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SCIENTIFIC AND TECHNICAL INTELLIGENCE  
RESEARCH AND PRODUCTION PROGRAM  
FISCAL YEAR 1959

*DM*



CIA/SI 200-58  
1 July 1958

CENTRAL INTELLIGENCE AGENCY  
OFFICE OF SCIENTIFIC INTELLIGENCE

*10 JUL 1958  
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Office of Scientific Intelligence

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OFFICE OF SCIENTIFIC INTELLIGENCE

FOREWORD

The Office of Scientific Intelligence is responsible for establishing and maintaining, on the basis of the national intelligence objectives and other national security requirements, the Agency intelligence research and production program in the field of scientific and technical intelligence. The approved OSI research and production program for FY 59 is presented herein.

The divisional sections are prefaced with a discussion of the specific intelligence responsibilities of the division and an indication of those substantive research areas to receive special emphasis during the fiscal year. The individual research projects are presented in detail with an indication of manhour expenditure during the fiscal year to show relative office effort. Projects are numbered consecutively with a prefixed division indicator. Numbers not appearing in the program are of projects that have been completed or cancelled.

The majority of these research projects are in direct support of the OSI Long Range Intelligence Research Plan derived from the Priority National Intelligence Objectives contained in DCID 1/3 . Other work which is scheduled by this Program includes contributions to NIS's, NIE's, and support of the ELINT collection effort.

All projects are programmed to fill current gaps in our intelligence coverage. They are established on the basis of intelligence needs and not necessarily on the basis of information available. Any project may be reoriented, deferred, or cancelled when such action is warranted. A project may be cancelled for lack of sufficient information only after all feasible avenues of approach have been thoroughly explored.

The Progress Report is used as a mechanism to insure that at stated intervals, varying from three months to one year, an assessment will be made of all projects. The Progress Report summarizes the intelligence research accomplished with an indication of progress to date or reasons for lack of progress. It also may be used as a means of proposing changes

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in the original terms of reference and for recommending deferment or termination.

The content of this Program was reviewed and its adoption recommended at meetings of the OSI Intelligence Board during June 1958.

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1 July 1958

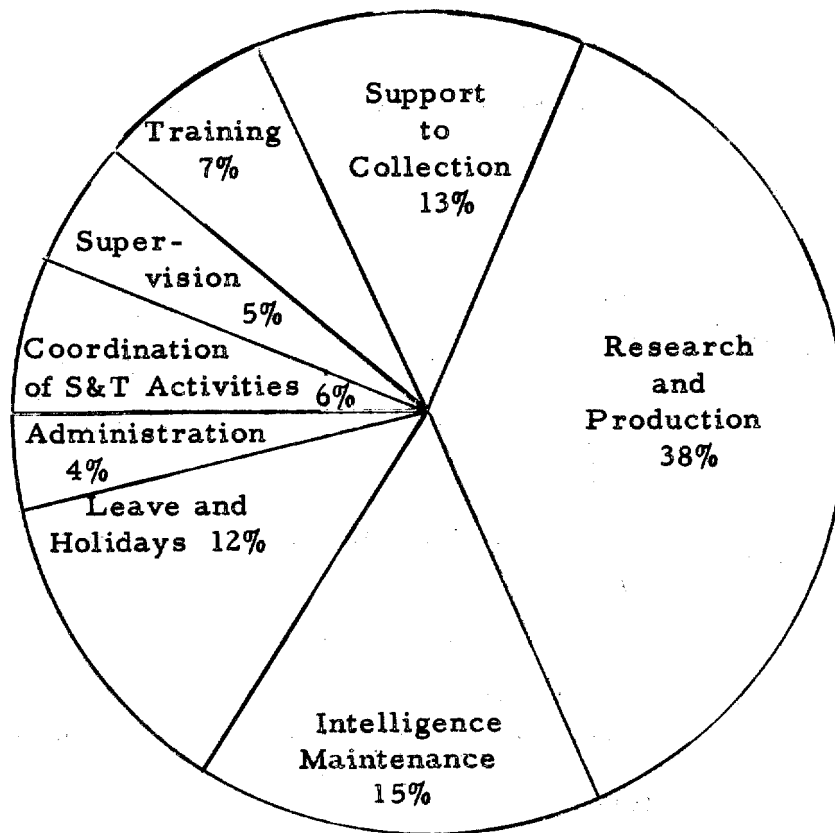


Assistant Director  
Scientific Intelligence

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Estimated Distribution of Total Manhours by Activity



