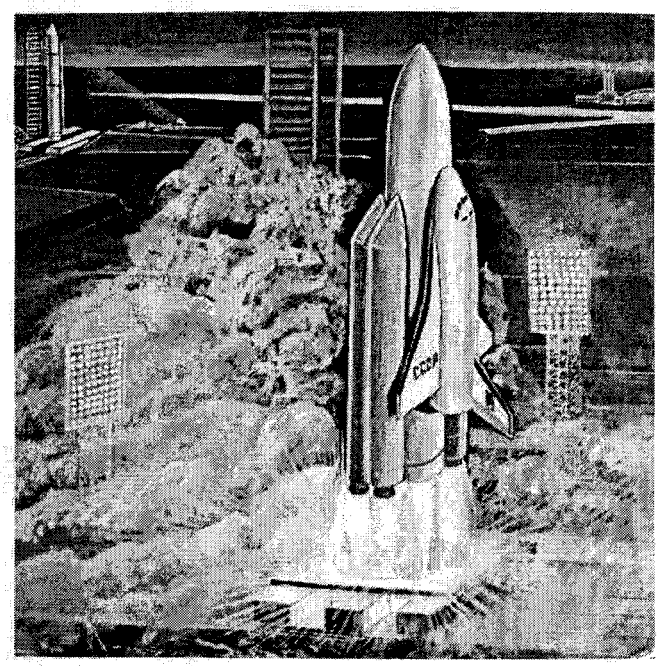
DEFENSE INTELLIGENCE AGENCY



Soviet Military Space Doctrine

Cover Photo
Artist's Concept of the Soviet Space Shuttle Lifting off from Tyuratam.

Soviet Military Space Doctrine

1 August 1984

DDB-1400-16-84

Preface

This report presents a probable Soviet doctrine for the military use of outer space. It considers Soviet statements about general military doctrine and the possible methods of exploiting outer space for military purposes along with examinations of the organization and control of the Soviet space program and Soviet space propaganda and diplomacy. This report does not include an examination of the various capabilities of the Soviet military space program, which has been adequately presented in a number of other publications. The existence and capabilities of the Soviet military space program, therefore, are accepted as given.

Contents

Summary

This report seeks to define Soviet military space doctrine. An examination of Soviet views on their general military doctrine reveals that this doctrine demands the inclusion of a strategy for using Soviet space-based military capabilities. (Although the Soviet concept of the term doctrine is much more precise than the Western concept, the Western understanding of the concept is used herein.) The key elements of Soviet military doctrine are the overwhelming offensive application of superior military force to further Soviet interests and the combined arms approach to combat operations. Both of these elements are equally essential for Soviet military space doctrine.

Consideration of Soviet statements on military space doctrine reveals a change in Soviet public expressions following Moscow's accession to the 1967 Outer Space Treaty. Before the treaty, Soviet views reflected a need by the USSR to defend itself against attacks from outer space; after the treaty Soviet commentary changed in favor of complete insistence on a purely nonmilitary interest in space. This Soviet insistence, however, in comparison with actual Soviet military space capabilities, only seems to buttress further the offensive and independent (regarding the alleged action-reaction element of the arms race) nature of the Kremlin's military space program. Western analyses of the Soviet space program provide convincing evidence of Moscow's intention to acquire military superiority in outer space. Soviet military space capabilities illuminate Soviet objectives in outer space much more effectively than their statements do.

These analyses, along with an overview of the organization and control of the Soviet space program and an examination of Soviet space propaganda and diplomacy, which further underline the military nature of Soviet space capabilities, permit the following determination of Soviet Military Space Doctrine:

> The Soviet Armed Forces shall be provided with all resources necessary to attain and maintain military superiority in outer space sufficient both to deny the use of outer space to other states and to assure maximum space-based military support for Soviet offensive and defensive combat operations on land, at sea, in air, and in outer space.

Soviet Military Space Doctrine

1. Introduction

Considerable interest in the Soviet space program is developing in the West. Western analyses catalog a continuous and in-depth Soviet drive to improve on its current military space capabilities and to develop new ones as technological breakthroughs are achieved. Inevitably, questions arise: Why does the Soviet Union need these military space capabilities?; How do they intend to use them?; and Why do the Soviet authorities steadfastly refuse to acknowledge that they have military interests in outer space? This report will attempt to answer these questions by presenting a Soviet military space doctrine that elucidates the ultimate Soviet objectives in outer space.

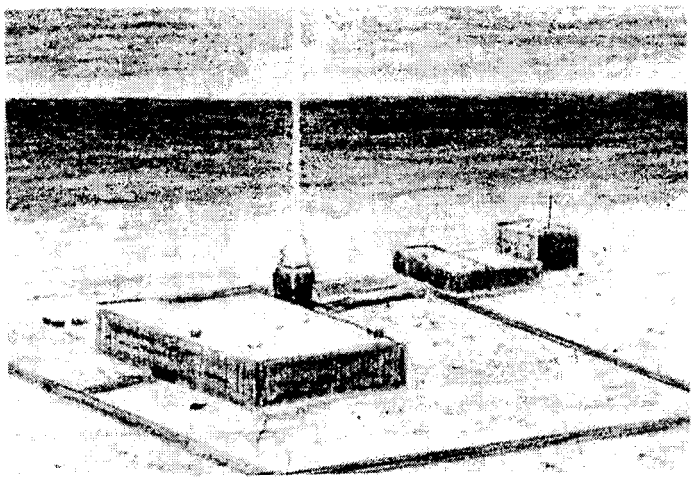
At the outset, it is important to note that the Soviet Union has a dynamic, expanding, and prodigious military space program. This determination is necessary because Soviet propaganda would have the world believe that the Soviet space program is wholly peaceful in nature, dedicated only to scientific and economic pursuits. In point of fact, however, the exact opposite is true: the Soviet space program is not only overwhelmingly military in nature, but the civilian scientific and economic aspects of the program are entirely subordinate to the military functions. This is not to imply that the nonmilitary benefits, including those related to Soviet prestige re-

The SL-4 Booster, Workhorse Launch System for the USSR.

garding space accomplishments, are worthless; they are not. Within the Soviet system, however, they are simply not nearly as important as the military benefits. For these reasons, it is more accurate and more objective to refer to the Soviet space program as the Soviet military space program and to Soviet space doctrine as Soviet military space doctrine.

Soviet propaganda, early in the space age, expressed some interest in the need to defend the USSR from enemy attacks from space, but now even these statements are judged inappropriate for the Soviet propaganda effort; only general statements, which do not specifically exclude defense against space attack, are permitted. Different approaches to this issue center on what can be construed as a space warfare function, that is, actual operations — either space- or land-based — to destroy enemy space systems on the one hand, and as space-based military support functions for terrestrial combat operations on the other. This issue goes beyond the issue of offensive weapons versus defensive weapons, for it can be demonstrated that both of these functions could be used to serve offensive and defensive operations.

As for the actual Soviet military space capabilities, it is beyond the scope of this report to give them due consideration. There are numerous publications that describe Soviet military space capabilities in detail.[1] This report will accept as a given the vast space-based military capabilities of the Soviet Union in the fields of reconnaissance and surveillance; command, control, and communications; missile launch detection and early warning; meteorology; geodesy; strategic and tactical targeting; and weapons (such as its antisatellite (ASAT) and laser programs). Also accepted as a given is the largely military nature of manned Soviet space systems, including their *Salyut* space station, their *Soyuz* spaceship, and their numerous manned systems under development, including a modular space station, a space plane, and a space shuttle. Furthermore, although it can be difficult to distinguish between offensive and defensive functions in the relatively unfamiliar environment of outer space, the military nature of much of the USSR's space capabilities is overwhelmingly offensive in character, since that is the essence of their military doctrine.



Artist's Concept of the Soviet ground-based laser which is a potential ASAT weapon.

2. Soviet Military Doctrine — General

The first step in developing an understanding of Soviet military space doctrine is to establish an understanding of general Soviet military doctrine, within which Soviet military space doctrine functions. Since the Soviet miiitary space program did not begin until 1961, with the launch of the first Soviet photoreconnaissance satellite, this review of general Soviet military doctrine will begin with the most immediate authoritative statement of Soviet military doctrine after 1961 — the first edition (published in 1962) of Marshal of the Soviet Union (MSU) V. Sokolovskiy's *Voyennaya Strategiya (Military Strategy)*.

The first edition of *Military Strategy* defines military doctrine as:
The expression of the accepted views of a state regarding the problems of political evaluation of future war, the state attitude toward war, a determinotion of the nature of future war, preparation of the country for war in the economic and moral sense, and regarding the problems of organization and preparation of the armed forces, as well as of the method of waging war. Consequently, by military doctrine one should understand the system of officially approved views on the basic fundamental problems of war.[2]
Except for the addition of the words "scientifically based" between the words "approved" and "views" in the last sentence of the above passage, this definition remained unchanged in the second (published in 1963) and the third (published in 1968) editions of the book.[3]

Another Soviet definition of military doctrine appeared in 1965 in the *Dictionary of Basic Military Terms*, part of a series of Soviet books called the Officer's Library:
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 sociopolitical order; the country's level of economic, scientific, and technological development; and the armed forces' combat material, with due regard to the conclusions of military science and the views of the probable enemy.[4]

