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# MISSILES, ROCKETS AND SATELLITES

VOLUME I  
U. S. S. R.

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1958





## FOREWORD

This bibliographic survey has been made at the request of the Office, Chief of Research and Development, Department of the Army. It covers the period 1957 through March 1958 and includes almost 1,500 unclassified titles, partly abstracted and annotated, and selected from periodicals, books, and studies.

Recognizing the tremendous growth and complexity of the subject, since the time when the Army Library published its Special Bibliography No. 4 GUIDED MISSILES, 20 April 1956, and Special Bibliography No. 11, GUIDED MISSILES, ROCKETS, AND ARTIFICIAL SATELLITES, 23 January 1957, the current study is presented in the following five volumes:

- Vol. I. USSR
- Vol. II. United States
- Vol. III. Great Britain, France, and Other Free Countries of the World
- Vol. IV. Technology: Means and Methods
- Vol. V. Earth Satellites and Space Exploration

Each of the five volumes is presented under separate cover in order to emphasize each of the five subjects covered, and also to simplify the task of the user in locating the required information. For instance, Volume I—USSR, treats the subject as an entity bringing together most of the available unclassified materials on the activities in that country, be it Soviet missile diplomacy, missile programs, or Sputniks. Likewise, in Volume II—United States, the user will find a coverage of everything from national policies on missiles through the launchings of Vanguard and Explorer.

The materials are arranged in alphabetical order by title within major and subordinate subject groups. Titles concerning specific missiles and rockets are grouped together so that the user desiring all kinds of information on one missile type could find it in one place.

Technical difficulties prevented the researchers from including articles from many worthy publications, and their exclusion should be considered only in this light. Because a monumental quantity of material has been published on the subject, arbitrary decisions had to be made for the sake of utility, as well as to comply with the current needs and requirements of the using agencies of the Defense Establishment.

A small number of the titles have been included which are not in the holdings of the Army Library. The following symbols were used to precede such titles in order to indicate their location:

- x Not available at time of listing.
- y Armed Services Technical Information Agency (Library of Congress). Reports in this collection are available only to those certified for ASTIA services.





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No. 70-5-1 }

HEADQUARTERS,  
DEPARTMENT OF THE ARMY  
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**MISSILES, ROCKETS, AND SATELLITES**  
**VOLUME I—U. S. S. R.**

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## MISSILES, ROCKETS AND SATELLITES

### A. SOVIET MISSILE DIPLOMACY

AIR FORCE CHIEF STRESSES SOVIET RETALIATORY POWER, in *Current Digest of the Soviet Press*, v. 9, No. 36 (16 Oct 1957) 6-8.

Commander-in-chief of the USSR Air Force, Air Marshal K. A. Vershinin answers questions of Pravda correspondent (text published in Pravda September 8). The question and the answers are reflective of the new Soviet missile-diplomacy.

COUNTDOWN FOR TOMORROW, by Martin Caidin. New York, Dutton, 1958. 288 p.

The inside story of earth satellites, rockets and missiles and the race between American and Soviet science, and the military and political implications. With chapters on: SPUTNIK diplomacy as practiced by Soviet officials since SPUTNIK I; the hopes and failures of the PROJECT VANGUARD; Soviet plans for the conquest of space and airpower and the ICBM. Photos.

JAPANESE EDITOR'S INTERVIEW WITH KHRUSHCHEV, in *Current Digest of the Soviet Press*, v. 9, No. 26 (7 Apr 1957) 3-7 plus.

N. S. Khrushchev's interview with Mr. Tomoo Hirooka, Editor in Chief of Japanese Newspaper Asahi Shimbun, 18 June 1957. (Text published in Pravda June 30). In the course of the interview Mr. Khrushchev made reference to Soviet Union's position during the 1956 conflict between Egypt and Great Britain, France, and Israel: ". . . We pointed then to the position in which Britain and France would find themselves in the event of an attack by other countries which possess modern weapons. It was pointed out that it is not necessary to send one's navy or troops to some country or other, that it is possible to act from afar, by using rockets for instance . . ."

KHRUSHCHEV: WE HAVE ALREADY WON OVER YOU; INTERVIEW, by N. Khrushchev, in *U. S. News and World Report*, v. 43 (6 Dec 1957) 98-100.

MAN OF THE YEAR, in *Time*, v. 71, No. 1 (6 Jan 1958) 16-20.

Portrait of Nikita Khrushchev, and how he exploits Russia's SPUTNIKS and rockets for missile-diplomacy.

MESSAGE FROM CHAIRMAN OF U.S.S.R. COUNCIL OF MINISTERS N. A. BULGANIN TO FEDERAL CHANCELLOR K. ADE-NAUER OF THE FEDERAL GERMAN REPUBLIC, in *Current Digest of the Soviet Press*, v. 9, No. 51 (29 Jan 1958) 20-21.

Using the occasion to promote the new Soviet missile-diplomacy Mr. Bulganin stated in his message: "It should be frankly stated that the conversion of the F.G.R. into a bridgehead for American rocket weapons and the Bundeswehr's acceptance of atomic weapons, as planned by the military leaders of NATO, will certainly not make the F.G.R. less vulnerable, and instead will only increase the danger of an atomic war on its territory." Text published in Pravda and Izvestia December 12.

MESSAGE FROM CHAIRMAN OF U.S.S.R. COUNCIL OF MINISTERS N. A. BULGANIN TO UNITED STATES PRESIDENT DWIGHT D. EISENHOWER, in *Current Digest of the Soviet Press*, v. 9, No. 50 (22 Jan 1958) 19-21.

Mr. Bulganin airs his views on the reasons behind the "crucial moment" that "has arrived in the development of the international situation." Among the many reasons: that the United States is going to share its rocket weapons with NATO members states and station them on their territories. Text published in Pravda and Izvestia December 12. Delivered by Ambassador G. Zarubin to U.S. Dept. of State on December 10.

THE NEW SOVIET STRATEGY, by Isaac Deutscher, in *Reporter*, (3 Oct 1957) 10-12.

There are some outward signs of an official recognition by the Soviet military leadership of the supremacy of aviation over all other armed forces. Reviewed are the influences that produced this recognition as well as the role of missiles within the new Soviet strategy.

[SPUTNIK I], in "GUIDED MISSILES." Long Island City, N. Y. Federal Procurement Publications, Inc., 1957. p. 430-431.

Day-by-day highlights of the launching of SPUTNIK I covering the period 5 October 1957 when the Soviet Union announced that it had successfully launched a man-made earth satellite—through 13 October 1957, when Khrushchev played the earth satellite for all it was

worth—militarily, politically, and psychologically—threatening intervention in the Syrian-Turkish crisis. Includes description of SPUTNIK I.

## B. SPACE FLIGHT

THE ACID TEST, by Wernher von Braun, in *Signal*, v. 12, No. 7 (Mar 1958) 5-6 plus.

Includes a current estimate of the Soviet understanding of the significance of man's "imminent conquest of space" and what they are doing about it.

