft, the IL-62, was available starting in 1967, its first all jet transport, the IL-76 Candid was not produced until 1975. The Soviet counterpart to the U.S.A.F.'s C-141 starlifter, the IL-76 is tasked with transporting 88,000 pounds of freight over 3000 miles in less than six hours, in the harsh operating conditions of the Soviet Siberian regions. This is twice the payload and over five times the range of the plane it is designed to replace, the AN-12 Cub. Some of the IL-76's design features include rear-loading ramp/doors, a T-tail, full-span leading edge slats, and triple-mapping radar in a large undernose farring, and a unique and complex 20-wheel landing gear. The military version is armed with parallel 23mm guns mounted in a rear turret. The entire accommodation is pressurized, enabling it to carry 140 troops as an

alternative to freight. Advanced mechanical handling systems are fitted to handle containerized and palletized freight. The Air Forces of Iraq, Czechoslovakia and Poland also operate the IL-76 and others are expected to enter service with the Soviet Air Force in AWACS and flight refueling tanker roles (45:88).

Until recently, the Soviets only possessed one wide-body aircraft, the AN-22 Cock. This has changed with the production and deployment of the Soviets first wide-body jet transport, the IL-86 Camber. The IL-86 will significantly increase the Soviets troop-carrying capabilities, as it can transport up to 350 passengers over 3000 miles (17:201-202). Aeroflot is the main operator of the IL-86, taking delivery of the first one in September 1979. Scheduled service was limited to domestic routes until 1981, when the first international service between Moscow and East Berlin was operated by the IL-86. Further route expansion has occurred since then to destinations such as Montreal, New York, and Tokyo.

The next generation of the strategic airlift fleet is being developed, but has not yet entered production. When the AN-40 enters service, it will have a capacity of 120

metric tons and surpass the C-5A as the world's largest plane (51:17).

Demonstrations of Soviet Power Projection

Over the past decade or so, the Soviets have increasingly been involved in airlifts of one nature or another. Each involvement has demonstrated the improvements in their airlift capabilities as a power projection source. Four major Soviet airlift operations have had a decisive effect on the outcome of a local conflict:

1. The Arab-Israeli War in 1973,
2. The Angolan Conflict in 1975,
3. The Ogaden War between Ethiopia and Somalia in 1977,
4. The Soviet invasion of Afghanistan in December 1979.

Since the 1962 Cuban Missile Crisis the Soviets have devoted an unprecedented amount of effort and resources to their airlift fleet. This is because Khrushchev had committed the Soviets to a course beyond Stalin's "Continental" strategy. Both Brezhnev and Kosygin realized that to maintain influence beyond the Eurasian Continent, expansion and improvement of their airlift capabilities would have to take place. Two events helped the Soviets learn this painful lesson: in the Congo in 1960, they were unable to support Patrice Lumumba, and during the Cuban Missile crisis, they were confronted with a smaller number of options. This lesson was reinforced when the Soviets invaded Czechoslovakia in August 1968. This emphasized to the Soviets the potential in airlift power projection to

help achieve foreign policy objectives¹¹ (51:17).

The Arab-Israeli War, October 1973

On 6 October 1973, both Egypt and Syria launched massive, coordinated artillery and fighter attacks on Israel. Although initial Arab successes were impressive, within a week the situation was reversed. The Israelis stopped the Egyptians in the Sinai and defeated the Syrians on the Golan Heights. As these Arab reverses took place, the Soviets showed their concern and support by starting an arms airlift to Egypt and Syria. By the tenth, 21 AN-12 Cubs had reached Syria, embarking the Soviet Union and the United States on the most intensive aerial resupply effort in history (49:24-25).

The Soviet arms airlift to the Arabs took place from 10 October to 23 October 1973. In those two weeks the Soviets flew over 900 AN-12 Cub and AN-22 Cock airlift missions, delivering almost 10,000 tons of arms to the Arabs, 3750 tons to Syria, and 6000 tons to Egypt¹² (See Tables 4-3, 4-4, and 4-5) (32:25-26). The Soviet use of airlift to resupply

¹¹The U.S. use of airlift during the Vietnam conflict provided evidence of the influence of airlift over events.

¹²By comparison, the U.S. delivered over 22,000 tons of cargo on less than 600 aircraft, an average one-way delivery distance of 6450 nautical miles, almost four times the average Soviet delivery distance of 1700 NM.

TABLE 4-3

SOVIET AIRLIFT TO THE MIDDLE EAST
 (total of deliveries to Egypt, Syria, Iraq and flights
 to Middle East whose final destination is unknown)