Perhaps the most authoritative Soviet treatment of this subject can be found in the *Soviet Military Encyclopedia* (SME), an eight-volume compendium published between 1976 and 1980 under the direction of the Chief of the Soviet General Staff, MSU N. Ogarkov. The SME may in fact be intended to replace *Military Strategy* as the definitive Soviet comment on military matters. Its definition of "military doctrine" covers over four pages of text and begins as follows:
Military Doctrine, a system of views adopted in a state for a given period of time on the objectives and character of a possible war, on preparation of the country and armed forces for war, and on methods of waging the war. Military doctrine usually determines the enemy who will have to be fought in a possible war; the character and objectives of a war in which a state and its armed forces will have to participate, and their missions; what armed forces are needed for successful conduct of a war and the directions in their development; procedures for preparing the country for war; and methods of waging war. The basic provisions of military doctrine are determined by the social-political and economic system, level of production, status of the means for waging war, and the geographic position of one's own and the probable enemy's country; and they also stem from a state's domestic and foreign policy.
Military doctrine distinguishes two closely related and mutually dependent aspects — political and military-technical, with the leading role played by the former. The political aspect takes in matters concerning the political objectives and character of a war and their effect on the development of the armed forces and the country's preparation for war. The military-technical aspect, in conformity with the political provisions, includes matters concerning methods of waging war; military development, the technical outfitting of armed forces, and keeping armed forces combat ready.[5]

The SME then proceeds to offer a historical overview, based on a Soviet Marxist-Leninist analysis, of the development of military doctrine, with discussions of the military doctrines of various nations (the United States, the United Kingdom, the Federal Republic of Germany, and Japan) preceding the description of Soviet military doctrine. This approach is intended to emphasize the contrast between the "aggressive" military doctrine of imperialist/capitalist states and the "peace-loving" military doctrine of socialist states. The SME then provides a brief history of the development of Soviet military doctrine, culminating with the statement:
Contemporary Soviet military doctrine is a system of guiding principles and scientifically grounded views of the CPSU [Communist Party of the Soviet Union] and Soviet Government on the essence, character, and methods of waging a war that might be imposed on the Soviet Union by imperialists; and on military development and preparation of the Armed Forces and the country for defeating the aggressor.[6]

This is further amplified by claiming that:
Soviet military doctrine is uniform for all the Armed Forces. This means that its concepts have identical importance both for the Soviet military structure as a whole and for each Service of the Armed Forces. The military-technical aspect of Soviet military doctrine envisages, in case of an aggressor's attack, the conduct of decisive combat operations using the entire military might of the country and its Armed Forces. Soviet military doctrine proceeds from a multitude of forms and methods of accomplishing military missions in a possible war. Along with the attack as the decisive kind of military operation, it also recognizes the principle of defense on the strategic, operational, and tactical scale. But defense is viewed in Soviet military doctrine as a temporary and forced kind of military operation, which may be employed primarily on those axes and in those instances where there are insufficient forces and weapons, and time must be gained to build them up and create conditions for a subsequent transition to a decisive attack.[7]

These definitions of military doctrine are not exceptionally divergent in their essence, especially considering the different purposes of the publications within which they appear. There are, however, a number of important issues that require further clarification. Foremost among these is the division of military doctrine into political and military-technical aspects. The Soviets emphasize that the political takes precedence, for it is Marxist-Leninist principles that determine the class essence of war and purportedly prevent the USSR from initiating "unjust, predatory wars." Furthermore, as the CPSU controls all aspects of Soviet society, so also does it control the Soviet Armed Forces, insuring that they will successfully protect the regime internally and support the regime's objectives externally. The primacy of the political aspect also serves to underline the dynamic nature of Soviet military doctrine: note that the SME, in the first sentence of its definition, stresses that military doctrine is "adopted ... for a given period of time...." It is therefore expected to

change as conditions and circumstances warrant.

The military-technical element of Soviet military doctrine is concerned with general policy guidance regarding the preparation of the Armed Forces to execute the political goals of the CPSU. The concern here is not with tactics, or even strategy:

Military strategy occupies a subordinate position with regard to military doctrine. Military doctrine determines overall policy, in principle, while military strategy, starting from this overall policy develops and investigates concrete problems touching upon the nature of future war, the preparation of a country for war, the organization of the Armed Forces, and the methods of warfare.[8]

In this sense, then, it is important to note that the Soviet understanding of the term doctrine is much more carefully defined than Western use of this term. Therefore, in this sense, it would be inaccurate to claim that the USSR has a military space doctrine; from the Soviet standpoint it might be a military space strategy or policy, but not a doctrine. For the purposes of this study, however, doctrine, unless specified to the contrary, will be used in the broader Western context.

Two other aspects of Soviet military doctrine merit further elaboration. One is the primacy of the offensive, in recognizing the attack as the decisive kind of military operation; the other refers to the uniformity of the concepts of Soviet military doctrine in their application to the Soviet Armed Forces as a whole and to each of the five Services of the Soviet military.[9] These points are of special interest in considering Soviet military space doctrine, for they emphasize that the role of the Strategic Rocket Forces and the Air Defense Forces, the two Soviet Armed Services most deeply involved in the Soviet space program, in overall Soviet military doctrine is equivalent to that of the other Soviet Armed Services. Certainly, then, Soviet military doctrine, requiring overwhelming force to defeat completely any enemy, while preserving the homeland, is sufficiently well developed to include space operations within its scope.

3. Soviet Views of Military Space Doctrine

a. *Soviet Statements Before 1967*

Given the dynamic nature of Soviet military doctrine, it follows that the Soviet leadership began formulating a doctrine concerning the military use of space at some point in the 1950s. Whether this process began before or after the launching of Sputnik (October 1957) is unknown, but it most likely was underway by the time the Soviet military space program began in 1961. Moscow does not, at the moment, admit that it has a military space program; consequently, it does not admit to possessing a corresponding doctrine for the use of its military space capabilities. It clearly has both, however, as will be shown by this chronological evaluation of Soviet statements on these issues. More evidence will be provided in later sections, which consider the organization of the Soviet military space program and Soviet space propaganda and diplomacy.

The first edition of Sokolovskiy's *Military Strategy* provides the starting point for this consideration of the Soviet view of military space doctrine. This edition contained an entire subsection, entitled "The Problems of Using Outer Space for Military Purposes," under a larger section, "Methods of Conducting Modern War," in Chapter VI, "Methods of Conducting Warfare." This highly polemical subsection concentrates entirely on the "aggressive military purposes" of the imperialist forces in their pursuit of "the mastery of space." The United States, especially, is singled out, with the claim that its space program is essentially military in nature. Various US satellite programs in reconnaissance ("espionage"), navigation, and communications are briefly discussed, as are US plans for such space systems as "satellite bombers," "manned space bombers," "orbital bombers," and "carrier-satellites (antisatellites) with antimissile missiles and interference apparatus." Sokolovskiy also claimed that "a considerable part of the US program of the mastery of space for military purposes is the creation of antispace weapons for the destruction of aerospace vehicles." The Soviets reached the following conclusion:

In this regard Soviet military strategy takes into account the need for studying questions on the use of outer space and aerospace vehicles to strengthen the defense of the socialist countries. This must be done to insure the safety of our country, in the interest of all socialist cooperation, for the preservation of peace in the world. It would be a mistake to allow the imperialist camp to achieve superiority in this field. We must oppose the imperialists with more effective means and methods for the use of space for defense purposes. Only in this way can we force them to renounce the use of space for a destructive and devastating war.[10]

In a different section of the same chapter, Sokolovskiy mentions the importance of antiair, antimissile, and antispace defense as factors in defending the USSR and the possibility of using "a stream of high-speed neutrons" to defeat incoming rockets.[11] Space also was discussed in Chapter II, "Military Strategy of Imperialist Countries and Their Preparations of New Wars," which offered a general breakdown of the US space program in a fairly straightforward manner; and in Chapter IV, "Nature of Modern War," which mentioned the influence space systems are expected to have in future wars:

The achievements of modern science, technology, and industry in the creation and production of nuclear charges, rockets of different types and classes, and military radio-electronics constitute the base upon which the entire system of armament of a modern army is

constructed. It must be assumed that in the near future radical corrections will be able to be introduced into this system as a result of the incorporation of various cosmic means. All of this in turn conditions the nature of a future war, the methods of waging it, and the principles of organization of the armed forces.[12]

The conclusion also contained a reference to the military use of outer space:

The methods of waging war as a whole are expressed by the totality of the types of military actions: nuclear rocket strikes...; protection of a country and its armed forces against nuclear rocket strikes; actions in land theaters, and actions in naval theaters and probable types of military actions in space. Because in recent years the imperialist aggressors have devoted great attention to a study of the possibilities of carrying out military actions in space, and through space, Soviet military strategy cannot ignore this fact and must study the possibilities opening up in this sphere of military action.[13]

The second edition, published only 1 year after the first, contained some changes, but these were mainly additions of updated information. There were no significant omissions. For instance, the second edition mentioned the possibility of studying the use of lasers, plasma (ball lightning), antimatter systems, and antigravity as weapons; emphasized a number of Soviet space accomplishments, including the flight of the first woman astronaut, as evidence of "the tremendous achievements of the Soviet Union;" and claimed that the United States is planning to use the moon for military purposes.[14]

A more notable addition concerned the inclusion of outer space as an area that may be used for military operations in a future war. In the first edition concern was expressed for the "enormous dimensions" of a future war, which was expected to "encompass practically every continent of the world," but no specific direct mention of outer space was made in that context. The second edition supplements this concern with the statement: "The concept of 'geographic expanse' of war in the future will require a substantial supplementation inasmuch as military operations may embrace outer space."[15] The similarities between the first two editions of *Military Strategy* are extensive largely because they were published so close to each other in time. The third edition contained many changes, but before these can be considered another source of Soviet military space doctrine from the mid-1960s will be considered.

The 1965 publishing of the *Dictionary of Basic Military Terms* introduced a series of open Soviet statements on the military uses of space. Some of these statements, however, are allegedly non-Soviet in nature, which is indicated by appending the qualifier "foreign" in parentheses after the title of the term being defined. This is a common Soviet propaganda tactic, which permits the discussion of sensitive or controversial topics and concepts without admitting that the Soviets possess similar or identical views on the subjects. Use of the qualifier "foreign" is particularly widespread in Soviet treatment of military space issues, largely because Soviet propaganda denies any Soviet military exploitation of outer space. Moscow is then free, supposedly, to discuss US military space programs while denying the existence of equivalent Soviet capabilities. As shall be shown below, however, Soviet use of the qualifier "foreign" provides an additional indicator of the actual, though unstated, Soviet approach to the use of its military space systems. And, in any case, simply appending the word "foreign" to a concept does not mean that the Soviets are not involved in the activity. It only means that they will not admit their involvement.