AFTER THE SPUTNIKS: NEXT STOP—THE MOON! by Kenneth W. Gatland, in *Royal Air Force Flying Review*, v. 13, No. 4 (Dec 1957) 20-22.

Discusses Sputniks I and II and what the requirements are for reaching the moon.

THE BATTLE FOR OUTER SPACE, in *Business Week* (9 Nov 1957) 30.

So far, the Russians are far ahead of the West; their SPUTNIK II was even more impressive than their first; but even their rocket-to-the-moon project leaves questions.

x A CASEBOOK ON SOVIET ASTRONAUTICS, by F. J. Krieger. Santa Monica, Calif., Rand Corporation, 21 June 1956. 244 p. (RM-1760.)

"In this working paper prepared by a staff member of the RAND Corporation an attempt is made to judge the extent of Soviet scientific and popular interest in astronautics as it may be determined from Russian writings on the subject. The historical, scientific, and technical aspects of rocketry are dealt with in a four-part bibliography containing books by and about early Russian proponents of astronautics, books of a popular science nature, monographic works, and periodical articles. By far the larger part of this casebook is taken up by translations from the Russian of articles (mostly 1954, 1955) selected from a variety of periodicals which interpret the problems of cosmic flight and the possible uses to which this mastery may be applied. The majority of the references supplied are for 1950-1955."

A CASEBOOK ON SOVIET ASTRONAUTICS, PART II, by F. T. Krieger. Santa Monica, Calif., Rand Corporation, 1957. 203 p. (RM-1922.)

"The present study, which is a continuation of RM-1760, shows that Soviet interest in astronautics is not merely academic or superficial, but is as serious and purposeful as interest can be in a subject that is sponsored to the hilt by a totalitarian regime. The format of the study is in two principal sections: the first is a two-part bibliography of Russian books and periodicals dealing with various aspects of rocketry and astronautics; the second is a series of complete translations from the Russian of articles and papers by various authorities which show the singleness of purpose in the Russian space flight program."

x FROM MAN-MADE SATELLITES TO VOYAGES TO THE MOON [SUMMARY OF AN ARTICLE BY PROFESSOR V. DOBRONRAVOV PUBLISHED IN THE NEWSPAPER PROMYSHLENNO-EKONOMICHESKAYA GAZETA, OCT 20, 1957], in *Soviet News*, (28 Oct 1957) 60.

INVESTIGATIONS OF THE COMPOSITION OF THE UPPER ATMOSPHERE USING ROCKETS. Raketnye issledovaniia sostava atmosfery na bol'shikh vysotakh, by B. A. Mirtov, in *Uspekhi Fizicheskikh Nauk*, v. 43, No. 16 (Sept 1957) 181-196. In Russian.

MISSILES: FICTION AND FACT; PHOTOGRAPHS, in *New York Times Magazine*, (19 Jan 1958) 10-11.

Photographs from a Russian film that helped inspire the rumors, a futuristic story of the first flight to the moon. Also photos of American missile research and production.

PHOTONIC PROPULSION DISCUSSED BY REDS, in *Missiles and Rockets*, v. 2 (July 1957) 68.

RED MOON ROCKET ON LAUNCHING PAD? in *Missiles and Rockets*, v. 3, No. 3 (Mar 1958) 37.

States that the Russians already have tried—unsuccessfully—to reach the moon and that "they will get a moon rocket under way before the United States."

RED ROCKETS FOR VENUS, in *Missiles and Rockets*, v. 2 (Aug 1957) 57.

REPORT SHOWS SOVIET INTEREST IN SPACE, in *Aviation Week*, v. 66, No. 4 (28 Jan 1957) 60-63 plus.



A recently issued Rand Corporation research memorandum "Casebook on Soviet Astronautics," reviews available literature and contains complete translations of 18 papers.

**SOME PROBLEMS OF DYNAMICS OF THE FLIGHT TO THE MOON.** Nekotorye voprosy dinamiki poleta k lune, by V. A. Egorov, in *Doklady Akademii Nauk SSSR*, No. 113 (1 Mar 1957) 46-49. In Russian.

Discussion of dynamics of the flight to the moon, including such problems as the necessary speed, trajectory shape, orbit around the moon, and landing on the moon. An abstract of this paper in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 73-117.

**SOME PROBLEMS OF DYNAMICS OF FLIGHT TO THE MOON.** O nekotorykh zadachakh dinamiki poleta k lune, by V. A. Egorov, in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 73-117. In Russian.

Data on work done in 1953-55 concerning the following problems: shape and classification of trajectories; possible trajectories of moon circling with return to Earth; possibilities of periodic circling of the Moon and Earth; the minimum initial speed needed to reach the Moon; evaluation of the different trajectories.

**SOVIET ASTRONAUTICS**, by A. J. Zaeh-ringer, in *Missiles and Rockets*, v. 2 (Feb 1957) 45-46 plus.

**SOVIET CITIES ON THE MOON?** by A. Parry, in *Science Digest*, v. 43 (Feb 1958) 29-35.

**SOVIET MOVIE SHOWS REACH FOR THE MOON**, in *Time*, v. 70 (28 Oct 1957) 24-25.

**REDS PROPOSE FREIGHT ROCKETS**, in *Missiles and Rockets*, v. 2 (June 1957) 40.

**SOVIET SPACE PLANS SPELLED OUT**, in *Missiles and Rockets*, v. 2 (Aug 1957) 54.

**TEN HOURS TO THE MOON**, in *Science News Letter*, v. 72 (11 Nov 1957) 310-311.

A trip to the moon is no longer a dream but a target at which American and Russian scientists are shooting, with good chances of hitting it soon.

**TOWARDS SPACE FLIGHT**, by A. R. Weyl, in *Aeronautics*, v. 38, No. 1 (Mar 1958) 32-35.

"Achievement and competition in the field

of astronautics have greatly intensified over the past three months, and 'space flight' now occupies the attention of many serious minded people." Summarizes the satellite programs of the Soviet Union and the U.S. and notes the interest for space flight projects in both countries.

**WILL REDS BE FIRST TO REACH THE MOON**, by Howard Simons, in *Science Digest*, v. 41, No. 4 (Apr 1957) 93-94.

The Russians are building an atomic-powered engine for an interplanetary missile and believe that both the moon and Mars will be reached within the next five to ten years as a logical step after the launching of the earth satellite.

### C. I. G. Y. PARTICIPATION

'METEO' ROCKET, in *Military Review*, v. 37, No. 10 (Jan 1958) 76.

Description of the METEO rocket which is being used by the Soviets in IGY research in Antarctica to secure information on air temperatures and densities up to an altitude of 56 miles.

x **ON THE WAY INTO THE COSMOS.** Na puti v kosmos, by V. Dobronravov, in *Krylia Rodiny*, (June 1957) 20-22. In Russian.

Discussion of developments for the geophysical year and means of attaining future goals.