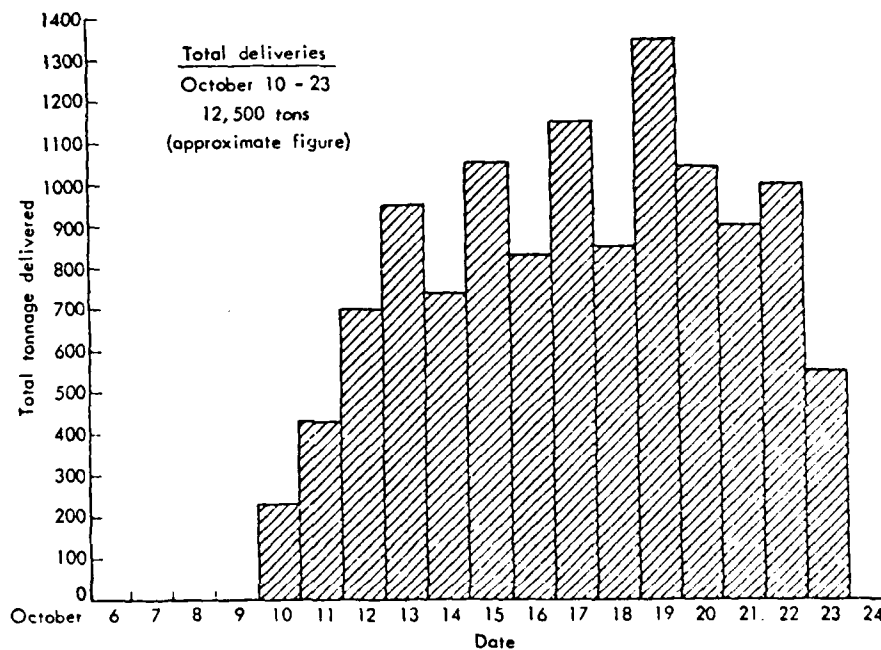


TABLE 4-4

SOVIET AIRLIFT TO EGYPT

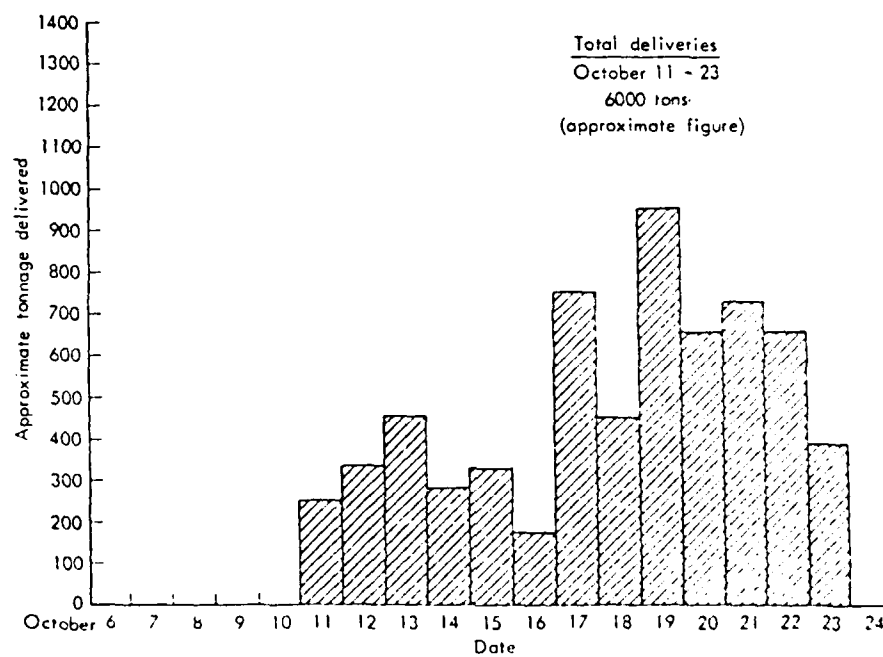
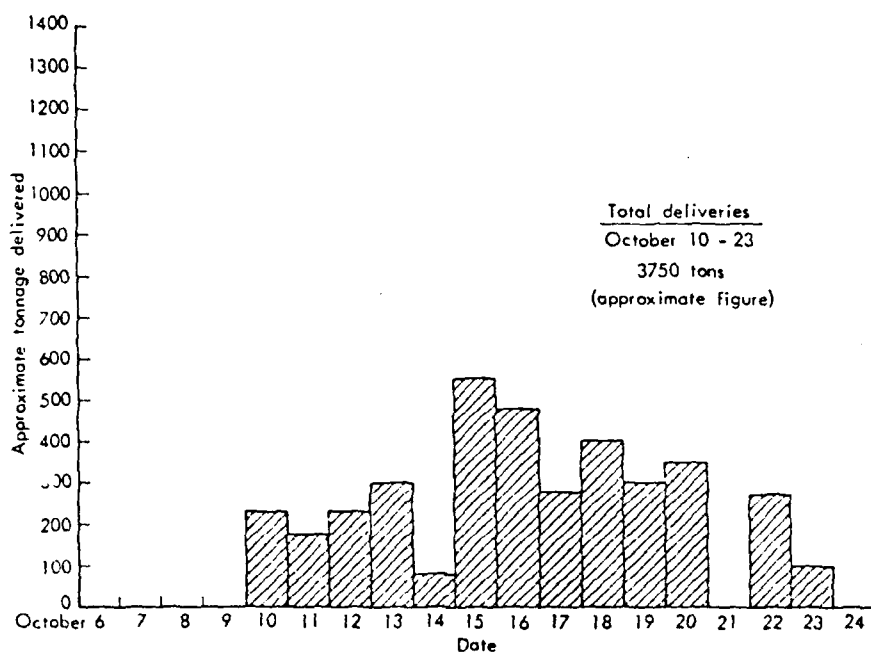


TABLE 4-5

SOVIET AIRLIFT TO SYRIA



the Arabs, rather than their traditional overseas arms deliveries by ship, showed a necessity to diversify delivery modes. They needed to take advantage of sealift's bulk carrying capability and airlift's flexibility and speedy response. This speed paid off in at least two significant Arab requests and subsequent Soviet deliveries. On 10 October, Israeli fighter pilots noticed fewer Syrian SAM launches. The arrival of the first AN-12s within 24 hours started the SAM launches again (51:33). Also, on 14 October, Algerian President Boumediene bought \$100 million worth of arms for both Egypt and Syria. Soviet deliveries to Syria and Egypt took place the following day (51:27).

The VTA's impact on the 1973 Arab-Israeli War was significant. Without the Soviet resupply airlift efforts, the Arabs would not have lasted one week, let alone two. Although sealift delivered more tonnage than airlift, the airlift response and delivery times were much faster and the impact was immediate. The U.S. carried more cargo, faster, and four times farther than the Soviets but the Soviet airlift fulfilled their foreign policy objectives of supporting Soviet clients. They had made major advances in the VTA over the previous ten years. In 1963, an operation of this magnitude would have been impossible (51:35-36).

The Angolan Conflict--1975

In January 1975, Portugal attempted to establish one of its African colonies as an independent nation, Angola. Although all major political parties were to be represented

in the transitional government, the Soviet-backed Movement for the Liberation of Angola (MPLA) attempted to seize power. To ensure this seizure in July, the MPLA requested and received Cuban troops and arms. By October, Aeroflot IL-62s and IL-76s began transporting over 25,000 Cuban combat troops in support of the Angolan revolution¹³(14:55). The Soviet airlift of Cuban combat troops was directly responsible for Dr. Agostinho Neto's MPLA party gaining and maintaining control after independence. However, the Angolan supply effort did not have the intensity or sense of urgency of the 1973 Arab airlift effort nor that of the next operation, the Ogaden War between Ethiopia and Somalia (51:40).

The Ogaden War

The Ogaden War was preceded by an interesting situation. In 1974 Somalia became the first black African nation to sign a treaty of friendship and cooperation with the Soviet Union. Also in 1974, U.S.-Ethiopian relations deteriorated with the coup of Ethiopian Emperor Haile Selassie I. With relish, the Soviets moved to fill the

¹³THE U.S. began supplying arms to FNLA (supported by Peoples Republic of China and Zaire) in August 1975. over Ethiopian possession of the Ogaden Desert, the traditional home of many Somalia tribesmen.

U.S. void in Ethiopia. However, the Soviet link between the two countries could not bridge the gap of an age old argument

The situation continued to deteriorate until July 1977, when Somali forces attacked and overran Ethiopian military outposts in the Ogaden Desert. In the following months, the Soviets airlifted weapons and other materiel to Ethiopia, provided training to Ethiopian troops, reduced and slowed arms shipments to the Somalis, and began airlifting Cuban troops to Ethiopia. Therefore in November 1977, Somali President Siad Barre ordered all Soviets and Cubans to leave the country. He also ended Soviet use of naval and air facilities while renouncing the treaty of friendship and cooperation (51:43). In six weeks following the expulsion, the Soviets generated up to 225 flights carrying arms and personnel to Addis Ababa, Ethiopia, and Aden, Yemen. Aeroflot played a significant role in airlifting over 2000 Soviet advisors and Cuban troops. The Soviet airlift allowed Ethiopia to mount a counter offensive and restabalize the area (51:43).