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Fiscal Year 1959

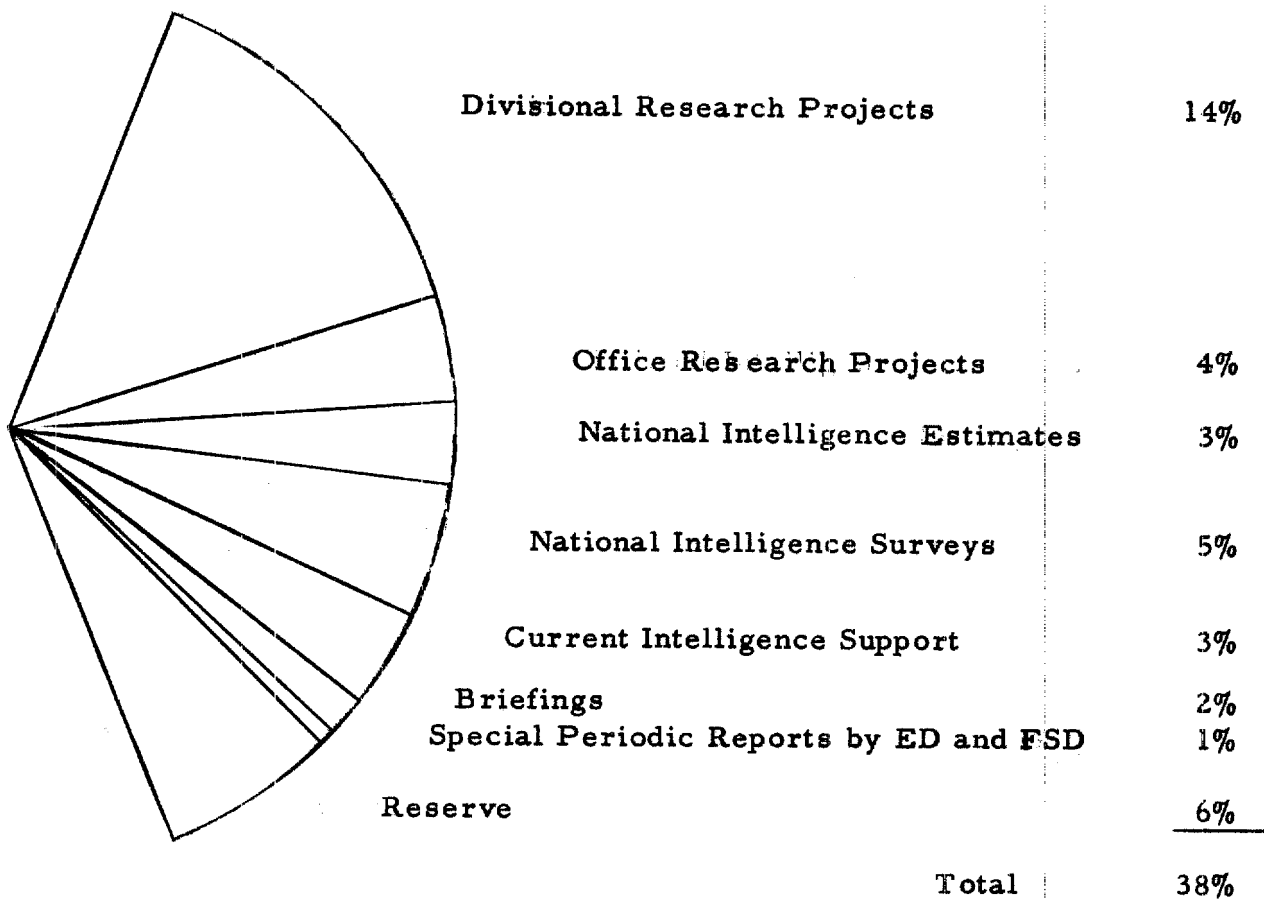
Chart 1

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Estimated Distribution of Manhours  
for Research and Production by Activity