**ROCKETS AND ARTIFICIAL EARTH SATELLITES IN UPPER ATMOSPHERE STUDIES.** Rakety i iskusstvennye sputniki zemli v issledovaniyakh verkhnei atmosfery, by E. K. Fedorov and G. A. Skuridin, in *Vestnik Akademii Nauk SSSR*, v. 27, No. 8 (Aug 1957) 37-48. In Russian.

Includes description of the IGY program, with details of equipment and instrumentation used and problems encountered.

[RUSSIA CLAIMS IT WILL LAUNCH EARTH SATELLITE DURING IGY], in *Air Force*, v. 40 (Mar 1957) 20.

**RUSSIA PICKS TOUGHER SATELLITE ORBIT**, in *Aviation Week*, v. 67 (29 July 1957) 31-32.

**RUSSIANS TALK ABOUT ROCKETS AT IGY CONFERENCE**, in *Astronautics*, v. 2, No. 4 (Nov 1957) 85-86.

Details of Soviet research rockets and rocket experiments.

**SOVIETS PREPARE FOR INTERNATIONAL GEOPHYSICAL YEAR**, by Serge L. Levitsky, in *Military Electronics*, v. 2, No. 5 (May 1957) 22-23.

The Soviet program for the IGY and description of the proposed Soviet satellite (reported to be a minimum of 50 pounds, but probably much heavier, possibly 100 pounds).

**THE STUDY OF THE UPPER ATMOSPHERE BY MEANS OF ROCKETS, AT THE ACADEMY OF SCIENCES, U.S.S.R.**, by S. M. Poloskov and B. A. Mirtov, in *British Interplanetary Society, Journal*, v. 16, No. 75 (Apr-June 1957) 95-100. Translation.

Discussion of the Russian program for IGY and a brief description of various testing devices to be employed.

**THE USSR EARTH SATELLITE PROJECT FOR THE INTERNATIONAL GEOPHYSICAL YEAR**. Canada, Defence Research Board, Directorate of Scientific Intelligence, 1956. 14 p. (Report No. 8/56.) (ASTIA No. AD-107628.)

Contents: The International Geophysical Year; Plans for High Altitude Observations by Rockets and Artificial Satellites; The United States Satellite, Project Vanguard; The USSR Satellite Project; Choice of Orbit for the Soviet Satellite; Guidance Problems; Tracking Methods; Instrumentation and Telemetry.

## D. THE MISSILE PROGRAM

### 1. General Aspects

**BEHIND-IRON-CURTAIN ROCKET SHOW**, in *Missiles and Rockets*, v. 2 (Feb 1957) 74-75.

**HOW SERIOUS NOW IS RUSSIA'S THREAT TO THE WEST? EXCERPTS FROM NEWS CONFERENCE, NOVEMBER 5, 1957**, by J. F. Dulles, in *U. S. News and World Report*, v. 43 (15 Nov 1957) 148-149.

**MISSILES ARE ARTILLERY, SOVIET LEADERS SAY**, in *Army*, v. 7, No. 11 (June 1957) 29.

Documented statements of professional Soviet military leaders on missiles.

**THE NEW SOVIET WEAPONS**, by Garrett

Underhill, in *Ordnance*, v. 42, No. 223 (July-Aug 1957) 57-61.

The Reds do not regard guns and shells as "old" or nuclear weapons and missiles as "new" but as mutually complementary elements of a modern defensive and offensive system constantly kept up to date.

**PRESSURE MEASUREMENTS IN THE UPPER ATMOSPHERE**. *Izmerenie davleniia v verkhnei atmosfere*, by V. V. Mikhnevich, in *Uspekhi Fizicheskikh Nauk*, v. 43, No. 16 (Sept 1957) 197-204. In Russian

Analysis of data and description of apparatus used for pressure measurements in the upper atmosphere.

**REDS PUSH PROPELLANT RESEARCH**, in *Missiles and Rockets*, v. 3, No. 1 (Jan 1958) 60.

Soviet propellant research is in high gear and is now feeding the vast missile hardware program. Some data on Soviet research on oxidants, fuels, free radicals, and materials.

**RUSSIANS AHEAD IN MISSILE METALLURGY, IN PRODUCT ENGINEERING? INTERVIEW WITH D. VON LUDWIG**, in *Product Engineering*, v. 28 (11 Nov 1957) 115.

**SOVIET VIEWS ON LIMITED WAR**, by Raymond L. Garthoff, in *Military Review*, v. 37, No. 9 (Dec 1957) 4-12.

A consideration of the probable calculation on limited war in Soviet policy-making as all-out thermonuclear war becomes less and less attractive. Includes a discussion on tactical employment of nuclear weapons. (This article is a chapter in the forthcoming book by the author titled **SOVIET STRATEGY IN THE NUCLEAR AGE**, to be published in early 1957 by Frederick A. Praeger, Inc., New York.)

**WHAT THE RUSSIANS TELL . . . AND WHAT THEY DON'T TELL**, by Albert Parry, in *Missiles and Rockets*, v. 2 (Feb 1957) 70-72.

The Russians rarely deny or confirm our statements concerning their missiles. However, they tell their people mostly about our guided missile work emphasizing that "we mean war only, never peace—and aggressive war, at that, not merely defense."

**WHY SOVIETS PLAN "FIRST BLOW": WHAT MISSILES MEAN IN RED STRAT-**



EGY, in *U. S. News and World Report*, v. 44 (7 Feb 1958) 60-67.

WHY THE RUSSIANS BEAT US, by Walter Lippman, in *Air Force*, v. 40, No. 11 (Nov 1957) 37.

WHY THE SOVIETS SUCCEED, by R. Hotz, in *Aviation Week*, v. 68 (20 Jan 1958) 21.

## 2. Missile Sites and Installations

GUIDED MISSILE BASES [RUSSIAN], in *Military Review*, v. 37 (June 1957) 73.

KAPUSTIN YAR SERVES AS RUSSIA'S CAPE CANAVERAL, by Frank G. McGuire, in *Missiles and Rockets*, v. 3, No. 2 (Feb 1958) 61-62.

Description of Russia's major launching complex at Kapustin Yar, near Stalingrad, from which both SPUTNIK vehicles and ICBMs are launched; and how Air Force radar in Turkey and Iran monitors the launchings at Kapustin Yar.

[RUSSIAN MISSILE BASES, PLANTS AND CENTERS], in *Missiles and Rockets*, v. 2 (Feb 1957) 40-41.

[SOVIET MISSILE AGENCIES AND INSTALLATIONS], in "GUIDED MISSILES." Long Island City, N. Y., Federal Procurement Publications, Inc. 1957. p. 443-444.

Names and locations of 71 missile agencies and installations in the Soviet Union, arranged in alphabetical order.

SOVIET STRENGTH IN THE BALTIC AREA, in *Military Review*, v. 36, No. 2 (Feb 1957) 95-101.

Includes information on Soviet guided missile installations. (Translated and digested from an article by Col. Chabanier in *REVUE de DEFENSE NATIONAL*, France, July 1956).