The *Dictionary of Basic Military Terms* includes a definition of SPACE (AEROSPACE) DOCTRINE (space-related subject headings from this and other Soviet sources are capitalized), qualified as "foreign": "A doctrine envisaging active hostilities in space, and regarding mastery of space as an important prerequisite for achieving victory in war." The definition of MILITARY SPACE SYSTEMS, however, is not qualified as "foreign": "Systems used for military purposes in space, namely, to carry nuclear weapons, to conduct reconnaissance, to organize radio-countermeasures, to effect communication and control, and to destroy space vehicles. Military space systems will include various types of artificial earth satellites and space ships, such as missile-armed satellite bombers, manned space bombers, etc."[16] ANTISPACE DEFENSE also is not listed as "foreign": *A component part of air defense. The main purpose of antispace defense is to destroy space systems used by the enemy for military purposes, in their orbits. The principal means of antispace defense are special spacecraft and vehicles (e.g., satellite-interceptors), which may be controlled either from the ground or by special crews.*[17]

It is important to note that this definition refers to destroying space systems "in their orbits;" it does not, therefore, apply to antiballistic missile systems, which are the responsibility of the antimissile defense component of the Air Defense Forces.[18] This passage can be interpreted in two ways: either the USSR has, or intends to develop, satellite-interceptors (ASATs), or the United States has them to use against "the enemy" — which could only be the Soviet Union. Either way, the implication is clear: the Soviets have, or intend to develop, military space systems. They tested their first ASAT in 1968.

This publication also defines AIR-AND-SPACE SUPREMACY — "Attainment of an advantageous position by a given country in the means of air-and-space attack, and in the use of space for military purposes"; AEROSPACE OPERATIONS — "Offensive operations effected by means of missiles and aviation... for

the purpose of destroying (neutralizing) objectives on land, on water, and in the air ..."; and AEROSPACE FORCES — "A major formation consisting of units and formations armed with the means of aerospace attack. They constitute the basis of the air forces of the US and NATO, and are the principal strategic weapons." All of these are qualified as "foreign".[19] Several other relevant definitions, however, are not so qualified: AEROSPACE ATTACK — "An attack from the air and from space, made with missiles and aviation ... for the purpose of destroying (neutralizing) objectives on land, on water, or in the air"; MEANS OF AIR AND SPACE ATTACK — "Weapons used to inflict strikes from the air (or from space), on aboveground (or underground) and abovewater (or underwater) objectives, and to destroy targets in the air or in space. Means of air and space attack include: ... orbital and aerospace craft, carrying or capable of carrying various munitions (means of destruction);" and RECONNAISSANCE SATELLITE:

A space vehicle specially equipped with reconnaissance instruments, injected into a given orbit for intelligence purposes. A reconnaissance satellite may be launched into space in order to reconnoiter enemy ground installations and to determine their coordinates; to detect launchings of intercontinental ballistic missiles; to detect submarines and nuclear explosions; to identify enemy satellites in orbit; etc. The reconnaissance information obtained may be returned to earth in containers or may be transmitted automatically.[20]

The inconsistencies in the Soviet use of the qualifier "foreign" in the *Dictionary of Basic Military Terms* are glaring, except in the case of ANTISPACE DEFENSE: at this point in time, 1965, it was still permissible for the USSR to admit an interest in defending itself from an attack from space. For the other concepts, it appears that the Soviets are attempting to distinguish between the possession of aerospace weapons and military support capabilities (MILITARY SPACE SYSTEMS, AEROSPACE ATTACK, MEANS OF AIR AND SPACE ATTACK, and RECONNAISSANCE SATELLITE) by both the US and the USSR on one hand and the way these weapons and systems would be used (SPACE (AEROSPACE) DOCTRINE, AIR-AND-SPACE SUPREMACY, and AEROSPACE OPERATIONS), i.e., aggressively by the United States, defensively by the Soviet Union. Only AEROSPACE FORCES seems out of place under this scenario. Despite these inconsistencies in the application of the qualifying term "foreign," the *Dictionary of Basic Military Terms* is essentially consistent with Soviet statements in the first two editions of Sokolovskiy, with ANTISPACE DEFENSE presented in a more detailed manner.

b. *Soviet Statements After 1967*

Until 1965, the Soviet leadership, while condemning US military use of space and not admitting, outright, any Soviet military use of space, nonetheless was sufficiently vague in some of their statements to indicate, at least, an intention to explore the possibilities of defending the USSR from a spaceborne attack, and, by extension, to deny an opponent the opportunity to gain supremacy in space. In the Soviet view, such an objective is best accomplished by the Soviet acquisition of such supremacy; the idea of maintaining a balance or "staying even" with a foe is alien to Soviet military thought. Such statements are not usually made openly, due to propaganda considerations, but they clearly are implied in some of the statements considered above. In 1967, however, Moscow signed the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereinafter referred to as the Outer Space Treaty). That event marked a perceptible change in Soviet statements regarding the military use of space. The treaty prohibits the placing of "nuclear or any other weapons of mass destruction" in orbit around the earth, on the moon, or any other celestial body, or anywhere else in outer space; it also limits the use of the moon and other celestial bodies exclusively to peaceful purposes.[21] The treaty does not, however, restrict the use of space for communications, reconnaissance, early warning, or other military support functions. It also, of course, does not restrict the stationing of nonnuclear weapons in outer space (except on celestial bodies, apparently). Moscow's acceptance of the treaty's provisions, nonetheless, caused some noticeable changes in Soviet rhetoric concerning their alleged dedication to the peaceful use of outer space.

The third edition of *Military Strategy* (published in 1968), in particular, reflected this change of emphasis. The entire section entitled "The Problems of Using Outer Space for Military Purposes" previously found in Chapter IV was omitted, with much of the material located instead in Chapter II, "The Military Strategy of Imperialist Countries."[22] This was obviously an attempt to buttress the Soviet claim that only the imperialists seek to exploit outer space for military purposes. Several key passages, which indicate a concern that the USSR not allow the West to gain superiority in outer space, were also omitted (see the passages sourced under footnotes 10 and 13), eliminating any indication that the Kremlin might be developing its own military space program. On the other hand, two passages that remained in the third edition of *Military Strategy* seem to indicate an unalterable Soviet interest in exploring the development of military space technology: one was mentioned above (see the passage sourced under footnote 12); the other, in referring to the development of Antispace Defense, states that "...as surely as an offensive weapon is created, a defensive one will be too."[23] As a result of the Outer Space Treaty, therefore, the Soviet leadership had begun restricting the

permissible boundaries of discussion regarding Soviet interest in the military use of outer space, even though such discussions had always been framed in terms of defense against enemy space attacks. This tendency, as described below, has become more pronounced in the coming years.

The most authoritative Soviet opinions on military space doctrine are found in the *Soviet Military Encyclopedia* (SME). The SME reflects the continued evolution of the USSR's public stance on the militarization of space. This evolution, as traced in the above sources as well as in the SME, has the Soviets move from a position of open, though cautious, interest in the use of outer space for military purposes, to a more restricted expression of defense-oriented concern that they not be outflanked, to the final, current position that the Soviet Union has no interest in military space systems. Certain themes throughout this period have remained constant: it has always been the imperialist aggressors who have sought to exploit outer space for military purposes, while the Soviets have sought only peaceful scientific and economic pursuits in space. These themes will be given further emphasis in Part 5, below.

In the SME the following subjects consider the military use of space and are therefore qualified as "foreign": ANTISPACE DEFENSE, SPACE WAR, SPACE RECONNAISSANCE, SPACE WEAPONS, SUPREMACY IN SPACE, SELECTION OF AEROSPACE TARGETS, MEANS OF DETECTING AEROSPACE TARGETS, and THE AEROSPACE SITUATION. The new definition of ANTISPACE DEFENSE is particularly interesting, for several reasons. It reads:

A complex of forces and weapons as well as the measures and actions undertaken to detect and defeat (disable) enemy spacecraft. Defense against space systems usually includes various facilities for monitoring space and for defeating (disabling) spacecraft. Ballistic missile detection radars, other radars, electro-optical stations, powerful space tracking telescopes, and other facilities and data sources are used for monitoring outer space. Data from all sources comes into a processing center, equipped with a complex of high-speed computers, where the orbital parameters, parent country, and purpose of space objects are determined and where they are catalogued. Target designation data for intercepting the spacecraft are developed where necessary. The intercept and defeat (disabling) of an enemy spacecraft may be accomplished by special systems that support the launch of automatic satellite interceptors and their guidance to the spacecraft designated for destruction. It is also accomplished by antimissile fire complexes, [antiballistic missile systems].[24]

Not only is ANTISPACE DEFENSE now attributed to foreign sources, it is no longer described as a component of air defense. Moreover, the 1965 definition concentrated solely on the "destruction" of enemy spacecraft, using the Russian word "unichtozheniye," which clearly translates into "destroy." The 1978 definition, however, uses the Russian word "porazheniye," implying a more general concept such as to "defeat, disable, or take out of action." Antispace Defense can thus be accomplished through such means as blinding satellite sensors, jamming communications, and destruction of ground installations as well as the destruction of the spacecraft itself. The 1978 definition also includes the means of detection, tracking, and identification of enemy spacecraft, items that were absent from the 1965 definition, presumably because that definition of ANTISPACE DEFENSE was not qualified as "foreign." The Soviet military, however, has continued to test its ASAT system. The changes described above, therefore, are wholly rhetorical in nature.