The airlift provided an immediate and highly visible way for the Soviets to show their support for Ethiopia. The Soviet committment to Ethiopia was demonstrated very clearly, as well as the intention of maintaining Soviet influence in the horn of Africa. Certainly as important, the operation challenged and exercised the Soviet airlift capability. The IL-76 clearly performed as an integral part

of the airlift system. Also, since the Soviets were deeply committed to Ethiopia at the time, failure of a substantial supply effort would have been a serious blow to Soviet prestige and its goals in the third world. If the Soviets failed to act, Somalia surely would have remained in Ogaden, with Ethiopia reduced to one-half its former size and a landlocked nation. Finally, the Soviet airlift allowed the Soviet presence on the Horn of Africa to continue (51:51).

The Invasion of Afghanistan--1979

The Soviets most recent airlift movement was reminiscent of the fast and deadly Czechoslovakian invasion more than a decade earlier. It also marked the first direct Soviet intervention in a country outside the Warsaw Pact since World War II (26:7). In December 1979, Soviet airlift forces began an airlift of troops and materiel into Kabul, Afghanistan. This airlift does not fall into the category of strategic operations because of the short distances involved (2300 NM). However, strategic airlift was used due to Afghanistan's poor surface transportation network, lack of railroads and snow-choked mountain passes. From 24 to 26 December 1979, approximately 250 AN-12, An-22, and IL-76 aircraft carried over 5000 troops and tons of equipment (26:7). As conventional road transport and security were established, subsequent airlift tapered off to a sustaining rather than a build-up flow (51:62). This operation was well conceived and planned. The invasion was felt to be in response to the steadily worsening situation in Iran. The

Soviets were afraid that the Islamic Revolution would spread to Afghanistan and result in the possible defection of Afghanistan from the Soviet orbit. Soviet airlift once again helped fulfill Soviet policy objectives (51:62).

Summary

The motive in using strategic airlift to project power is to be able to control events. Previous to the 1968 invasion of Czechoslovakia, the only thing the Soviets lacked was a doctrine which would add legitimacy to their actions, particularly with the Soviets' prime target, the Third World. The preparation and aftermath of the Czechoslovakian invasion provided the opportunity to fashion a doctrine. The Brezhnev Doctrine stated that, "the Soviets would use any power necessary to support socialist regimes and wars of national liberation (51:64)." As we have seen, the Soviets have applied this doctrine no fewer than four times since its formulation. They were unsuccessful only once, when the U.S. actively challenged them in 1973 (51:64).

CHAPTER 5

LIABILITIES AND ASSETS

Overview

To fully evaluate the projection capabilities of the Soviet airlift system, one must analyze the assets and liabilities of this system. The discussion will begin with a comparison of present day U.S. and Soviet geographic airlift requirement, then continue with some of the positive aspects of Soviet airlift which enable them to meet their political and military objectives. This will be followed with a discussion of the contrasting factors which inhibit the Soviet use of airlift as a power projection tool.

Geographic Airlift Requirements

The third world has grown in importance to the U.S. and to the U.S.S.R. over the last decade. A recent study by the Rand Corporation has described the situation for the U.S. very well.

History ties the United States most closely to Western Europe, but a large part of her commerce is with nations of the third world. In 1973, one-third of total U.S. exports went to third Areas (\$23 billion worth) and nearly one-third of U.S. imports (\$21 billion worth) came from third areas. In addition, the United States imports 100 per cent of her requirements for at least seven minerals and over 75 per cent of her requirements for 16 others, most of these imports coming from the third world. A large and growing fraction of U.S. petroleum requirements comes from Third Areas-- 28 per cent in 1975, increasing to 39 percent in late 1978 (2:2).

In the past several years, the Soviet Union has also shown a growing interest in the third world. They have concentrated their external activities on the Warsaw Pact Countries, Cuba, China, and North Korea. However, they have demonstrated their growing interest in the Third World with their willingness and ability for positive actions to protect and extend these interests. This was clearly indicated by their relations with the Middle East, Angola, Somalia, Ethiopia, and more recently Afghanistan (2:2).

Although the U.S. and Soviet interests overlap and sometimes clash in the third world, their locations in world geography contrast sharply. This poses some problems when they are trying to protect, exploit, or expand their interests. Currently, the U.S. has a net airlift advantage over the Soviets. The U.S. can move over 49,000 short tons with military transports and augmentation from the Civil Reserve Air Fleet (CRAF). By contrast, the Soviets can move just over 29,000 short tons with its total military airlift forces and augmentation of about 400 Aeroflot transport aircraft. This U.S. advantage, which equates to about 1.67 to 1, is offset by geography (15:81). Excluding Antarctica, 62 percent of the world's land is closer to the Soviet Union than to the U.S. (13:7). Also, most destinations of airlift movements would be along the Soviet Union's southern periphery, such as the Persian Gulf area. The oil fields of the Persian Gulf are almost four times closer to the Soviet Union than to the U.S. Table 5-1 shows just how close the

Soviets are to natural resources (14:5). The accompanying Maps (figure 5-1 and 5-2) show the degree of geographic asymmetry vis-a-vis the Soviet Union (2:5). The combined VTA-Aeroflot effort would give the Soviets a net advantage in moving forces into the southern periphery areas. The significant point is that the force which reaches the target area first has a greater military advantage, for it is able to prepare and consolidate offensive and defensive positions, thereby becoming harder to dislodge (15:81-82).

Assets

The Soviet Union has vast undeveloped areas with few surface transportation links and severe climates. Many areas can be reached only by air. These austere locations have infrequently used airfields, unprepared, short airfields, and little ground handling equipment. The Soviets have developed aircraft that operate well under many different conditions with six important characteristics: commercial signatures, short takeoff and landing capability (STOL), the ability to operate from unprepared airfields, autonomous operation, simple and easily maintained equipment, and high range/payload performance (35:81).

TABLE 5-1

RESOURCES CLOSER TO THE U.S.S.R. THAN TO THE U.S.

	<u>Percent closer to U.S.S.R.</u>	
	of the world total	of developing world
Land (less Antarctica)	62	69
Population	81	82
GNP	65	67
Proven oil resources	86	90
Natural gas	81	85

FIGURE 5-1

WORLD MAP WITH LINE OF POINTS APPROXIMATELY
EQUIDISTANT FROM THE U.S. AND THE U.S.S.R.