## 3. Missiles and Rockets of the Armed Forces

ARMED FORCES. Vooruzhennye sily, in *Bol'shaia Sovetskaia Entsiklopediia*, v. 50, 2d ed. Moscow, Gosudarstvennoe Nauchnoe Izdatel'stvo "Bol'shaia Sovetskaia Entsiklopediia," 15 August 1957. p. 417-429. In Russian.

Historical, organization, and administrative description of the Armed Forces of the USSR, brought up to date. The article includes the following statement: "The role of infantry in modern combat, in spite of the appearance

of new powerful means of combat is not diminished. Infantry in coordination with tanks, artillery and aviation, is capable of breaking through enemy defense, destroying personnel and materiel of the enemy, capturing terrain sectors, and holding them securely [and] annihilating the attacking adversary." Elsewhere in the article it is stated that the Armed Forces of the USSR are provided with "close combat," medium range, and long range rockets.

ARMED FORCES OF THE USSR. Vooruzhennye Sily SSSR, in *Ezhegodnik Bol'shoi Sovetskoi Entsiklopedii*. Moscow, Gosudarstvennoe Nauchnoe Izdatel'stvo "Bol'shaia Sovetskaia Entsiklopediia," 1957. p. 45. In Russian.

Brief description of the current state of readiness of the Soviet Armed Forces. States that they are equipped with "various types of atomic and thermonuclear weapons, powerful rocket and rocket-launching weapons of various types, including long-range rockets."

ARMY IN BEING, by Raymond L. Garthoff, in *Army*, v. 8, No. 6 (Jan 1958) 51-56.

Their successes with SPUTNIKS and ICBM's are not enticing the Kremlin to discount land forces. The 175-division Soviet Army in being is armed with modern weapons of all kinds and is emphasizing new tactical concepts, including ground and air mobility. In the Soviet view modern mass armies continue to be the "main element of the armed forces."

DIRECTORY OF GOVERNMENT MISSILE AGENCIES. Long Island City, N. Y., Federal Procurement Publications, 1957. 161 p.

"... who buys what ... where ... when ... how. Addresses, programs, purchasing, R&D, products, materials." A list of foreign missiles and rockets with basic specifications. A special section on the missile development in the Soviet Union.

GUIDED ROCKETS. Upravliaemye rakety, in *Ezhegodnik Bol'shoi Sovetskoi Entsiklopedii*. Moscow, Gosudarstvennoe Izdatel'stvo Bol'shaia Sovetskaia Entsiklopediia," 1957. p. 596-600. In Russian.

This article describes American, French, and British missiles of various types. The state of the art in the Soviet Union is limited to the following statement: "Soviet Armed Forces

now possess rocket and rocket-launching weapons of various types, including long-range rockets, as well as antiaircraft rocket weapons and other means of antiair defense."

**THE HANDBOOK OF ROCKETS AND GUIDED MISSILES**, by Norman J. Bowman, Chicago, Perastadion Press, 1957. 328 p.

Ground launched missiles; air launched missiles; foreign missile progress (including Soviet rocket planes and auxiliary power units); jet engines for missile applications; upper atmosphere research tools; the artificial satellite; and the intercontinental missile. With tabulated data on rockets and guided missiles, drawings of rockets and missiles, and references.

**HOW THE SOVIETS ORGANIZE THEIR AIRPOWER**, by Raymond L. Garthoff, in *Air Force*, v. 41, No. 2 (Feb 1958) 58-60 plus.

The organization; the high command; Air Defense Forces; Long-Range Air Force; Airborne Forces; Naval Air Forces; Frontal Aviation; and Headquarters of the Air Forces. Includes some information on the status of missiles within the Soviet airpower structure. Organizational charts.

**HOW THE SOVIETS RUN THEIR MISSILE PROGRAM**, by Raymond L. Garthoff, in *Air Force*, v. 40, No. 12 (Dec 1957) 53-54.

How the program was organized and how it is being conducted.

**A LOOK AT SOVIET WEAPONS**, in *Army Information Digest*, v. 12, No. 8 (Aug 1957) 2-14.

"The Soviet Army is the only major force in the world today that has a completely new postwar arsenal of weapons, in being, in the hands of trained troops, capable of fighting either a nuclear or nonnuclear war, big or small, in any kind of climate or terrain." This review of Soviet weapons includes some information and photo on new, long-range and highly accurate track-mounted multiple rocket launchers.

**MISSILES OF THE U.S.S.R.**, by Alfred J. Zaehring, in *Ordnance*, v. 42, No. 226, (Jan-Feb 1958) 639-642.

Russian interest in rockets and space flight goes back to 1903, and recent disclosures of satellites and guided missiles show that the Soviets have modern weapons under development and in mass production.

**A NEW LOOK FOR THE SOVIET GROUND FORCES**, by Lt. Col. Irving Heymont, in *Military Review*, v. 36, No. 10 (Jan 1957) 54-62.

Includes photos of the 6-inch rocket launcher (16-round); 9-inch rocket launcher (12-round); and the new 4-round rocket launcher, capable of firing four large diameter rockets, which was first seen in 1954 parades.

**THE NEW-LOOK SOVIET WEAPONS**, in *Army Information Digest*, v. 13, No. 3 (Mar 1958) 24-33.

Includes information and photos on Soviet rockets and missiles.

**NEW SOVIET EQUIPMENT**, in *Armor*, v. 67, No. 1 (Jan-Feb 1958) 32-33.

Photos of: surface-to-surface missiles similar to the CORPORAL; surface-to-surface missiles similar to the HONEST JOHN; and a surface-to-surface missile similar to the REDSTONE.

**SOVIET ARMY WEAPONS ARE MODERN**, by Mark S. Watson, in *Army*, v. 8, No. 6 (Jan 1958) 57-59.

The American observer cannot fail to see that the Soviet Army has weapons and equipment which are fully equal to what we have been developing, and some which are actually superior. Description of some of these weapons, including missiles.

x **SOVIET MISSILES**. Les engins speciaux Sovietiques, by D. Laurent, in *Docaere*, (July 1956) 3-12. In French.

Presentation of data on recent developments in the USSR, covering air-to-air, air-to-surface, surface-to-surface, surface-to-air, and water-to-surface missiles, with details of experimental installation and test centers.

[SOVIET MISSILES], in "GUIDED MISSILES." Long Island City, N. Y., Federal Procurements Publications, Inc., 1957. p. 443-444.

Description of the following Soviet missiles: COMET-1, COMET-2, J-1, J-2, J-3, ME-G, METEO, M-1, M-100-A, POL-1, POL-2, SPUTNIK, T-1, T-2, T-3, T-4, T-4A, T-5, T-6, and T-7A.

**THE SOVIET UNION'S ROCKETS AND TANKS**, in *Interavia*, v. 13, No. 1 (Jan 1958) 45-46.

Basically the new Soviet rocket weapons "can be considered as modernized artillery

whose range, due to the employment of reaction propulsion, has been improved many times and whose mobility in the combat areas has been increased by the use of self-propelled armored mounting serving as both a means of transport and as launching platforms. With photos, charts, and diagrams on Soviet tactical rocket weapons.