The SME describes SPACE WAR as military operations using space and antispace resources and systems with the aim of weakening the enemy's space forces or achieving supremacy in outer space. This can be accomplished via the "destruction [unichtozheniye] or disabling" of enemy military spacecraft; the use of space systems for reconnaissance, early warning, navigation, communications, meteorology, geodesy, and targeting for nuclear strikes; as well as the use of spacecraft equipped for operations against objectives on the earth's surface. (SPACE WAR presumably can include space-to-ground strikes against space launch facilities and space command and communications centers.) All aspects of SPACE WAR are attributed exclusively to the United States; there is no mention of a Soviet need to guard against such warfare, though the Outer Space Treaty and other international agreements designed to limit the militarization of space are noted. The only comment on the Soviet space program is limited to a statement of its totally peaceful nature.[25] It could easily, however, despite Soviet claims to the contrary, be posited that this entry offers a blueprint for planned Soviet military operations in space.

SPACE RECONNAISSANCE, defined as "measures for acquiring intelligence through the use of cosmic means," is also attributed solely to the US military. While the SME mentions ballistic missile early warning and nuclear detonation detection as elements performed by space reconnaissance satellites, no mention is made of the right to use national technical means of verification for the monitoring of nuclear arms limitation agreements (nor is it mentioned that, under the terms of the relevant treaties, it is illegal to impede such treaty verification measures). The implication is that the United States conducts space reconnaissance only for espionage purposes. The Soviets admit that it "is difficult to take active countermeasures against" such reconnaissance, but suggest (presumably to Soviet officers) that "special measures" be "taken to conceal military installa-

Artist's Concept of the Soviet Antisatellite Interceptor (ASAT) Destroying a Target Satellite.

tions."[26] (As noted above, space reconnaissance, under the heading RECONNAISSANCE SATELLITE, was not qualified as "foreign" in the *Dictionary of Basic Military Terms.)*

SPACE WEAPONS are described as "equipment designed to perform military missions in or from space," including such equipment "located on celestial bodies." Again, all examples are described as those of the US Armed Forces. The various types of SPACE WEAPONS include automatic satellites for radar ferret and photoreconnaissance, navigation, communications, meteorology, geodesy, early warning, and nuclear detonation detection, as well as "manned spacecraft, aerospace vehicles, orbiting space stations," and the "reusable space shuttle." The latter is described as a particularly effective space weapon, whether conducting missions on its own or supporting the operations of orbiting space stations.[27] Insisting that only the United States possesses such weapons and systems, when the USSR either has or is actively developing all of them, stretches the bounds of credibility too far: how can statements of Soviet peaceful intentions regarding outer space be taken seriously when Moscow so duplicitously distorts the actual situation?

SUPREMACY IN SPACE is described as "a situation in which the military space systems of one side have decisive superiority over the systems of the other side. The side dominant in space is capable of performing its missions without significant enemy opposition." Furthermore, "superiority in the quantity and quality of space systems is important for achieving supremacy in space." While space-based military support missions figure in this determination, "military space weapons capable of destroying targets in space as well as ground (or naval) objects are of decisive importance." SUPREMACY IN SPACE, finally, "is examined on a global scale and not tied to a theater of operations, the territory of individual countries, or military coalitions;" it "encompasses all of space, both close and distant."[28] While the SME repeatedly mentions that these are the views of "foreign military experts," there can be no doubt that the Soviet leadership holds similar views, particularly when one considers the military space capabilities of the Soviet Union.

The other three items that deal with the military use of space, and are therefore qualified by the term "foreign," are more technical in nature than the entries already considered. SELECTION OF AEROSPACE TARGETS is concerned with the differentiation of targetable objects in air or space from a background of false images created by natural or manmade interference with the means of detection.[29] MEANS OF DETECTING AEROSPACE TARGETS briefly discusses the use of radar to monitor the aerospace environment as an element of antiair, antimissile, and antispace defense.[30] THE AEROSPACE SITUATION is described as the general conditions

prevalent in air and space over a specific period of time. This includes the presence of manmade objects in space, the means of tracking them in space and as they return to earth, and various natural phenomena, such as meteorites and climatic conditions. The SME notes here that the nations of the world have agreed not to orbit nuclear weapons.[31] These passages reflect just how hypocritical the Soviet leadership is in regard to the military use of space. While the Soviets openly discuss military requirements and principles for their ground, rocket, air and naval forces, they do not do so for the military forces they have or may develop to use in space, even when the purpose of these forces could be couched in purely defensive terms.

The SME offers definitions of a number of other possibly military-oriented, space-related subjects that are not claimed to be foreign in nature. These include: AEROSPACE VEHICLES, THE 1967 OUTER SPACE TREATY, ARTIFICIAL EARTH SATELLITES, SPACE COMMUNICATIONS, SPACE SYSTEM, SPACE TECHNOLOGY, SPACECRAFT, SPACE LAW, COSMONAUTICS, *COSMOS*, METEOROLOGICAL SATELLITE, SPACE STATION, SPACE PLANE, *SALYUT*, *SOYUZ*, and TRANSPORT SPACECRAFT. (There are others that deal with various natural phenomena and purely technical issues that need not be considered.)

AEROSPACE VEHICLES are described as a class of flying vehicles that can achieve near earth orbit in space and also maneuver in the atmosphere with the help of aerodynamic forces. An example is the US space shuttle, which the Soviets designate as the "reusable transport spaceship." The entry mentions that a number of countries began work on developing such vehicles for military purposes in the 1950s and 1960s and then cites only the US space shuttle as an example.[32] The SME, therefore, does not exclude the possibility that the USSR is developing such a vehicle. The Soviet description of THE 1967 OUTER SPACE TREATY is fairly straightforward and nonpolemical; although it is noted that the Treaty's intent is to avert an arms race in space, no state is accused in this article of hindering such a development.[33] Likewise, in the passage on ARTIFICIAL EARTH SATELLITES, the SME is largely concerned with technical and orbital characteristics. The various types of satellites are discussed with Soviet (only nonmilitary) and Western examples provided. It is noted that some countries use satellites to perform military functions such as photoreconnaissance, radar ferret collection, ballistic missile launch detection, and military communications. Again, the SME does not specifically deny that the USSR uses satellites for such purposes. But neither is such Soviet usage affirmed.[34]

The SME definitions of SPACE COMMUNICATIONS and SPACE SYSTEM again are largely technical in nature. The use of satellites for military communications is briefly described — with appropriate exam-

ples from US and Western systems—and a SPACE SYSTEM is defined as a complex of interworking facilities on earth and in orbit designed to perform tasks in space and from space.[35] SPACE TECHNOLOGY is also limited to a brief, nonpolemical description involving the accomplishment of various scientific and applied objectives. No mention is made of any military exploitation of SPACE TECHNOLOGY.[36]

The SME entry on SPACECRAFT offers a fairly detailed description of the various types of satellites and manned vehicles that operate in outer space, noting that they can perform various scientific, economic (commercial), and military functions. Predictably, the SME emphasizes that it is only abroad, especially in the United States, that specialized spacecraft are used for military purposes. The major types listed by the SME — reconnaissance, navigation, communications, and multipurpose — are broken down by category and discussed in some detail, in a fairly straightforward manner. It is evident from the passage that the Soviets do not consider all communications satellites to be military in nature (even some nonmilitary US examples are offered). On the other hand, while the SME discusses all of the different types of military support satellites, no mention is made of space weapons such as ASATs.[37]

The Soviet definition of SPACE LAW follows the standard pattern of exaggerating the Soviet role in fostering the peaceful use of space, but otherwise presents a nonpolemical overview of the important international agreements that have come to regulate the use and exploration of outer space. The SME notes that these agreements have succeeded so far in achieving only a limited demilitarization of space, since "suborbital flights of military objects through outer space" have not been affected. It is also noted that the United States and the Soviet Union have agreed that national technical means of verification are permissible for the monitoring of arms control agreements, and that these functions may be performed by SPACE TECHNOLOGY.[38] Soviet inconsistencies in discussing national technical means of verification, however, raise a question regarding their intention to comply with existing treaties (see the SME entry on SPACE RECONNAISSANCE above).

The entry on COSMONAUTICS is entirely devoted to technical and historical information; it discusses US, as well as Soviet, manned space flights without any reference to the military use of space.[39] The SME's description of the *COSMOS* series of Soviet satellites, of course, also refers only to peaceful scientific and economic exploitation of outer space, although virtually all unmanned Soviet military spacecraft are given a *Cosmos* designation.[40] The passage on METEOROLOGICAL SATELLITES follows the same pattern, mentioning US and Soviet programs and referring only to nonmilitary functions.[41] The Soviet designation for SPACE STATION (literally, "Orbital Station") covers the same ground while discussing the Soviet *Salyut* series and the US Skylab program; there are no references to either having a military function.[42]

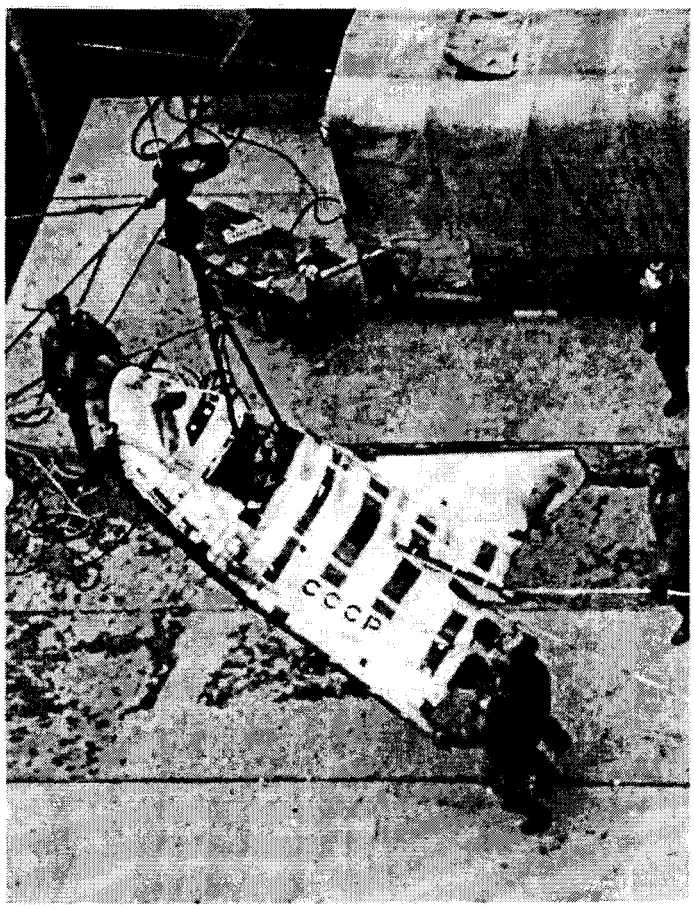
Of particular interest is the SME entry on the subject SPACE PLANE (literally, "Orbital Aircraft"), which is not qualified as foreign. It reads, in its entirety:

SPACE PLANE, a reusable, piloted aerospace vehicle. A special feature of its flight is its ability to enter and achieve near earth orbit, descend from orbit for maneuvers in the dense layers of the atmosphere (using aerodynamic forces), and return to a new orbit in outer space.[43]

While such a spacecraft, as noted in the SME entry on AEROSPACE VEHICLES, would apparently be used to supply orbiting space stations, it would also have a broad range of possible military functions, including surveillance. Such functions are not included in the entry on AEROSPACE VEHICLES, though the discussion of the US space shuttle mentions that it has unspecified military uses. The SME, therefore, does not specifically deny the possibility that the USSR might develop a space plane.