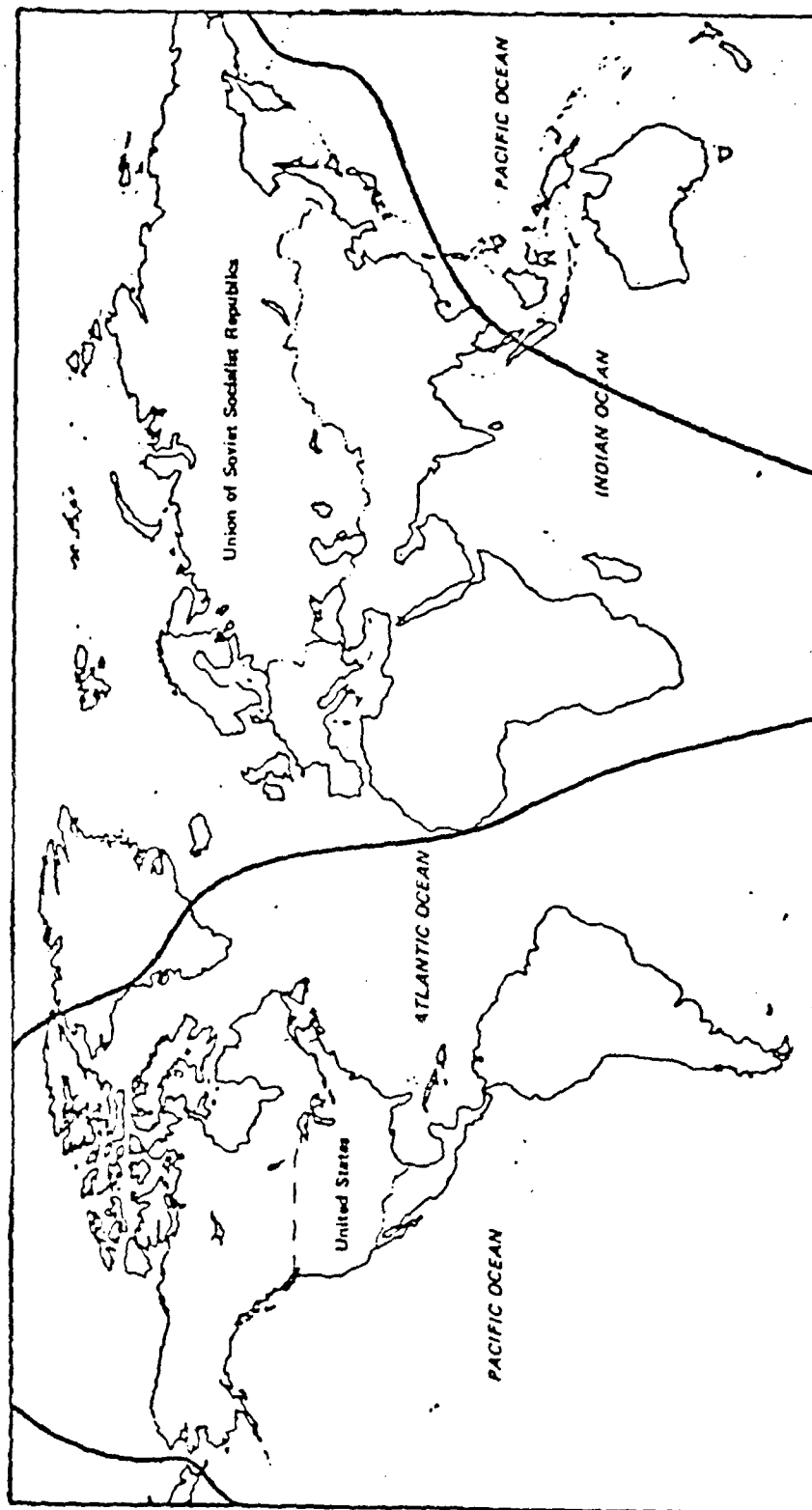
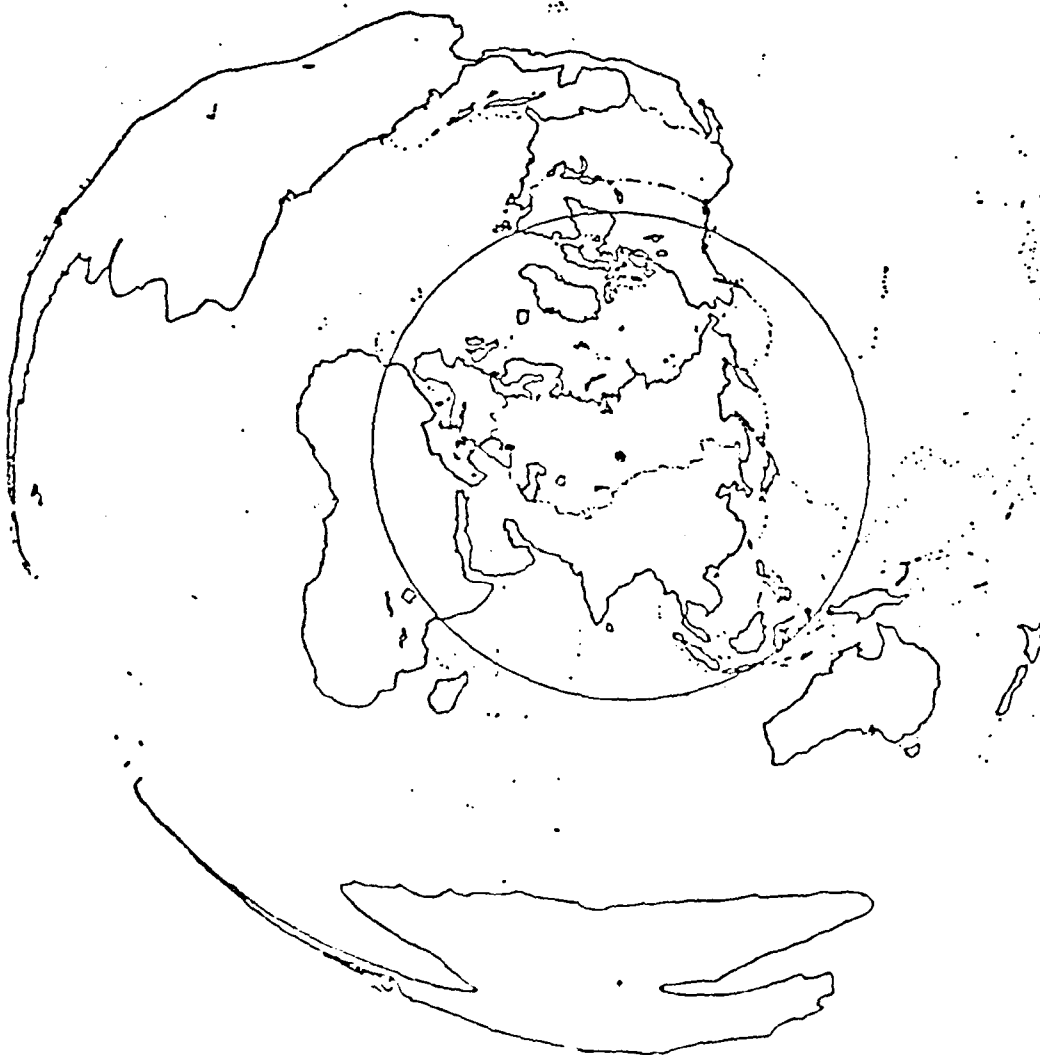


FIGURE 5-2

EQUIDISTANT WORLD CHART, WITH 4,000 NM RADIUS CIRCLE
CENTERED ON NOVOSIBIRSK, U.S.S.R.