**THE SOVIETS CLOSE THE GAP**, by Col. T. C. Mataxis, in *Infantry School Quarterly*, v. 47, No. 1 (Jan 1957) 18-28.

Current Soviet developments in weapons and tactics (including rockets) surpass capabilities originally credited them. Photo of truck-mounted, multiple 8-inch rocket launcher.

**SUBMARINE MISSILES; REDS MOVE AHEAD**, in *Missiles and Rockets*, v. 2 (Feb 1957) 54-55.

**TWO RUSSIAN ROCKETS**, in *Economist*, v. 184 (31 Aug 1957) 661-663.

#### **a. ICBM and IRBM**

**ARMY IN BEING**, by Raymond L. Garthoff, in *Army*, v. 8, No. 6 (Jan 1958) 51-56.

Their successes with SPUTNIKS and ICBM's are not enticing the Kremlin to discount land forces. The 175-division Soviet Army in being is armed with modern weapons of all kinds and is emphasizing new tactical concepts, including ground and air mobility. In the Soviet view modern mass armies continue to be the "main element of the armed forces."

**BEATEN TO ICBM PUNCH? RUSSIANS MADE FIRST FLIGHT TEST**, in *Aviation Week*, v. 66 (20 May 1957) 31.

**BEATING THE ATLAS; RUSSIAN AND AMERICAN INTERCONTINENTAL MISSILE PROGRAMMES**, in *Economist*, v. 184 (31 Aug 1957) 676.

**CHRONOLOGY OF THE MOST IMPORTANT EVENTS IN THE FIELD OF NATURAL SCIENCE AND TECHNOLOGY.** Khronologiya vzhneishikh sobytii v oblasti estestvoznaniia i tekhniki, in *Bol'shaia Sovetskaia Entsiklopediia*, v. 50, 2d ed. Moscow, Gosudarstvennoe Nauchnoe Izdatel'stvo "Bol'shaia Sovetskaia Entsiklopediia," 15 August 1957. p. 717-725. In Russian.

This chronological table includes the following information: the first Soviet atom bomb was tested in 1949; the first Soviet hydrogen

bomb was tested in 1953; the first Soviet ICBM and first earth satellite were launched in 1957.

**FACTS AND FICTION ON THE ICBM; SOVIET ANNOUNCEMENT**, by R. Hotz, in *Aviation Week*, v. 67 (2 Sept 1957) 21.

**MIGHTY RED MISSILE**, in *Life*, v. 43 (9 Sept 1957) 39-42.

"A good guess" with diagrams "on how the Soviet intercontinental rocket works." Also U. S. missiles "on hand and in works."

**MISSILE'S FIRST VICTIM. [RUSSIAN INTERCONTINENTAL MISSILE DROPPED ON THE BULLSEYE OF AMERICAN PUBLIC OPINION]**, in *Economist*, v. 184 (7 Sept 1957) 762.

**A NEW SCIENTIFIC POWER FOR THE WORLD TO RECKON WITH**, in "GUIDED MISSILES." Long Island City, N. Y., Federal Procurement Publications, Inc., 1957. p. 425-429.

The political and military significance of the Soviet announcement on 25 August 1957 of successful testing of an ICBM. The Soviet IRBM and ICBM program; dangers facing U.S. from the Soviet ICBM threat; ten top targets in U.S. that could be reached by ICBM's launched in Russia or Siberia; and conjectural description of the Soviet ICBM (by stages).

**NEWS CONFERENCE, AUGUST 27, 1957**, J. F. Dulles, in *U. S. Department of State Bulletin*, v. 37 (16 Sept 1957) 457-458.

Concerning the significance and meaning of the Soviet announcement about ICBM and the successful testing of the missile.

**[NEWS FROM RUSSIA ABOUT THE INTERCONTINENTAL BALLISTIC MISSILE]**, by A. Bryant, in *Illustrated London News*, v. 231 (7 Sept 1957) 374.

**OFFICIAL U.S. VIEW ON RUSSIAN MISSILE; EXCERPTS FROM NEWS CONFERENCE, AUGUST 27, 1957**, by J. F. Dulles, in *U. S. News and World Report*, v. 43 (6 Sept 1957) 33.

**REAL THREAT OF MOSCOW'S MISSILE**, by H. Schwartz, in *New York Times Magazine*, (15 Sept 1957) 20 plus.

Behind the development of an intercontinental weapon lies the totalitarian regime's

ability to concentrate all resources to one end, regardless of the people's needs.

**RED MISSILE SHAKES PENTAGON**, in *Business Week*, (31 August 1957) 30.

**RUSSIA CONFIRMS ICBM FIRING; CONGRESS DEBATES U.S. PROGRESS**, in *Aviation Week*, v. 67 (2 Sept 1957) 27-28.

**RUSSIA TAKES LEAD IN MISSILES**, in *Business Week*, (12 Oct 1957) 39-41 plus.

**RUSSIAN ROCKET (INTER-CONTINENTAL BALLISTIC MISSILE)**, by C. Falls, in *Illustrated London News*, v. 231 (7 Sept 1957) 381.

**RUSSIANS STUDY ICBM DECEPTION BY FRAGMENTATION OF FINAL STAGE**, in *Missile Engineering*, v. 2, No. 2 (Jan 1958) 48.

Concern in U.S. over the reported Soviet investigation of a technique to penetrate U.S. missile defenses by confusing defending anti-missile defending radars with large numbers of decoy warheads. Problems that face U.S. anti-missile missilemen.

**RUSSIA'S ANSWER TO OUR SAC BASES**, by Anthony Vandyk, in *Missiles and Rockets*, v. 2 (May 1957) 62-63.

Development of IRBM—launching submarines permits USSR to lag behind in ICBM work.

**RUSSIA'S GUIDED MISSILE PROGRAM**, in *Missiles and Rockets*, v. 2 (Feb 1957) 33-41.

Russians are producing missiles in quantity. The stock pile of anti-aircraft missiles and IRBM's should certainly be regarded with respect, while the imminence of the Russian ICBM is a threat of the first magnitude.

**SAENGERS DESCRIBE SOVIET MISSILES**, in *Aviation Week*, v. 67 (16 Sept 1957) 73.

Dr. Irene Bredt-Saenger and her husband, Dr. Eugene Saenger, two German rocket scientists revealed that the USSR has four long-range, surface-to-surface missiles currently in production or development. Two of them have intermediate ranges and the other two are of the intercontinental type.

**SOVIET IRBMS, ICBMS JOLT U.S.**, in *Missiles and Rockets*, v. 2 (Sept 1957) 47.

## E. EARTH SATELLITES

### 1. Miscellaneous Aspects

**BIGGER SPUTNIKS TO BOOST TELEVISION**, in *Missiles and Rockets*, v. 3, No. 1 (Jan 1958) 58 plus.

A Soviet scientist says that the use of an earth satellite to boost the present range of television broadcasts is "wholly realistic."