The SME's coverage of the USSR's *SALYUT* and *SOYUZ* manned space programs, predictably, offers no hint that they have any military functions.[44] The third link in this orbital complex (which the linking of a *Salyut* and a *Soyuz* creates), the unmanned TRANSPORT SPACECRAFT *Progress*, is also described in purely nonmilitary terms.[45] (While the Russian term "transport spacecraft" could be rendered in English as "space shuttle," it would be too confusing to use that designation.) The SME also has an entry on LASER and one on BEAM WEAPONS (LASER WEAPONS), with the latter entry qualified by the term "foreign." The BEAM WEAPONS (LASER WEAPONS) entry does not specifically mention using such weapons in outer space; it merely mentions that airplanes and rockets are likely targets for such weapons. The SME entry on LASER, however, notes that laser weapons are a promising means of destroying (porazheniye) intercontinental ballistic missile warheads and military satellites, strongly implying a space weapons function.[46] The entry includes laser weapons as a type of Beam Weapon, so it can still be claimed that such uses are "foreign" in nature.

While the SME indicates that the Kremlin's claim to have only a peaceful interest in outer space has intensified significantly since the mid-1960s, it is also evident that the Soviet approach to this issue is not entirely consistent. The passages on AEROSPACE VEHICLES and SPACE PLANE, for instance, hardly address the military possibilities of such spacecraft, and then only regarding the US space shuttle — presumably because the Soviet Union intends to develop them, ostensibly to service its manned orbital complexes. Indeed, the utter lack of Soviet statements regarding a Soviet interest in the defensive use of space-based military capabilities is incredi-



Recovery of the "Space Plane" by a Soviet Ship in the Indian Ocean.

ble, considering the Soviet propensity to discuss defense-related issues. The only possible conclusion is that the Soviets are interested in such matters, but prefer to conceal their interest for purposes of strategy and propaganda.

In mid-1983, the Soviets published their most recent compendium of military terminology, the *Military Encyclopedic Dictionary* (MED), again under the general direction of MSU Ogarkov. The title of this one-volume publication, transliterated as *Voyennyy Entsiklopedicheskiy Slovar'*, could actually be translated as "Military Encyclopedia" (an encyclopedic dictionary is, essentially, an encyclopedia and the Russian phrase "entsiklopedicheskiy slovar'" translates into English as encyclopedia), but that could engender confusion with the SME. There is the possibility, of course, that the MED is meant as an abbreviated version of the SME. According to the MED's Main Drafting (Editorial) Commission, the MED is based on the SME, although the former contains updated material (as of September 1982). Indeed, the various commissions and editorial boards of the two publications are essentially identical in structure and personnel.[47] An examination of the MED, however, reveals that the updating of information does not account for all of the differences between the SME and MED. This report, then, will concentrate on the differences between the presentation of space-related military subjects in the SME and the MED. Where no change is noted, the entry has essentially remained unchanged from the SME to the MED (taking into consideration the different nature of each publication).

There are noticeable variations in the MED regarding six space-related entries in the SME that were qualified as "foreign." Most glaring is the complete absence of entries on SPACE WEAPONS, SUPREMACY IN SPACE, and THE AEROSPACE SITUATION. Regarding the latter, mention is made of the concept of "The Aerospace Situation" as one existing among some foreign armed forces, under the MED entry on THE AIR SITUATION.[48] The MED, however, makes no reference whatsoever to SPACE WEAPONS, other than noting, under the entries for COSMONAUTICS and SPACE SYSTEMS, that the United States uses outer space for military purposes.[49] The absence of an entry on THE AEROSPACE SITUATION does not seem highly significant; the lack of an entry regarding SPACE WEAPONS and SUPREMACY IN SPACE, however, would appear to indicate a continuing, perhaps even increasing, Soviet reluctance to comment on the possible military uses of outer space.

The MED entry on SPACE RECONNAISSANCE is noteworthy in that it is not qualified by the term "foreign," as the entry is in the SME. Whether this can be interpreted as Soviet acceptance of the principle of space reconnaissance, even if only as a means of treaty verification, is not entirely clear. The entry still insists, as does the SME entry, that space reconnaissance "is a component part of

the US strategic reconnaissance." The MED definition is essentially an abbreviated version of the SME definition, except that the concept is no longer qualified as "foreign".[50] Another notable variation is present in the MED entry on SPACE WAR. In the SME this entry states that the objectives of a SPACE WAR would be the weakening of the "space forces" of the enemy or the achievement of superiority in outer space. The MED entry mentions neither of these objectives. It does state that the United States has a wide program of research into the military uses of space and that the USSR is resolutely opposed to such uses of space.[51] It is possible that this omission is the result of the need for brevity in the MED's entries. It may also, however, refer to the inconsistency of Soviet statements vis-a-vis their actions regarding outer space. If the United States uses space for military purposes, and the "enemy" of the United States has "space forces," then who could this enemy be? The USSR, allegedly, has no "space forces" of a military nature and it is, apparently, in the interests of maintaining this charade that the Soviets have altered their definition of SPACE WAR as it appears in the MED.

The final variation in this category involves the entry MEANS OF DETECTING AEROSPACE TARGETS. While both versions of this entry are essentially technical in nature, the MED is more specific in identifying the type of space tracking radar (those using very long-range superhigh-frequency bands) used to detect satellites and other space objects. The MED version also omits the concluding reference in the SME version to the need, when necessary, to provide "systems of destruction (porazheniye)" with "target designation" data.[52] The significance of this variation is not entirely clear. The MED entry is still qualified as "foreign," so it can be maintained that it is not discussing Soviet tactics or equipment. It may simply reflect the different nature of the MED.

There are a number of noteworthy variations among the other category of space-related entries in the SME and the MED — those that are not qualified as "foreign" but may have military significance anyway. One example can be found in the MED entry on THE 1967 OUTER SPACE TREATY. In the MED this entry concludes with the statement "In violation of the Treaty on Outer Space the USA is working on a program for the militarization of outer space (see "Shattl")" (with the parenthetical reference alluding to the MED entry on the US Space Shuttle).[53] The SME entry on the same subject contains no statement even remotely similar to this one, reflecting the intensification of Soviet propaganda on this subject since the SME was published. (In fact, the United States has not violated this treaty, with the space shuttle or any other system.) Another similar variation occurs in the MED entry on ARTIFICIAL EARTH SATELLITES. In this instance, after proclaiming that only capitalist states — especially the US — use satellites for military purposes, the MED notes that work is also progressing on the development of combat (boyevykh) satellites, earmarked for destroying (unichtozheniye) space vehicles and for attacking earth from space.[54] Again, the SME entry contains no such similar statement. These variations indicate that the Soviet leadership is only willing to discuss the militarization of outer space by the United States; this does not, however, resolve the inconsistency evident in the Soviet reluctance to mention any of its own antispace defense measures.

The pattern continues in the MED entry SPACE SYSTEM with a concluding statement that the United States is devoting great attention to the development of military space systems.[55] This statement stands in sharp contrast with the SME entry SPACE SYSTEM, which was largely technical in nature. The MED entry on COSMONAUTICS varies from the SME only in its mention of the successful flight of the US space shuttle Columbia in 1981. It states that the primary aim of Columbia is to acquire information on the universe through the accomplishment of scientific and economic tasks, but concludes by noting that the US also uses it for military purposes.[56] Such a statement, in this context, is relatively nonpolemical and it would appear that the primary motivation for this variation is to provide updated information.

The SME entry SPACE PLANE (literally, Orbital Aircraft — from Orbital'nyy Samolyot) is found in the MED under the following heading: *Orbital'nyy Korabl*, literally "Orbital Ship," which is not to be confused with *Kosmicheskyy Korabl*, literally "Space Ship." It appears that the Soviet designation *orbital'nyy*, in this case, indicates that the vessel in question can operate both in the atmosphere and in outer space, as opposed to a *kosmicheskyy* vessel (such as the Soviet *Soyuz* and the US Apollo), which functions only in outer space (doing little, if any, actual maneuvering upon reentry into the earth's atmosphere). The designation *orbital'nyy* does not have this meaning when applied to space stations such as the Soviet *Salyut* and the US Skylab. The designation of this type of spacecraft as a *korabl'*, rather than a *samolyot*, apparently reflects a more accurate description of the vessel's working environment, but to minimize confusion over terminology, this space ship will still be referred to as a space plane. The MED definition does not differ substantially from the SME version, except that the new definition of SPACE PLANE allows for automatic, as well as piloted, flights, does not specify that it is reusable; and refers to it as a type of space ship rather than a type of aerospace vehicle, in keeping with the new designation.[57] The variations in the Soviet definitions of SPACE PLANE appear to indicate a refinement of Soviet thought on the subject, which would tend to reaffirm the likelihood that the USSR is developing such a vehicle.