The parallel employment of Soviet military transport aircraft by Aeroflot provides the Soviets with an important advantage. At times Soviet VTA aircraft are indistinguishable from Aeroflot's Commercial transports with only a little repainting. This can easily lead to achieving tactical surprise as occurred in Czechoslovakia in 1968: using aircraft with civil aviation markings, the Soviets deployed substantial numbers of military personnel outside the U.S.S.R. In contrast, U.S. military transport aircraft almost always have a military-unique signature, making a covert tactical airlift difficult (35:82). Complementing this Soviet tactic is Aeroflot's international route structure which is the world's largest (28:38). This increases the prospects for clandestine airlift of Soviet military forces and supplies, particularly in the Third World (35:82).

The short takeoff and landing (STOL) capability is very important for operating in undeveloped areas. The Soviets have designed and built their transport aircraft with a higher power-to-weight ratio than similar Western designs. The U.S. C-141B has a thrust-to-weight ratio of .57 to 1 while the Soviet counterpart, the IL-76 has a ratio of .62 to 1. To enhance this STOL capability, most transport aircraft are fitted with hard points for using a rocket-assisted takeoff (RATO) unit (35:81). Other transport aircraft use additional engines for takeoff and climb. For example, the AN-24 and AN-26 transports have an

auxillary turbine engine built into the starboard engine nacelle¹⁴ to provide additional thrust (53:946). The STOL capability gives the Soviets an important asset in both tactical and strategic airlift operations where 9,000 to 12,000 foot runways, required for heavily loaded strategic aircraft, are not available (12:81).

The Soviets increased their capability to operate into unprepared airfields with the design of the aircraft. They are designed with extremely rugged undercarriages, multiple low or variable tires and short landing-gear legs mounted in pods. The variable pressure tire pressure system allows tire pressure adjustments to meet local conditions. To operate from a concrete runway, sandy soil, or snow, the tire pressure can be varied between 5.0 bar¹⁵ and 2.5 bar (12:82).

In response to austere circumstances, the Soviets equipped their military and civil transport aircraft with several features not normally found in Western aircraft.

¹⁴A Nacelle is an enclosed shelter on an aircraft for an engine or sometimes for the crew (42:1499).

¹⁵Bar is a unit of pressure equal to one million dynes per square centimeter or about 0.98697 standard atmosphere (8:174). A dyne is a unit of force in the CGS system, equal to the force that would give a free mass of one gram an acceleration of one centimeter per second (8:711).

These enable them to operate with a minimum of ground handling equipment. Soviet transports usually have on-board cargo-handling equipment, on-board test equipment, self-starting engines, and a gravity refueling system. All lend themselves to increasing the utility of these aircraft (53:947). To increase the autonomy of their transport aircraft, the Soviets have installed an on-board cargo-handling system built into the load-bearing structure of the airframe. Cargo handling is facilitated by overhead trolleys, chain conveyors, and built-in winches. Soviet airdropping systems also have many unique characteristics including the use of braking retro-rockets to drop heavy equipment or pallets. The airdropped pallet has sensors mounted on the pallet which, upon touching the ground, fire the retro-rockets, slowing the pallets descent and reducing the impact (12:83).

The Soviets have designed their transport aircraft as simply as possible with an aim at minimizing maintenance, an approach which summarizes Soviet designers principles in meeting military requirements. Using this technological approach has resulted in a very high readiness rate for many Soviet transports. Most aircraft maintenance problems are addressed by enlarging the aircrew to include an aircraft mechanic and electrician. Combined with the regular flight engineer and using on-board tools and spares inventory, the crew is capable of keeping an aircraft in service longer away from any kind of depot facilities. While probably

designed for peacetime Siberian operations, this maintenance approach would be equally important in a wartime environment (53:948).

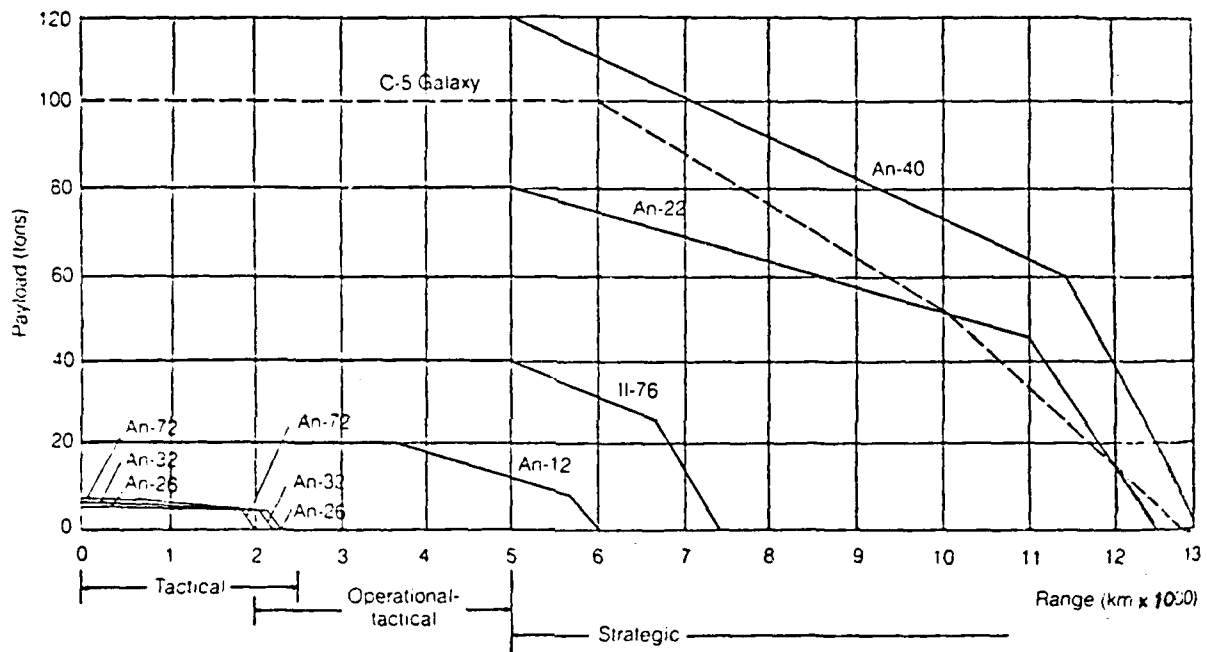
Because the Soviets have divided their transport aircraft into three mission categories, (tactical, operational-tactical, and strategic), they have not placed a premium on developing a small number of aircraft with optimized range/payload characteristics which is a dominate Western strategy. Instead, the Soviets have built several types of transport aircraft unique to or at least overlapping the three mission areas as evident in the accompanying graph, Figure 5-3 (35:83).