**DETERMINATION OF THE LIFETIME OF THE ARTIFICIAL EARTH SATELLITE AND STUDY OF THE SECULAR DISTURBANCES OF ITS ORBIT.** Opređenje vremena sushchestvovaniia iskusstvennogo sputnika zemli i issledovanie vekovykh vozmushchenii ego orbity, by D. E. Okhotsimskii and others, in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 35-50. In Russian.

Development of a rapid and accurate method for the determination of the lifetime of a satellite (including the circular and elliptical orbits), study of the secular disturbances of its orbit, and presentation of graphs and tables. The presented results permit also the determination of a law for the variation in time of orbit parameters in the case of any given satellite parameters and for a wide range of orbit parameters. The high-speed electronic computer (BESM) of the USSR Academy of Sciences is used to integrate the equations. Results of the numerical calculation are based on certain assumptions pertaining to the structure of upper atmospheric layers.

**THE EFFECT OF GEOPHYSICAL FACTORS ON THE MOTION OF A SATELLITE.** O vliianii geofizicheskikh faktorov na dvizhenie sputnika, by I. M. Iatsunskii, in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 59-71.

Establishment of a problem pertaining to the specification of coefficients included in the mathematical expression of disturbing forces, based on satellite coordinates.

**INVESTIGATION OF THE SOLID INTERPLANETARY MATTER WITH AID OF ROCKETS AND EARTH SATELLITES.** Issledovanie Tverdoi sostavliaiushchei mezplanetnogo veshchestva s pomoshch'iu raket i iskusstvennykh sputnikov zemli, by S. M. Poloskov and T. N. Nazarova, in *Uspekhi Fizicheskikh Nauk*, v. 64, No. 16 (Sept 1957) 253-255. In Russian.



LIFE IN SPUTNIK, by P. Isakov, in *Astronautics*, v. 3, No. 2 (Feb 1958) 38-39 plus.

A Russian biologist examines problems involved in keeping a living organism alive in space and reveals Soviet approaches.

MEASUREMENT OF THE CONCENTRATION OF POSITIVE IONS ALONG THE ORBIT OF AN ARTIFICIAL EARTH SATELLITE. Izmerenie kontsentratsii polozhitel'nykh ionov vdol' orbity iskusstvennogo sputnika Zemli, by K. I. Gringauz and M. Kh. Zelikman, in *Uspekhi Fizicheskikh Nauk*, v. 43, No. 16 (Sept 1957) 239-252. In Russian.

ON THE MOTION OF AN ARTIFICIAL SATELLITE IN AN ECCENTRIC GRAVITATIONAL FIELD OF THE EARTH ENCOUNTERING ATMOSPHERIC RESISTANCE. O dvizhenii iskusstvennogo sputnika v netsentral'nom pole tiagotenii zemli pri nalichii soprotivleniia atmosfery, by G. P. Taratynova, in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 51-58. In Russian.

Development of a method using a high-speed electronic computer to calculate the orbit of an artificial earth satellite, taking into account the basic disturbing forces acting on the satellite. Includes development of a method of integration and derivation of the equation of motion of a satellite in the eccentric gravity field.

THE PROBLEM OF MEASUREMENT OF PRESSURE AND DENSITY OF UPPER LAYERS OF ATMOSPHERE USING AN ARTIFICIAL EARTH SATELLITE. Zadacha izmereniia davleniia i plotnosti vysokikh sloev atmosfery s pomoshch'iu iskusstvennogo Sputnika Zemli, by B. S. Danilin and others, in *Uspekhi Fizicheskikh Nauk*, v. 43, No. 16 (Sept 1957) 205-225. In Russian.

Discussion of the role of an artificial satellite in the study of pressure, density, temperature, and composition of the upper atmosphere.

RUSSIAN DOGS PROBE UPPER AIR, in *Missiles and Rockets*, v. 2 (Mar 1957) 31.

RUSSIAN EARTH SATELLITE MAY BE IN THE AIR NOW, in *Science News Letter*, v. 71, No. 20 (18 May 1957) 306.

States that scientists agree on the possibility that Russia has secretly sent a man-made satellite out into space.

SILICON SOLAR BATTERIES AS SOURCES OF ELECTRIC POWER FOR ARTIFICIAL EARTH SATELLITES. Kremni-eyve solnechnye batarei kak istochniki elektricheskogo pitaniia iskusstvennykh sputnikov zemli, by V. S. Vavilov and others, in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 123-129. In Russian.

Sources of power supply for telemetering and research instruments in artificial earth satellites.

SPUTNIK HAS LONG HISTORY, in *Science News Letter*, v. 72 (19 Oct 1957) 245.

x SPUTNIK'S ROCKET CALLED OFFSHOOT OF WORLD WAR II GERMAN V-BOMB, in *Oil Paint and Drug Reporter*, v. 172 (14 Oct 1957) 3 plus.

## 2. Sputniks

### a. General Aspects

COSMIC RAYS STUDIED FROM SPUTNIK II, in *Missiles and Rockets*, v. 3, No. 1 (Jan 1958) 58.

Some data on the subject as stated by a Soviet scientist.

EARTH'S FIRST ARTIFICIAL SATELLITE; SPUTNIK, in *Engineer*, v. 204 (18 Oct 1957) 599.

HOW WE LET THE MISSILE SECRETS GET AWAY, by Peter Van Slingerland, in *Look*, v. 22, No. 3 (4 Feb 1958) 22-23.

"A series of fuzzy directives is to blame for America's costly blunder in letting the Soviet Union get Germany's missile secrets. The Communists did not get all of the basic German research on missiles. But what they got was enough to contribute perhaps to 15 or 20 per cent to the launching of their SPUTNIKS." Relates the story behind the German V-2 rocket arsenal near Nordhausen, Thuringia, first discovered by U.S. Army in 1945, but which was later left to the Soviet occupation forces.

PROGRAMS FOR FUTURE SPUTNIKS DETAILED BY RUSSIAN SCIENTISTS, in *Missile Engineering*, v. 2, No. 2 (Jan 1958) 10-11.

A brief review of statements made by Soviet scientists in various articles on the subject of space exploration by Soviet vehicles.

RED SPUTNIK PLANS AVAILABLE LAST JUNE, by E. Clark, in *Aviation Week*, v. 67 (25 Nov 1957) 30-31.

RUSSIAN SATELLITE TRANSMITS SOME DATA, in *Aviation Week*, v. 67 (14 Oct 1957) 27.

SOVIET SHOWS SATELLITE-A-MONTH CAPABILITY, by E. Clark, in *Aviation Week*, v. 67 (11 Nov 1957) 29-30.

SPUTNIK, in *Science*, v. 126 (18 Oct 1957) 739-740.

SPUTNIK, in *Scientific American*, v. 197 (Nov 1957) 66-67.

SPUTNIK AND VANGUARD: A COMPARISON, by H. H. Koelle, in *Astronautics*, v. 2, No. 5 (Dec 1957) 32-33 plus.