There is an additional variation regarding Soviet descriptions of the

"foreign" term AIR DOCTRINE. While the SME and MED definitions are essentially identical, the MED apparently equates air doctrine with aerospace doctrine. (The SME definition of AIR DOCTRINE does not mention aerospace doctrine.)[58] At one point in the body of the entry the term "air doctrine" is simply followed by the term "aerospace doctrine" in parentheses; this arrangement, however, is not observed at the beginning of the entry, after the subject heading, where it would presumably carry the most authority. If it can be assumed that air doctrine and aerospace doctrine are equivalent terms, it would appear that the Soviets believe the United States intends to use its air and space forces extensively, in concert with its ground and naval forces, in any appropriate conflict. The same also can be said for the Soviet Union, whose military doctrine applies uniformly to all five Services of the Soviet military.

Beyond the variations noted above, the MED contains several entries on space-related subjects of possible military orientation that are not included in the SME. These additions appear to involve updated information, and support recent trends in Soviet propaganda. The MED entry on the COLUMBIA, the first US space shuttle to complete an operational mission, for instance, describes the space shuttle as a purely military spacecraft, intended to carry military cargo into outer space, including weapons and reconnaissance devices.[59] The MED entry entitled *SHATTL* (meaning the US space shuttle) is only slightly less propagandistic. It claims that the shuttle is intended to place into orbit and return to earth "military and other payloads" and that the Pentagon is planning on it as a major element in its use of outer space for military purposes.[60] By contrast, the entry of REUSEABLE SPACE DEVICES is wholly technical in nature, making no mention of the possible uses of such spacecraft, although the US space shuttle Columbia is mentioned as an example.[61] The implications of these new entries are clear: reusable US spacecraft are essentially military in nature and thus contribute to the destabilizing arms race. Since the USSR is also developing reusable spacecraft, however, it is necessary for the Soviets to describe such vehicles in neutral terms, which is accomplished in the nonspecific entries about the general types of such spacecraft.

The MED also has entries on SPACE SHIP *(Kosmicheskiy Korabl')* and SPACE COMPLEX *(Kosmicheskiy Kompleks)*, which were not included in the SME. The SME had a subject heading for SPACE SHIP, but directed readers to the entry on SPACECRAFT *(kosmicheskiye Apparaty)*; this entry then covered all the different types of artificial earth satellites and interplanetary scientific probes. SME coverage of the MED entry on SPACE SHIP (which are manned space capsules such as the US Apollo and the Soviet *Soyuz)* is found under the entries for these specific vehicles. Since the MED entry on SPACECRAFT is very condensed in comparison with the SME entry, these changes are presumably related to the different natures of the two publications. SPACE COMPLEX is an entry which was not mentioned in the SME and thus reflects a relatively new concept in Soviet thought on space-related matters. A SPACE COMPLEX is defined as the combined space- and land-based elements of a particular method of accomplishing specific assignments in or from space; adding the users of such information to the space complex creates a SPACE SYSTEM, as defined by the MED, which is a slight variation from the SME entry on SPACE SYSTEM.[62] While the Soviets use only nonmilitary examples in the MED, this structure may also apply to Soviet military space systems.

Analysis of the MED reveals that the trends of Soviet statements concerning the military use of outer space, which were identified in earlier publications, have been accentuated in their most recent presentation. Not only has Soviet propaganda regarding allegedly widespread US militarization of outer space, especially involving the now operational US space shuttle program, increased, but the USSR, as always, steadfastly refuses to acknowledge their own military space programs. Actually, such detailed Soviet descriptions of US space programs are additional indications of intense Soviet interest in space weapons. Indeed, Soviet treatment of subjects such as SPACE WEAPONS, SPACE WAR, and SPACE RECONNAISSANCE appear to indicate a certain refinement of Soviet propaganda techniques regarding their reluctance to admit their use of even defense-related and military support space systems. Furthermore, purely technical entries on such subjects as SPACE PLANE and REUSABLE SPACE DEVICES indicate a continuing Soviet interest in the development of such space programs. This, in turn, reinforces the Soviets' need for a military space doctrine, whatever their protestations to the contrary, especially when the full implications of the Soviet Union's military space capabilities are considered.

4. The Organization and Control of the Soviet Space Program

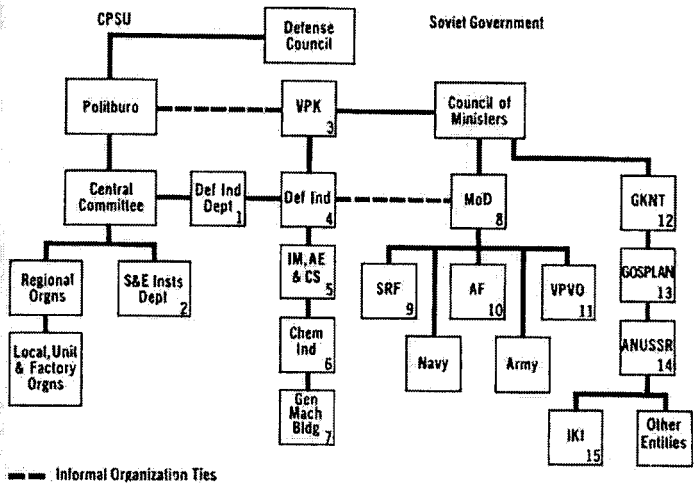
The military nature of the Soviet space program is evident from what is known regarding its organizational structure. At the apex of the system undoubtedly stands the Politburo, and specifically those most powerful members of the Politburo who form the Defense Council. General guidance and major decisionmaking for the Soviet military space program resides here, with Minister of Defense Ustinov considered to be the Politburo/Defense Council member responsible for overseeing the program. Presumably, there is a division of labor between the Politburo and the Defense Council, with the former providing general control and direction of the space effort and the latter making fundamental national-level decisions on military space research, design, development, testing, and production.[63] It must be pointed out, however, that Soviet secrecy in these

matters prevents the West from fully understanding the exact interrelationships among the various institutions or organizations involved in the Soviet military space program.

There is no doubt about overall CPSU control of the space program. The Central Committee (CC), structured to parallel the Soviet Government at the ministry level, participates in the decisionmaking process through the CC Departments for Science and Educational Institutions and for the Defense Industry. The CC Defense Industry Department monitors the work of the defense industrial hierarchy. The CPSU, of course, exercises its control at all levels of the space program, from the apex to party cells in factories and military units. The Soviet Government, with the Council of Ministers as its highest organ, is charged with implementing party policy. The Council of Ministers oversees the following entities, which control research and development and all the industries involved in the space program: the Ministry of Defense, the Ministry of Defense Industries, the Military Industrial Commission (VPK), the State Committee on Planning (Gosplan), the State Committee on Science and Technology, the USSR Academy of Sciences, the Ministry of Instrument Making, Automation Equipment and Control Systems, and the Ministry of the Chemical Industry.[64]

The VPK, reporting in accordance with party guidance to the Council of Ministers, is responsible for actual program management of the Soviet military space program, coordinating the activities of all entities involved in the production of space systems. Its chairman, L. Smirnov, is a Deputy Chairman of the Council of Ministers as well as a member of that body's Presidium. The responsibility for the actual design and production of liquid-propellant ballistic missiles, space launch vehicles, and spacecraft most likely rests with the Ministry of General Machine Building.[65]

Gosplan, the State Committee on Science and Technology, and the USSR Academy of Sciences are other government entities that have input into the management of the Soviet military space program. Gosplan has some input into the military space program because it is necessary to integrate the space effort with other national undertakings. The State Committee on Science and Technology is responsible for coordinating civilian industrial research and development; its ties to the Soviet military are not well documented, but a number of the committee's officials are also active in the defense industrial sector. For this reason, there is some speculation that it is involved, at least peripherally, in coordinating some of the associated research and development activity contributing to the space program. The USSR Academy of Sciences is presented by the Soviets as a rough equivalent to the National Aeronautics and Space Administration and it does oversee the work of such entities as the Institute for Space Research, the Commission for the study and Use of Outer Space, the Council for Interna-



1. Central Committee Defense Industries Dept.
2. Central Committee Scientific and Educational Institutions Dept.
3. Military Industrial Commission.
4. Ministry of Defense Industries.
5. Ministry of Instrument Making, Automation Equipment and Control Systems.
6. Ministry of the Chemical Industry.
7. Ministry of General Machine Building.
8. Ministry of Defense.
9. Strategic Rocket Forces.
10. Air Force.
11. Air Defense Forces.
12. State Committee for Science and Technology.
13. State Committee for Planning.
14. USSR Academy of Sciences.
15. Institute for Space Research.

Soviet Military Space Organization.

tional Cooperation in the Studies and Uses of Outer Space, and the Commission for the Promotion of Interplanetary Flights; it also operates some of the space tracking stations within the USSR.[66] The contributions of these entities to the Soviet space program, however, appear to be minor, especially in comparison with the dominant role of the Soviet military.

All five components of the Soviet Armed Forces are involved in the development and operation of the Soviet space program. The Strategic Rocket Forces are responsible for all activities associated with space launches, satellite tracking, and space payload recovery, as well as providing all logistic support for the space program. The Soviet Air Force is heavily involved in the Soviet manned space program — so much so that the official journal of the Soviet Air Force is entitled *Aviation and Cosmonautics*. Soviet Cosmonauts are trained by the Air Force and generally wear Air Force uniforms.[67] The Director of Flight Training for the Cosmonaut Corps is Lieutenant General of Aviation V. Shatalov, a former cosmonaut, who is also the Deputy Commander in Chief for Space Navigation in the Soviet Air Force.[68] Soviet sources no longer publicize the antispace defense element of the Soviet Air Defense Forces (as noted above), but antispace defense was once officially listed, along with antiair and antimissile defense, as a component thereof. It can be assumed that the Soviet Air Defense Forces still have this responsibility. The Soviet Army and Navy are less involved in the Soviet military space program than the other Services, but still rely on space assets for considerable, and sometimes significant, support functions.