Liabilities

Although the Soviets have designed and built an impressive airlift system enabling them to meet political and military objectives, this system is not without some deficiencies. The Soviets have made tradeoffs in order to achieve the assets described earlier. Many of these tradeoffs were necessary given the vast Soviet interior operating area. One area is the sparsely inhabited Siberian district with a nine month winter that makes overland travel impractical or impossible, and airfields that vary from hard packed snow and ice, to wet soil and sand in the summer. The liabilities arise from the number of turboprops, the age

FIGURE 5-3

PAYLOAD/RANGE PERFORMANCE OF SOVIET TRANSPORTS



Source: International Defense Review No 6 1979 p 948

NOTE: The C-5 (dotted line) is shown for comparison. An-40 data is theoretical.

and number of the fleet, the refueling capability, command and control, aerial refueling, and rear cargo doors.

Except for the newer jet transports, most of the Soviet fleet are turboprop powered aircraft. Turboprop aircraft play an important role in the Soviet interior, such as providing a good STOL capability, a low maintenance air fleet, and a flexible airlift delivery system. However, when employing the turboprop fleet to project forces, some deficiencies are apparent. Soviet turboprop aircraft have a higher thrust-to-weight ratio than their Western counterparts, because Soviet airframes tend to be smaller than Western transport aircraft. The Soviets have traded size in and reduced their possible cargo load for a higher thrust-to-weight ratio. Other deficiencies are in the relative slowness of turboprop to jet powered aircraft and the shorter range of turboprop aircraft (26:10). To compensate for the past absence of quality turbofan engines and to enhance the STOL capability, the Soviets equipped their transports to use rocket assisted takeoffs and auxillary engines (4:950). Although, the turboprop is being replaced by turbofan powered aircraft, turboprop aircraft still comprise over 80 percent of the Soviet transport fleet and account for 70 percent of fleet payload.

Another problem the Soviets face is the age of their transport aircraft fleet. The age problem diminishes as new aircraft like the IL-76, IL-86, AN-72, and AN-40 are integrated into the fleet. In spite of this, the fact

remains that the AN-12 Cub, entering the inventory in the 1950's as the first transport, still comprises 80 percent of all Soviet military transport aircraft and 57 percent of fleet payload. The AN-22 Cock, with almost twenty years of service, is their largest cargo plane and the only one capable of moving outsized items such as tanks, self-propelled artillery, rockets, and tracked antiaircraft weapons. Production of the AN-22 was stopped in 1974, limiting the Soviet outsize movement capability until the AN-40 is operational in the 1990's (16:35).

Together, the VTA and Aeroflot comprise an impressive number and variety of aircraft and lift capability. However, as General Otis testified in February, 1980, "the most notable deficiency apparent today is their lack of sufficient numbers of transport aircraft to quickly project military power to distant areas (15:81)." He also stated that, "Although the Soviets ability to project military power to distant areas has grown considerably in the last decade, they still do not have the assets for global operations simultaneous with operations in theaters contiguous to their territory (15:81)." In view of the lack of other adequate means of transportation, in the interior of the U.S.S.R. and the increasing amount of Soviet activities worldwide, the number of aircraft in the VTA inventory seems too low rather than too high.

The number of aircraft reflects quantity not quality for several reasons. The Soviet command and control of

facilities and equipment is inadequate and prohibits efficient operation of a large transport fleet (4:950). The Soviets do not organize their airlift under a single manager nor do they use an integrated logistics approach. They lack clear cut command and control which tends to decentralize and inhibit the efficiency of the transport fleet. Each military district commander exercises command and control over the forces in his district. Also, many of the Soviet forces are "special teams" which detracts from an integrated approach. It is unlikely that the number of aircraft in service will increase, however, a shortfall in numbers could be off set by replacing older, smaller aircraft with newer, larger ones (5:6).

Two more limitations to the Soviet airlift fleet are the lack of an aerial refueling capability and the lack of rear cargo doors on most Aeroflot aircraft. The range of Soviet transports is severely limited because these aircraft are not refuelable (16:35). This in effect increases either the number of aircraft or the number of sorties per aircraft necessary to support a strategic deployment. The Soviets have partially solved this problem by developing a sophisticated network of basing and refueling agreements, but this network is yet to be tested and its reliability is unknown. In addition to this limitation, the Aeroflot does not provide complete support to the VTA. Although Aeroflot provides a substantial reserve to support VTA needs, this support is limited to troop transport and break-bulk items

such as ammunition, food and medical supplies because these aircraft do not have rear loading ramps (4:949). The number of Aeroflot aircraft add to the capability of the Soviet fleet but the response flexibility of aeroflot is hampered by the cargo handling limitation. This limitation and the aerial refueling limitation are significant enough to decrease the range of the Soviet fleet and the flexibility of response.

Summary

The Soviet transport fleet has many assets and liabilities as have been discussed in this chapter. Weighing these assets and liabilities on paper produces only a rough estimate of the true capability of the Soviet airlift fleet. The best estimate is the actual usage. Despite the liabilities we have presented here, the Soviets have steadily increased their use of airlift and in a very successful way.

CHAPTER 6

SUMMARY AND CONCLUSION

Summary

The goal of this research effort was to identify and evaluate the role of Soviet airlift in the projection of military power. We accomplished this by: reviewing the doctrinal environment in which the Soviet airlift system evolved; analyzing the Soviet airlift capabilities from an organizational and operational perspective; and noting some of the assets and liabilities the Soviets have in their use of airlift as a power projection tool.

The growth of Soviet transport aviation has been slow: from a small World War II force which supported anti-German partisans and guerillas, to an organization which could not support Nikita Khrushchev's global expansions of the 1960's, finally evolving to a force fully capable of supporting the power projection requirements of contemporary Soviet military doctrine. This transition has been closely related to changing Soviet political policy and to the shift in Soviet interests from controlling internal political affairs, to aiding and intervening in satellite countries, to supporting a worldwide external role for the Soviet Armed Forces. To meet these changing objectives a worldwide capable airlift force became necessary and the combined resources of VTA and Aeroflot grew to adequately provide

this support. And, as the new generation of Soviet jet transports, such as the AN-72 and AN-40 come into operation, Soviet airlift capabilities can only improve (26:11-12).