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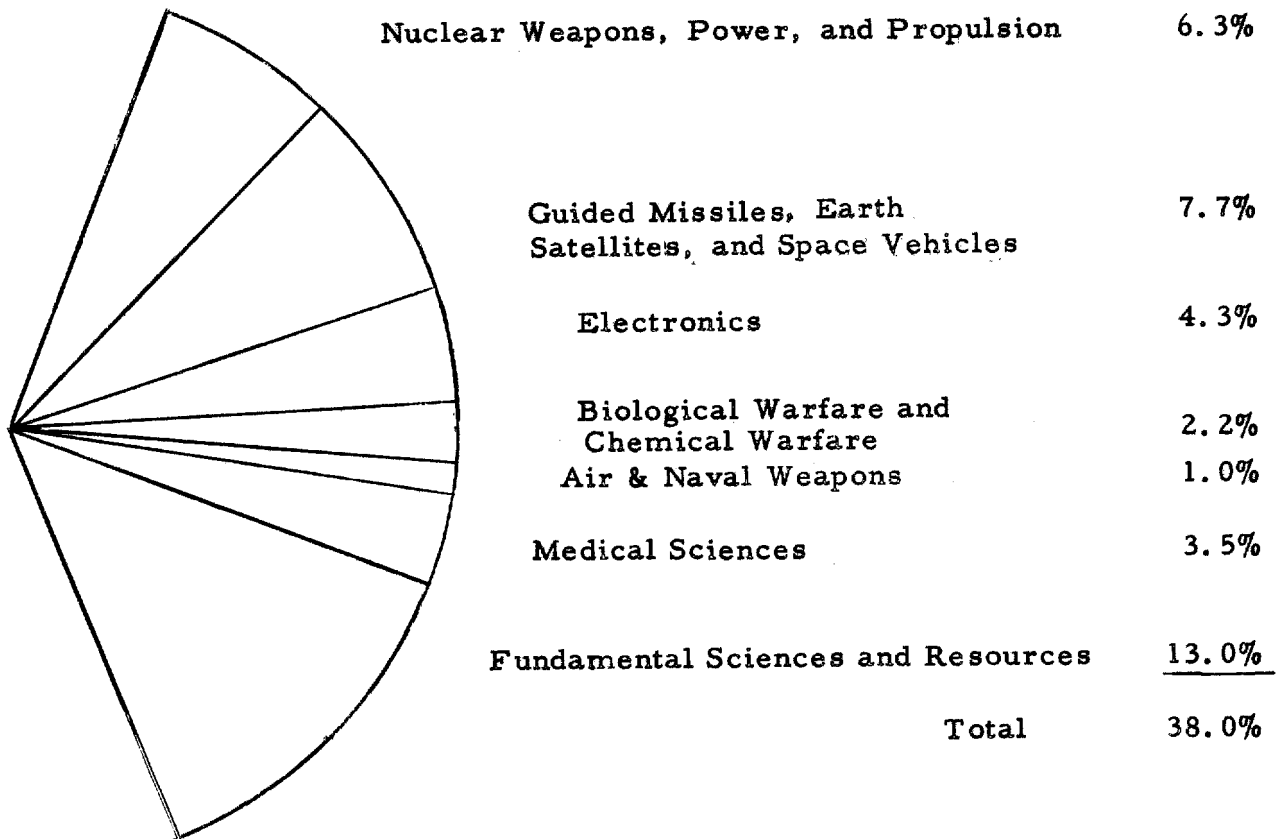
Fiscal Year 1959

Chart 2

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Estimated Distribution of Manhours  
for Research and Production by Subject



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Fiscal Year 1959

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OFFICE PROJECTS

The Office of Scientific Intelligence has selected certain major intelligence problems, that transcend the responsibility of the individual divisions, for coordinated analysis in fiscal year 1959. These problems range from important technical questions, such as the ballistic missile defense system and the missile/nuclear submarine weapons system, to the scientifically important problems of Soviet research in the areas of space technology and cybernetics.

With the exception of the space research project, the office projects described herein will be published as single office position papers, to be up-dated as new information warrants. Because of a great consumer interest in the various sub-sections of the Soviet space research problem, this project will be published as a summary estimate and a series of detailed monographs.

The consumer should appreciate that these are listed as office projects, not only because they are of priority interest, but also because they entail substantial contributions from more than one division. Other projects of equal or even higher priority may be found in the divisional programs.