In addition, the three Soviet space assembly and launch complexes at Tyuratam, Plesetsk, and Kapustin Yar are all run by the Soviet military. Tyuratam, which the Soviets call the Baikonur Cosmodrome (in an attempt to conceal the exact location of the launching facility), launches all manned flights and all the Fractional Orbit Bombardment System (an orbiting nuclear warhead tested in the late 1960s) and antisatellite inspector flights, among others. The Soviets do not specifically acknowledge the locations of their other two launch facilities either. Plesetsk launches many Soviet navigation satellites, weather satellites, and the majority of other military satellites (serving a wide range of purposes) and Kapustin Yar handles multiple payload communications satellite launches, among others.[69] As this analysis indicates, the organization, administration, and management of the Soviet space effort is overwhelmingly military in nature, as befits the overwhelmingly military nature of the space program itself.

5. Soviet Space Propaganda and Diplomacy

This section will examine Soviet propaganda regarding the US and Soviet space programs to ascertain why the Kremlin insists on denying the existence of even a defensive Soviet military space program. Such a stance seems especially odd when the Soviet Union openly discusses the military forces it intends to use on land, in the air, and at sea. After considering recent Soviet propaganda on this subject, the focus will shift to an examination of Soviet diplomatic proposals regarding outer space. The objective is to determine how the Soviets seek to further their military aims in outer space through the use of these nonmilitary tactics.

Soviet propaganda is particularly hypocritical in its treatment of the space programs of the US and the USSR. Soviet propagandists would have the world believe that everything the United States does in space has military applications and that all Soviet space programs are wholly peaceful, dedicated only to scientific and economic pursuits. MSU Ustinov, the Soviet Defense Minister since 1976, wrote in 1982 that the USSR "upholds the necessity of not permitting the militarization of outer space" while "the United States has of late been embarking on a broad program for the militarization of outer space," which he claims is contrary to the 1967 Outer Space Treaty and the 1977 Soviet-US Agreement on Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes.[70] (This from a man who has been deeply involved in the Soviet military space program since its beginnings.[71])

US statements regarding the military nature of Soviet space programs are summarily dismissed. A Soviet Defense Ministry spokesman, Colonel A. Timofeyev, expressed it this way in an August 1982 *Pravda* article:

The United States, supposedly, is developing space weaponry programs only out of fear that similar projects have been launched in the USSR. All this is a premeditated lie, a propagandistic myth. ... The Soviet Government has undeviatingly striven to see that space will become an arena of exclusively peaceful cooperation.[72]

Nevertheless, Soviet reactions to US military space programs differs from Soviet reactions to other US military programs.

While the Kremlin was quite specific in detailing its military "countermeasures" to the deployment of US intermediate-range nuclear missiles in Western Europe, their response to US military space programs has been quite vague, promising reactions but refusing to describe them. In criticizing US proposals to develop a space-based antiballistic missile (ABM) system, a Soviet space spokesman stated that the deployment of such a system "will inevitably lead the other side to develop weapons for protection and counteraction. ... The Soviet Union will never allow US military superiority and will never find itself disarmed in the face of any threat."[73] These themes were repeated particularly forcefully in a March 1984 editorial in *Pravda*.[74] Although Moscow will not elaborate on these countermeasures, it seems to believe that "In the future space will become the principal

theatre of military operations," if for no other reason than because the United States, allegedly, will force the issue.[76]

The Soviets claim that they wish to resolve this issue peacefully, for the good of all mankind, and maintain that they have supported the demilitarization of outer space since 1958. As proof of this, Moscow exaggerates the role it has played in the adoption of The 1967 Outer Space Treaty and other international agreements that have limited, partially, the military use of outer space. The Soviets did not, however, become particularly interested in this issue until 1981, following the first flight of the US space shuttle. Since then, the USSR has launched major diplomatic initiatives against the US military space program by proposing multilateral treaties at the 36th (August 1981) and 38th (August 1983) sessions of the United Nations General Assembly.

The 1981 Soviet draft "Treaty Banning the Deployment of Any Weapons in Outer Space"[76] requires in Section I, Article I, that:

The member states undertake not to put into orbit around the earth objects with weapons of any kind, not to install such weapons on celestial bodies, and not to deploy such weapons in outer space in any other way, including also on piloted space vessels of multiple use [read: US shuttle]....

It also states, in Article III, that,

Each member state shall be bound not to destroy, damage, or disturb the normal functioning and not to alter the flight trajectory of space vehicles of other member states where the latter have, for their part, been put into orbit in strict accordance with Section I, Article I of the present treaty.

Article III, therefore, actually would permit the attack of space objects that are armed (i.e., those not in accordance with Section I, Article I of the treaty). This would create a "right" to attack satellites that goes beyond the internationally excepted definition of self-defense and that is certainly contrary to practice on earth.[77]

Perhaps to improve on their 1981 proposal, the USSR submitted a "Draft treaty on Banning the Use of Force in Space and From Space with Respect to the Earth" in August 1983.[78] This draft did call for the peaceful resolution of any dispute arising in connection with the operation of the treaty and also expanded the number of prohibited activities in outer space to include: "The use of force or the threat of its use in space, in the atmosphere, and on earth" through the utilization of space objects that are "orbiting the earth, stationed on celestial bodies, or deployed in space in any other manner." It also prohibits any military, including ASAT, use of manned spacecraft (again, meaning the US space shuttle). Along with this proposal, then CPSU General Secretary Andropov declared a "unilateral moratorium" on the launching of any type of ASAT system for as long as other states, including the United States, do likewise.[79]

Both proposed treaties, as well as other Soviet propaganda statements, also have expressed concern for the protection of national technical means of verification. However, only the Soviet Union has an operational ASAT weapon capable of destroying space-based systems (which they have never admitted possessing). Thus, Andropov's pledge concerning a unilateral ASAT moratorium is meaningless, for the Soviets can continue to test them, disguised as scientific research satellites, regardless of any treaty. On the other hand, since Moscow considers the US space shuttle a potential ASAT, it can always claim that shuttle launches violate the moratorium.[80] The Soviets also have called for the dismantling of all current ASAT systems, but, again, since the USSR denies that it possesses them, it has nothing to dismantle. The Soviet ASAT moratorium maneuver, in fact, may actually be aimed primarily at technological elements and both Soviet draft treaties concentrate heavily on space-based technology (both the operational Soviet ASAT and the developing US ASAT are ground-based).

These Soviet treaties are also questionable in that both place restrictions on the US space shuttle, which will be the primary US space launch vehicle (SLV) in the future, but place no restrictions on expendable SLVs, which the USSR will continue to rely on for years to come (partly because they currently trail the United States in shuttle-related technology). Moreover, the 1983 Soviet draft treaty expressly forbids any military use of the shuttle, which includes the launch and recovery of any US military satellite. In spite of the above-mentioned difficulties, it is possible to *infer* that the Soviets possess military space systems since they have: 1) offered to negotiate about space weapons; 2) threatened to deploy countermeasures against US space systems; 3) pledged not to launch ASAT weapons during their moratorium; and 4) mentioned, occasionally, the sanctity of space reconnaissance for treaty compliance verification. Inferences, however, are weak negotiating points, especially when negotiating with the Soviet Union, which adheres to the dictum "what's ours is ours, what's yours is negotiable."

Soviet propaganda attacks and diplomacy regarding US military space programs are designed to portray the United States as a threat to international peace and security, to belittle the impact of US space accomplishments, and to deflect attention from the overwhelmingly military character of the Soviet space program. They also indicate a continuing Soviet respect for US scientific and technological capabilities. Furthermore, it is obvious that the Soviet leadership is fully aware of the military significance of outer space and recognizes that a technological breakthrough in outer space could decisively tilt the "correlation of forces" in the world, at least temporarily. For this reason, Moscow will do everything possible to hinder or prohibit US military space programs

while refusing to accept restrictions on its own military space capabilities.

6. Conclusions

This examination of general Soviet military doctrine, of Soviet statements regarding the military use of outer space, of the organization and control of the Soviet space program, and of Soviet propaganda and diplomacy regarding space, leads one to conclude that a definition of Soviet military space doctrine would read as follows:

Soviet Military Space Doctrine—the Soviet Armed Forces shall be provided with all resources necessary to attain and maintain military superiority in outer space sufficient both to deny the use of outer space to other states and to assure maximum space-based military support for Soviet offensive and defensive combat operations on land, at sea, in air, and in outer space.

This version of Soviet military space doctrine satisfies the necessity of being compatible with, as well as subordinate to, general Soviet military doctrine. It has a political and military-technical thrust; it emphasizes the primacy of the offensive application of superior military force to achieve Soviet objectives; and it recognizes the combined arms approach to combat operations. Furthermore, this version places no limits on either the scope or depth of Soviet combat operations and is unequivocal concerning the requirements for allocating resources to the military effort.

This proposed Soviet military space doctrine also is essentially consistent with Soviet views on the military use of space, once the propaganda factors are filtered out of Soviet statements. Soviet comments prior to the 1967 Outer Space Treaty clearly recognized the utility of space-based military capabilities. More importantly, however, these statements openly insisted on a Soviet effort to exploit space-based military capabilities, though, allegedly, only for defensive purposes. With the signing of the Outer Space Treaty, however, Soviet statements paid less attention to the military use of space while continuing to attack US space programs and explicitly dropped references to the Soviet military space program. This change in Soviet propaganda is highly significant. For instance, there might be some cause for speculation about Soviet intentions if Soviet statements continued to discuss Soviet programs for the defensive use of space-based military capabilities and military support functions such as reconnaissance and surveillance. It might be possible to argue, then, that the USSR was only "reacting" defensively to US initiatives in space. But the current Soviet stance, refusing to admit the existence of any military element in their space program, can only mean that the Soviet leadership, rather than merely counteracting US moves, is actually seeking military superiority in outer space for offensive, as well as defensive, purposes.