Soviet expert Seweryn Bialer, author of Stalin's Successors, made the following observation concerning recent Soviet international policies:

Soviet international policies of the Brezhnev era have exhibited one dominant concern: How successfully to translate the new military power into effective political power and influence in the international arena while avoiding direct confrontation with the other superpower, the United States (40:2).

However, in the past decade, the Soviet Union has demonstrated large scale airlift efforts in support of their worldwide foreign policy objectives. There is little room for doubt that the VTA and Aeroflot airlift forces would be used in the future to continue this support. As the Soviet Ambassador to Paris, Ambassador Chervonendo, said in April 1980:

Russia has the full right to choose its friends and allies, and if it becomes necessary, to repel them with the threat of counter-revolution or foreign intervention.... No region in the world, including the Persian Gulf, can be viewed as a special area of vital interest to the United States (26:12).

To lend credence to this statement the Soviets have developed their transport aviation organization to react to peace or wartime situations. Transport Aviation (VTA), one of three elements of the Soviet Air Force, is tasked with providing airlift support to all branches of the military.

Through the chain of command, the VTA has access to the Minister of Defense (complement of U.S. Secretary of Defense). Many VTA units are directly assigned to one of 16 Soviet military districts for direct support, however VTA headquarters retains administrative control over the units. The military districts exercise day-to-day control over the aircraft and crews, similar to a U.S. unified Command. This tends to inhibit the efficiency of their transport fleet. The Soviet Civil Airlines, Aeroflot, serves as a full-time reserve for the VTA. Though Aeroflot and VTA are separated in civilian and military administrations, there are strong links between the two: Aeroflot's leaders, from the top down are high ranking active or former active duty officers of the Soviet Air Force; most Aeroflot personnel also serve in the Air Force reserves; Aeroflot pilots regularly fly in the military as Air Force reservists; and , every principle military transport in the VTA inventory is flown by Aeroflot. Aeroflot and its U.S. complement, the Civil Reserve Air Fleet (CRAF), differ in several respects. VTA use of Aeroflot takes place routinely while CRAF implementation takes place only under conditions of national emergency. Aeroflot can deploy up to 300 aircraft to VTA without disrupting most services while U.S. civil air service would be seriously curtailed. And, while VTA's routine use of Aeroflot is of interest mainly to Western intelligence organizations and military departments, use of CRAF is a U.S. national policy statement, short of declaring

war. However, implementation of either Aeroflot or CRAF is a flag or signal of different proportions, which may or may not be bad from the standpoint of calculating the Soviet's or our own intent on a particular issue.

VTA and Aeroflot transports are developed primarily by three Soviet design bureaus: Ilyshin, Antonov, and Yakolev. These three bureaus have designed every principle transport aircraft in the VTA/Aeroflot inventories which were discussed in Chapter 5 (AN-12 Cub, AN-22 Cock, AN-26 Curl, AN-72 Coaler, IL-62 Classic, IL-76 Candid, IL-86 Camber).

Four major Soviet airlift operations have demonstrated the significant improvements in their airlift capability: the Arab-Israeli War in October 1973, the Angolan Conflict in 1975, the Ogaden War in 1977, and the Soviet Invasion of Afghanistan in December 1979. During the Arab-Israeli War, the Arabs would not have lasted one week, let alone the two they did, without the immediate response of Soviet airlift followed by sealift. The Soviets used Aeroflot to transport 25,000 Cuban combat troops in support of the Angolan revolution in 1975. This directly influenced the outcome of the conflict, putting the Soviet backed MPLA in power. During the Ogaden War, the Soviets airlifted arms and Cuban troops to Ethiopia. Without this help Ethiopia would have lost half of its territory and become a landlocked nation. By not providing this support the Soviets would have lost substantial Third World prestige and would not have achieved their goals in the Third World. The fourth demonstration of

Soviet power projection was the Invasion of Afghanistan in 1979, when they airlifted troops and equipment to Kabul, Afghanistan. The lack of surface transportation made this airlift very important and turned the tide of the invasion.

These four demonstrations of Soviet power projection are the best measures of Soviet airlift capability. The Soviet foreign policy goals were established and then met by the airlift. The Soviets airlifted much needed supplies and troops in a timely and efficient way. With Soviet assistance these countries defeated the opposition and incurred a debt to the Soviets. In this way the Soviets attained and have maintained a position of influence outside the continental U.S.S.R.

Identifying the Soviet geographic requirements helps to understand the Soviet airlift network. The geographic area establishes the objectives and requirements for this system, delineates the area that Soviet transports are able to reach, and distinguishes an equidistant line between the U.S. and the U.S.S.R. The U.S. and the U.S.S.R. have overlapping interests in many areas. This implies that the objectives and requirements should be similar. However, the Soviets have the jump on the U.S. because the U.S.S.R. is closer to many of these high interest areas. Table 5-1 gives the percentages of resources closer to the U.S.S.R. than to the U.S. and indicates the U.S. aircraft must travel further and faster in order to be the first one there.

The assets of Soviet transport aircraft have been

strongly influenced by the geographic requirements of the U.S.S.R. It is a very large country, with great undeveloped parts and extreme variations in climate. As a result, the Soviets have developed a strong commercial fleet, STOL capability on 80 percent of the transport aircraft, the ability to operate from unprepared airfields, autonomous operation, simple and easily maintained equipment, and high range/payload performance.

These assets give the Soviets an advantage in meeting their geographic requirements. The ability to go anywhere, developed or not, within this arena is a significant asset. The aircraft are also equipped with cargo handling equipment to operate anywhere, with or without ground support. Granted, offloading will be slower without ground support, but they will have the advantage of getting into an undeveloped area first. The U.S. strategic transports, the C-5 and C-141, require developed airstrips and do not have autonomous material handling equipment (MHE). To handle loading and offloading operations, MHE must travel on U.S. aircraft and take up important space on the aircraft. If the combat area does not have a developed area, the U.S. would have to deploy to a developed airfield then offload and load on to a smaller aircraft such as the C-130. This would take valuable time that could give the Soviets an opportunity to offload and setup.

In order to have these assets the Soviets have made many tradeoffs, some of which are considered liabilities to

their airlift effort. They have a disproportionate number of turboprop aircraft when the state of art is turning to turbofan. The average age of the fleet is increasing. They do not dispose of old aircraft just build more, which increases the number in the fleet. This makes the problem of command and control more difficult. The older aircraft require better management, more maintenance and do not have state of the art equipment to improve efficiency. Integrating the wide variety of aircraft into the mission requirements and plans could be accomplished only with very strong lines of command and control. Also, Soviet transport aircraft do not have an aerial refueling capability. The destinations are limited to those within the range of the aircraft's fuel tanks or to those areas which will support the Soviets. Therefore, more dependent on securing transit privileges.