"An educated guess as to what the first Soviet launching vehicle was like, along with analysis of the different approaches used by Russia and this country in constructing their orbital carriers."

SPUTNIK NOT SO SECRET, by Victor P. Petrov, in *Missiles and Rockets*, v. 3, No. 3 (Mar 1958) 82.

A diligent and painstaking study of Soviet periodicals, and especially technical and scientific magazines, could have given us some valuable advance information on the SPUTNIKS. A review of some of the information that was available before the Sputnicks were launched.

SPUTNIK I-II; TEXTS OF SOVIET ANNOUNCEMENTS, OCTOBER 4 AND NOVEMBER 3, 1957, in *Current History*, v. 34 (Jan 1958) 48-50.

SPUTNIK PROVES RUSSIANS HAVE BEST ROCKET ENGINES, FIRST RATE GUIDANCE SYSTEM, in *Product Engineering*, v. 28 (21 Oct 1957) 21.

SPUTNIK II, in *New Republic*, v. 137 (11 Nov 1957) 3-4.

SPUTNIK II MAY BE AN INDICATION SOVIETS HAVE NEW EXOTIC FUEL, in *Oil Paint and Drug Reporter*, v. 172 (11 Nov 1957) 4 plus.

SPUTNIK II DATA, in *Missiles and Rockets*, v. 3, No. 2 (Feb 1958) 166.

Diagram showing the outside factors that influenced the dog "Laika" and body factors which were registered.

x A U. S. MISSILE MAKER LOOKS AT

SPUTNIK, by Donald W. Douglas, in *Exchange*, v. 18 (Nov 1957) 1-5.

WAKE UP CITIZENS! U. S. SATELLITE, AND HOW THE SOVIET WAS ABLE TO USE IT, in *American Mercury*, v. 86 (Jan 1958) 132-133.

#### *b. Descriptive Data*

DETAILS OF SPUTNIK SURPRISE SCIENTISTS, by David A. Anderton, in *Missile Engineering*, v. 2, No. 2 (Jan 1958) 6-8.

The surprising details and the meaning behind the details.

DOG IN SPACE, by Irwin Hersey, in *Astronautics*, v. 2, No. 5 (Dec 1957) 30-31 plus.

Some estimates on the size, shape, and methods, of propulsion used to launch the second SPUTNIK into space.

FIRST SATELLITE RESULTS ARE IN, in *Astronautics*, v. 3, No. 1 (Jan 1958) 50 plus.

Preliminary scientific reports on Soviet satellites indicate that they are bigger than originally estimated.

SOVIET SATELLITE CARRIER ROCKET, by H. Odishaw, in *Science*, v. 126 (27 Dec 1957) 1334.

SOVIET SATELLITE INSTRUMENTATION, by Herbert Friedman, in *Astronautics*, v. 3, No. 2 (Feb 1958) 32-33 plus.

Comparison of Russian and U.S. techniques reveals different approaches to the problem of measuring solar X-ray and ultraviolet radiation.

SPACE FLIGHT NOTES: SOVIET ASTRONAUTICS, by John Gustavson, in *Jet Propulsion*, v. 27, No. 3 (Mar 1957) 313-317.

"... We are able to find in Russia today genuine interest in space flight, a well-developed rocket technology, and competent scientists and engineers. Moon projects have been mentioned from time to time, and Russia also claims to prepare an artificial satellite which may very well precede the VANGUARD. The Russian satellite is believed to be of the same size (20 in. diam.), but heavier than the VANGUARD satellite (100 lb instead of 20 lb). We must not underestimate the potential of Soviet Russia—neither politically nor astronautically."

SPUTNIK FACTS COLLECTED, in *Science News Letter*, v. 72 (7 Dec 1957) 358.

x SPUTNIK [RUSSIAN DEVELOPMENTS; U. S. PROGRAM], in *First National City Bank of New York, Monthly Letter*, (Nov 1957) 124-127.

SPUTNIK II, by H. I. W. Massey, in *The New Scientist*, v. 2, No. 51 (7 Nov 1957) 14-15.

Comments on details of the satellite, its orbit, and why the USSR regards space travel to be of such importance. "Only one matter requires to be thoroughly tested before we can say that a manned journey to the moon is possible. This concerns the danger of being exposed to cosmic rays."

SPUTNIK II THROUGH RUSSIAN EYES, in *Astronautics*, v. 3, No. 1 (Jan 1958) 48-49 plus.

Data on the structure of the satellite and the biological experiments performed.

WHAT'S BEHIND SPUTNIK? SOVIET ADVANCES IN INFORMATION THEORY, in *Electronics Business Edition*, v. 30 (10 Nov 1957) 27.

#### c. Tracking

CAMERA READY TO TRACK SOVIET SATELLITE, by R. Hawkes, in *Aviation Week*, v. 67 (28 Oct 1957) 123 plus.

EYES ON THE SKY, in *Astronautics*, v. 2, No. 5 (Dec 1957) 40-41 plus.

A brief description of the optical and visual tracking program now being used to establish the SPUTNIK orbits, based on a paper by Fred L. Whipple and J. Allen Hynek presented at the IAF Barcelona parley.

THE FIRST DAYS OF SPUTNIK I, by V. C. Reddish and others, in *Spaceflight*, v. 1, No. 6 (Jan 1958) 198-202.

Reports of the tracking work carried on during the days immediately following the launching of Russia's first artificial Earth satellite.

SCIENTIFIC OBSERVATIONS OF THE ARTIFICIAL EARTH SATELLITES AND THEIR ANALYSIS, by H. S. W. Massey and R. L. F. Boyd, in *Nature*, v. 181, No. 4602 (11 Jan 1958) 78-80.

British methods for radio, visual, and radar tracking of Soviet satellites.

SPUTNIKI TRACKED BY MILLSTONE RADAR, in *Missiles and Rockets*, v. 3, No. 1 (Jan. 1958) 154.

Activities and equipment at the Millstone

Hill radar of Lincoln Lab in Westford, Mass., which has been detecting and predicting the two Russian satellites orbits since shortly after their launchings on 4 October and 3 November 1957.

TRACKING THE RED MOONS, by G. R. Whitfield, in *Aeroplane*, v. 94 (7 Feb 1958) 178-179.

Radio observations of the Russian earth satellites at the Mullard Radio Astronomy Observatory, Cambridge.

#### d. Launching

BOTH SIDES OF THE MOON [SUCCESSFUL LAUNCHING OF THE WORLD'S FIRST ARTIFICIAL SATELLITE], in *Economist*, v. 185 (12 Oct 1957) 99-101.

PROBLEMS OF LAUNCHING AN EARTH SATELLITE, by Martin Summerfield, in *Astronautics*, v. 2, No. 4 (Nov 1957) 18-36 plus; v. 2, No. 5 (Dec 1957) 34-37 plus.

The careful examination of the technical considerations inherent in any such project reveals the magnitude of the engineering feat accomplished by the Russians in the successful SPUTNIK launching. This analysis of flight performance, multi-stage techniques and firing programs offers an indication as to design of SPUTNIK I launcher and suggests the vehicle is capable of putting a 50-lb payload on the moon.