The version of Soviet military space doctrine offered above also aligns closely with Soviet propaganda and diplomacy regarding US military space programs. Most significantly, it corresponds decisively with the actual deployment and development of the USSR's military space capabilities, for an understanding of Soviet military space doctrine is much more dependent on what the Soviets do in space rather than what they say about space. The USSR has a vast, continually expanding military space program, capable of performing most, if not all, of the military support functions of the US space program, as well as additional space weapons that are beyond current US capabilities (the operational Soviet ASAT program, for instance). These Soviet military space capabilities emphasize the certainty of the existence of a Soviet military space doctrine and clarify its status within general Soviet military doctrine. Because the latter insists on the attainment of Soviet military superiority in terrestrial forces, it would be illogical to expect the Kremlin to strive for anything less in outer space, especially considering the military significance of this environment.

The final issue, concerning the relative importance of the two basic functions of space-based military assets—support for terrestrial operations versus actual capabilities for waging war in outer space—can be resolved by stressing the mutual dependence of the functions. For the immediate present, of course, military support functions are more important, but, as the capability of conducting warfare in space becomes less technologically constrained, this function will increase in importance. In addition, the overwhelming majority of military objectives are located on the earth's surface and will continue to be for far into the future. In any case, the ability to provide space-based military support for terrestrial combat operations requires freedom to operate in, if not outright dominance of, outer space. Moreover, Soviet military doctrine fully recognizes the decisive need to disrupt, if not destroy, enemy command, control, and communications assets. Outer space is becoming more and more vital, if not essential, to military forces in this respect and therefore the Soviet leadership can be expected to pursue both functions with equal vigor, for the ability to conduct warfare in space and to provide space-based support for combat operations on earth are both dependent on the attainment and maintenance of military superiority in outer space.

NOTES

[1]Details on the largely military nature of the Soviet space program can be found in the following: Curtis Peebles, *Battle for Space*. New York: Beaufort Books Inc., 1983; US Congress, Senate. Committee on Commerce, Science, and Transportation. *Soviet Space Programs: 1976-80*, Part I, 97th Congress, 2d session, December 1982; US Congress, Senate. Committee on Aeronautical and Space Sciences. *Soviet Space Programs, 1971-75*, Volume I and Volume II, 94th Congress, 2d session, 30 August 1976; Michael Cassutt. "The Military Salyuts," in *Spaceworld*, vol. P-4-184, April 1979, pp. 18-25; Gerald L. Borrowman. "Soviet Military Activities in Space," in *Journal of the British Interplanetary Society*, vol. 35, 1982, pp. 86-92; and US Department of Defense. *Soviet Military Power*; First edition (September 1981), Second Edition (March 1983), and Third Edition (April 1984).

[2]MSU V.D. Sokolovskiy. *Military Strategy* (published in English as *Soviet Military Strategy*). Edited by Harriet Fast Scott. New York: Crane, Russak & Company, Inc., 1975, p. 38.

[3]Ibid.

[4]General Colonel A.I. Radziyevskiy, senior editor. *Dictionary of Basic Military Terms*. Moscow: Voyenizdat, 1965, (English edition published under the auspices of the US Air Force, Soviet Military Thought series, No. 9) p. 37.

[5]*Soviet Military Encyclopedia (Sovetskaya Voyennaya Entsiklopediya)* (hereinafter referred to as SME). Moscow: Voyenizdat, 1977, vol. 3, p. 225.

[6]Ibid., pp. 225-229.

[7]Ibid., p. 229; The description of military doctrine in the 1983 Soviet publication *Military Encyclopedic Dictionary* (MED) (see p. 240) corresponds closely with the SME version. The sole notable difference concerns the tone of Soviet remarks regarding US military doctrine, which are considerably harsher than those found in the SME. For instance, US military doctrine is described in the MED as anti-Soviet and antidemocratic in nature and committed to achieving military superiority over the USSR.

[8]Sokolovskiy, p. 40.

[9]SME, 1977, vol. 3, p. 229.

[10]Sokolovskiy, pp. 455-458.

[11]Ibid., pp. 285, 454.

[12]Ibid., pp. 84, 190, 409-411.

[13]Ibid., pp. 381, 463.

[14]Ibid., pp. 89, 454, 458.

[15]Ibid., p. 205.

[16]Radziyevskiy, p. 109.

[17]Ibid., p. 177.

[18]Ibid., p. 178.

[19]Ibid., pp. 46, 61.

[20]Ibid., pp. 47, 206-207.

[21]US Arms Control and Disarmament Agency. *Arms Control and Disarmament Agreements*, 1982 edition, Washington, D.C., p. 49.

[22]Sokolovskiy, pp. 84, 409-411.

[23]Ibid., p. 251; this statement was added to the second edition.

[24]SME, 1978, vol. 6, pp. 594-595.

[25]SME, 1977, vol. 4, p. 380.

[26]Ibid.

[27]Ibid., pp. 388-389.

[28]SME, 1976, vol. 2, p. 620.

[29]SME, 1979, vol. 7, p. 316.

[30]Ibid., p. 509.

[31]SME, 1976, vol. 2, p. 290.

[32]SME, 1976, vol. 1, pp. 37-39.

[33]SME, 1977, vol. 3, pp. 216-217.

[34]Ibid., pp. 601-605.

[35]SME, 1977, vol. 4, pp. 380-381.

[36]Ibid., p. 382.

[37]Ibid., pp. 382-387.

[38]Ibid., pp. 390-391.

[39]Ibid., pp. 394-400.

[40]Ibid., pp. 402-403.

[41]SME, 1978, vol. 5, pp. 260-261.

[42]SME, 1978, vol. 6, pp. 86-87.

[43]Ibid., p. 87.

[44]SME, 1979, vol. 7, pp. 219-221, 460-461.

[45]SME, 1980, vol. 8, p. 95.

[46]SME, 1977, vol. 4, pp. 559-561; and SME, 1978, vol. 5, p. 38.

[47]*Military Encyclopedic Dictionary (Voyennyy Entsiklopedicheskiy Slovar')* (hereinafter referred to as MED). Moscow: Voyenizdat, 1983, pp. 1-3.

[48]Ibid., p. 148.

[49]Ibid., pp. 364, 366.

[50]Ibid., p. 364.

[51]Ibid.

[52]Ibid., p. 702.

[53]Ibid., p. 238.

[54]Ibid., pp. 298-299.

[55]Ibid., p. 364.

[56]Ibid., p. 366.

[57]Ibid., p. 518.

[58]Ibid., p. 12; and SME, vol. 1, pp. 24-25.

[59]MED, pp. 341-342.

[60]Ibid., p. 813.

[61]Ibid., p. 365.

[62]Ibid., pp. 364-365.

[63]*Soviet Space Programs: 1976-80*, Part I, p. 311; and *Soviet Military Power*, 2d edition, p. 66.

[64]*Soviet Military Power*, 2d Edition, p. 66; and *Soviet Space Programs: 1976-80*, Part I, pp. 309-312, 316-318.

[65]*Soviet Military Power*, 2d Edition, p. 66; and US Central Intelligence Agency. *Directory of Soviet Officials: National Organizations*, CR83-13841, August 1983, p. 105.

[66]*Soviet Space Programs: 1976-80*, Part I, pp. 314-315, 320-322.

[67]*Soviet Military Power*, 2d Edition, p. 66; and Harriet Fast Scott and William F. Scott. *The Armed Forces of the USSR*. Boulder, Colorado: Westview Press, Inc., 1979, pp. 159, 161.

[68]US Central Intelligence Agency. *Directory of USSR Ministry of Defense and Armed Forces Officials*. CR 83-13274, August 1983, p. 11.

[69]*Soviet Space Programs: 1976-80*, Part I, pp. 41-51.

[70]MSU D.F. Ustinov. *To Avert the Threat of Nuclear War*. Moscow: Novosti Press Agency Publishing House, 1982, pp. 5, 15.

[71]"Service to the Motherland (on the Occasion of the 75th Birthday of the Member of the Politburo of the CPSU Central Committee, USSR Minister of Defense, MSU D.F. Ustinov)," *Voyenno-istoricheskiy zhurnal* (Military Historical Journal), no. 10, October 1983, pp. 7-8.

[72]Quoted in James E. Oberg. "Andropov's Orbiting Bombs." *Reason*, December, 1983, p. 21.

[73]V. Avduyevskiy. "Outer Space Must be Peaceful." *Kommunist*, no. 15, October 1983, p. 117.

[74]"A Massive Provocation Against Peace." *Pravda*, 23 March 1984, p. 5.

[75]L. Tkachev. "Militarist Ambitions

of the USA." *Aviyatziya i kosmonavtika* (Aviation and Cosmonautics), no. 11, November 1983, p. 43.

[76]Moscow TASS International Service, 1525 GMT 11 August 1981, in *Foreign Broadcast Information Service.* Daily Report, Soviet Union, vol. III, no. 155, 12 August 1981, pp. AA16-AA18.

[77]Colin S. Gray. "Space is not a Sanctuary." *Survival,* vol. XXV, no. 5, September/October 1983, pp. 203-4 (n. 2).

[78]Draft Treaty on Banning the Use of Force in Space and from Space with Respect to the Earth." *Pravda,* 22 August 1983, p. 4.

[79]"Reception of America Senators by Yu. V. Andropov." *Pravda,* 18 August 1983, p. 1.

[80]Excellent analyses of these issues can be found in Oberg. "Andropov's Orbiting Bombs," pp. 20-25; and in James E. Oberg. "The Space Shuttle and Soviet Propaganda." *National Review* vol. XXXIII, no. 14, 24 July 1981, pp. 828-830.