Finally, many western observers believe that the Soviet independent on-board cargo-handling system should be incorporated into western transports. However, few seem to recall that similar equipment was installed on early U.S. transports like the C-97 and C-124. This system puts too much lifting stress on the load bearing structure of the aircraft and reliability of the system was low. And, with our present roller system, horizontal winch capability, and rear cargo door design, the need for a vertical lift on and off aircraft is rarely needed or used. However, Soviet development over the past ten years has steadily improved

and increased the transport fleet. The resources of the VTA and Aeroflot stand ready and able to support and help in carrying out this threat (26:12).

Conclusion

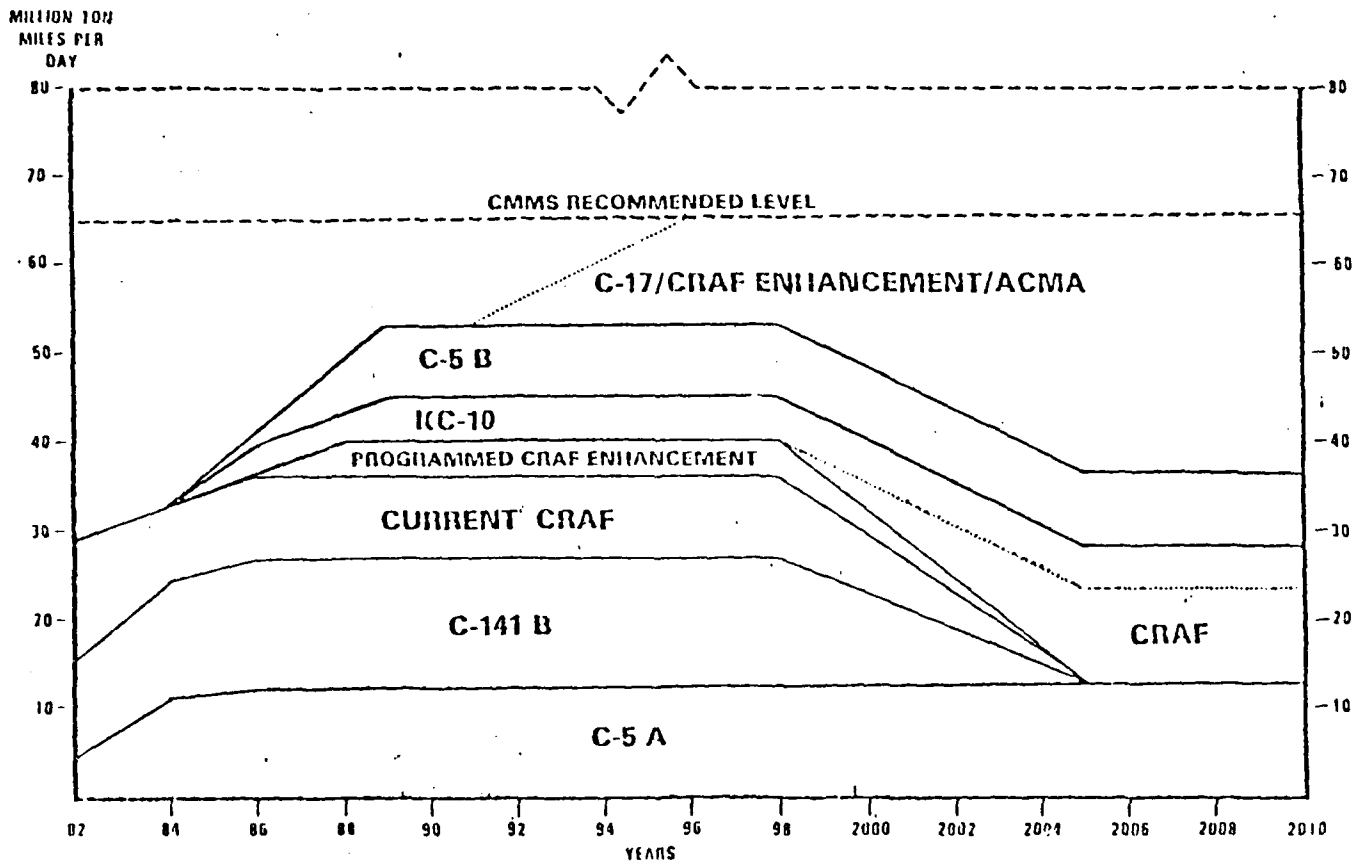
To conclude this thesis effort we would like to direct attention to what this means for the U.S. Basically, the Soviets have the capability to airlift quickly and almost anywhere. The threat of Soviet projection into any troubled area is very real. The U.S. must in turn develop a response capability to compete with this. The U.S. has a very good strategic capability with the C-141 and the C-5 but there are a few drawbacks that correlate to assets in the Soviet fleet. The C-5 and C-141 aircraft are limited to developed airstrips. They also need ground support to load and offload. The Soviet aircraft can land almost anywhere and do not need ground support to operate. This system also has some valuable assets that correlate to liabilities in the Soviet fleet. Both the C-5 and the C-141 are air refuelable and have a very good range as a result. This asset relates to the Soviet liability in that they do not have air refuelable transport aircraft. Also, the C-5 is the largest transport aircraft in operation. However, with the development of the AN-40, the Soviets will have an even larger transport aircraft.

Although our present airlift capability will be greatly enhanced by the addition of the C-5B, a void remains in our capability. We recommend the pursuit of enhancement

programs such as the CRAF modification and the C-17 to fill this void. One particular void is our inability to directly deliver cargo to undeveloped areas. This void could be filled with the development and integration of the C-17 aircraft into our transport fleet. The C-17 would not only bolster our strategic airlift fleet, but would free valuable C-130 intratheater aircraft for other duty. It would also give the U.S. a capability to directly deliver outsize material, a capability which our present transports lack. Another program that would improve our airlift posture is the Civil Reserve Air Fleet (CRAF) enhancement program. Both of these programs would boost our airlift capability to the level recommended by the 1981 Congressionally Mandated Mobility Study. Figure 6-1 represents the capability that exists today and the effect of the addition of these programs to our airlift fleet (42:159). In conclusion, for the U.S. transport fleet to remain competitive in this airlift arena we feel that the U.S. must respond to the growing threat of Soviet power projection. This response could be completing the buy of 50 C-5B's, developing and procuring the C-17, and stepping up the CRAF enhancement.

FIGURE 6-1

INTERTHEATER AIRLIFT SUMMARY



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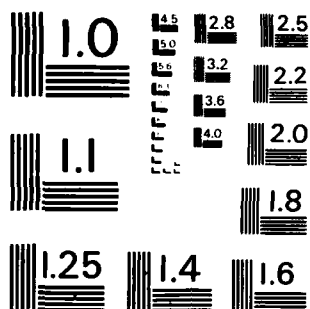
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