RUSSIA'S SECOND SATELLITE, by Kenneth W. Gatland, in *Spaceflight*, v. 1, No. 6 (Jan 1958) 204-205.

An appraisal of the techniques necessary to place half a ton of research equipment in orbital motion round the Earth.

SOME VARIABLE PROBLEMS IN CONNECTION WITH THE LAUNCHING OF AN ARTIFICIAL EARTH SATELLITE. Nekotorye variatsionnye zadachi, svyazannye s zpuskom iskusstvennogo sputnika zemli, by D. E. Okhotsimskii and T. M. Eneev, in *Uspekhi Fizicheskikh Nauk*, v. 63, No. 1a (Sept 1957) 5-32. In Russian.

Study of the problem of launching an artificial earth satellite into its orbit. This is assumed to be possible by means of a rocket accelerator with one or more stages. The investigation is directed toward defining a technique (thrust-variation in time) in order to orient the satellite to its orbit with mini-

mum fuel expenditure. An attempt is made to determine the most effective regime of fuel consumption. The solutions are obtained by means of simplifying assumptions and permit to establish the characteristics of optimal conditions of the launching on the basis of which it is possible to develop the rocket accelerators with minimum initial weight.

SOVIET ROCKET? in *Rocket-Jet Flying*, v. 138 (Fall-Winter 1957) 1.

Sketch of the Soviet three-stage rocket which launched SPUTNIK II.

THE SPACE AGE IS HERE, by Maurice Allward, in *Spaceflight*, v. 1, No. 6 (Jan 1958) 196-197.

A description of the launching of SPUTNIK I and its significance to scientific work in general.

#### *e. Implications and U. S. Reactions*

DETAILS ON SPUTNIK SURPRISE SCIENTISTS, by D. A. Anderton, in *Aviation Week*, v. 67 (21 Oct 1957) 30-31.

IMPACT OF RUSSIAN SATELLITE TO BOOST U. S. RESEARCH EFFORT, in *Missile Engineering*, v. 2, No. 2 (Jan 1958) 8-9.

Washington's reaction to Soviet successes with SPUTNIKS.

INTO SPACE: MAN'S AWESOME ADVENTURE, in *Newsweek*, v. 50 (14 Oct 1957) 37-41.

The launching of SPUTNIK I, its meaning and implications, what the U. S. is planning in earth satellites, SPUTNIK II, and why the U. S. is lagging.

THE MEANING OF "SPUTNIK" by Irwin Hersey, in *Astronautics*, v. 2, No. 4 (Nov 1957) 22-25 plus.

Some comments on the successful launching of the first earth satellite by the Soviets. Implications.

THE MENACE IN THE MIRROR'S IMAGE, by R. Pearson, in *Christian Century*, v. 75 (1 Jan 1958) 10-12.

"Whatever information SPUTNIK I and its successors may give the Russians about the realm of outer space, it is not likely to prove more important than what it tells them about us. Seldom has there been more revealing testimony to the fundamental nature of the

American people than our reactions to the announcement that the Soviet Union had launched its satellite."

MISSILE PROGRAM READIES FOR OVERHAUL, in *Chemical Week*, v. 81 (19 Oct 1957) 31-32.

Two conclusions reached after Russia's SPUTNIK was placed in its orbit: SPUTNIK was not propelled by a high-energy (e.g., boron) fuel; responsibility for development and production of long-range missiles will be centralized, in an attempt to make it easier for participating companies to deal with the Dept. of Defense.

MUCH NEWS WAS BAD NEWS. . . . REACTIONS TO SPUTNIK, in *Air Force*, v. 40, No. 12 (Dec 1957) 35-36 plus.

Sample editorial news throughout the U. S. and in foreign countries.

ON TO THE MOON, in *Scientific American*, v. 197 (Dec 1957) 58-59.

Russia's SPUTNIK II, its "animal passenger" and implications for future developments.

PRESIDENT'S VIEWS ON RUSSIA'S SATELLITE, in *U. S. News and World Report*, v. 43 (18 Oct 1957) 118-120 plus.

No "reason to grow hysterical . . . no additional threat to U. S." The President also said that the satellite does prove that the Russians possess "a very powerful thrust in their rocketry, and that is important."

REDS HOPED THAT MOON WOULD PANIC US, in *Saturday Evening Post*, v. 230 (9 Nov 1957) 10.

THE SHOWCASE WAR by C. Dreker, in *Nation* v. 185 (16 Nov 1957) 335-339.

The effect on U. S. of Soviet orbiting of its SPUTNIK and the advanced state of rocketry in the USSR. What it means as far as preparedness is concerned. "If the best we can hope for, under present conditions is a war of technology and nerves, we must get used to it." Threats associated with technological diplomacy are still of "unlimited magnitude . . . Big threats cost no more than little ones, and make better headlines." Inevitably, when weapons are no longer used, only tested, the time will come when they will no longer be made. "That time is not yet."



SOVIET SATELLITES; U. S. REACTIONS, by W. C. Davidon, in *Bulletin of the Atomic Scientists* v. 13 (Dec 1957) 357-358.

x SPUTNIK AND AMERICAN PUBLIC OPINION: AN ASTONISHING NUMBER OF CITIZENS LOOKED NO FURTHER THAN THEIR OWN POCKETBOOKS WHEN THE FIRST RUSSIAN SATELLITE WENT BY, by Samuel Lubell, in *Columbia University Forum*, v. 1 (Winter 1957) 15-21.

SPUTNIK AND US; WORLD ROUNDUP OF SCIENTIFIC COMMENT, in *Product Engineering*, v. 28 (4 Nov 1957) 23-24.

SPUTNIK MAKES ITS IMPACT ON BUSINESS AND ADVERTISING, in *Printer's Ink*, v. 261 (18 Oct 1957) 1-4.

THE SPUTNIK PEARL HARBOR; EDITORIAL by Peter J. Schenk, in *Air Force*, v. 40, No. 11 (Nov 1957) 34 plus.

SPUTNIK POSES QUESTION, in *Steel*, v. 141 (14 Oct 1957) 68-69.

SPUTNIK II—PRELUDE TO THE MOON? in *Chemical and Engineering News*, v. 35, No. 45 (11 Nov 1957) 27.

Although there is disagreement, most US experts feel Russia has made an engineering breakthrough, but Russia claims a superfuel. "The next big breakthrough is obviously the moon, and it is certainly closer than anyone in the West would have believed a few months ago." Some data on SPUTNIK II and the implications of this dog-bearing satellite.

SPUTNIK; WHAT ARE ITS TECHNICAL IMPLICATIONS? in *Electronic Industries and Tele-Tech*, v. 16 (Nov 1957) 70-74 plus.

WHAT SPACE MEN SAY ABOUT U. S. AND THE SATELLITE, in *U. S. News and World Report*, v. 43 (25 Oct 1957) 45-50.

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