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Office Projects

<u>Project Designation</u>	<u>Title and Description</u>
0-4	<p><u>Soviet Space Research Program</u> - to be published as a series of monographs each devoted to a separate aspect of space science. These monographs will be individually revised every two years, or as developments warrant. The following monographs are contemplated:</p> <ol style="list-style-type: none"><li>I. <u>Soviet Capabilities in Space Flight, 1959-1974 (Summary Estimate)</u> - primary responsibility, GMD.</li><li>II. <u>Objectives of the Soviet Space Flight Program</u> - primary responsibility, FSD; contributors, as appropriate.</li><li>III. <u>Organization, Planning, and Control of the Soviet Program for Research in Space</u> - primary responsibility, FSD; contributors, all divisions.</li><li>IV. <u>Soviet Space Vehicles</u> - primary responsibility, GMD; contributors, ASD, ED, FSD.<ol style="list-style-type: none"><li>Part 1 - Earth Satellites</li><li>Part 2 - Other Space Vehicles</li></ol></li><li>V. <u>Propulsion Systems</u> - primary responsibility, GMD.<ol style="list-style-type: none"><li>Part 1 - Liquid and Solid Rocket, GMD</li><li>Part 2 - Nuclear, NED</li><li>Part 3 - Other, FSD</li></ol></li><li>VI. <u>Guidance and Control</u> - primary responsibility, GMD; contributors, ED, FSD.</li><li>VII. <u>Telemetry, Communication Research, and Reconnaissance Instrumentation</u> - primary responsibility, ED; contributors, GMD, FSD.</li><li>VIII. <u>Ground Support Facilities</u> - primary responsibility, GMD; contributors, ASD, ED, NED.</li><li>IX. <u>Space Medicine in the USSR</u> - primary responsibility, MD.</li><li>X. <u>Astrobiology</u> - primary responsibility, FSD; contributor, MD.</li><li>XI. <u>Astronomical Aspects of Soviet Space Research, Including Celestial Mechanics</u> - primary responsibility, FSD.</li></ol>

(continued)

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Office Projects

<u>Project Designation</u>	<u>Title and Description</u>
0-4	<p>(continued)</p> <p><u>XII. Gains Resulting from the Soviet Space Flight Program - primary responsibility, FSD; contributors, as appropriate.</u></p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Initial series to be completed during FY 59. The summary estimate, drawing upon material submitted for monographs II through XII, will be issued last; it is scheduled for completion in Jun 59. A revision of the earlier report, <u>Soviet Space Flight Capabilities</u>, CIA/SI 52-58, 24 Apr 58.</p> <p><u>Manhours:</u> NED, 350; GMD, 1900; ED, 650; ASD, 200; MD, 1100; FSD, 2050; Total - 6250.</p>
0-5	<p><u>Soviet Ballistic Missile Defense System - to assess Soviet research and development capabilities and to estimate probable Soviet achievements in the construction of a system for the destruction of hostile ICBM and IRBM warheads.</u></p> <ol style="list-style-type: none"><li>I. Summary Estimate - primary responsibility, ED; to be produced from material developed within the following research areas.</li><li>II. Electronic Systems for Early Warning and Target Acquisition - primary responsibility, ED.</li><li>III. Non-Electronic Systems for Early Warning and Target Acquisition - primary responsibility, FSD.</li><li>IV. The Defensive Missile and Its Guidance - primary responsibility, GMD.</li><li>V. Defensive Missile Warhead and Pertinent High-Altitude Nuclear Effects - primary responsibility, NED.</li></ol> <p>(continued)</p>

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Office Projects

<u>Project Designation</u>	<u>Title and Description</u>
0-5	<p>(continued)</p> <p><u>Remarks:</u> Group project. Project officer to be appointed by Electronics Division. To be initiated 1 Aug 58. Progress report 15 Dec 58. Completion date May 59.</p> <p><u>Manhours:</u> NED, 100; GMD, 800; ED, 1000; FSD, 200; Total - 2100.</p>
0-6	<p><u>Soviet Nuclear Submarine-Guided Missile Weapon Systems - to assess Soviet capabilities and intentions for the development of both nuclear submarines and suitable guided missiles for use as a single weapon system. Further, to summarize all available evidence for the existence of, and to estimate operational availability dates for, (a) nuclear-propelled submarines per se and (b) conventional submarines modified for missile use.</u></p> <ol style="list-style-type: none"><li>I. Summary Estimate - primary responsibility, ASD; to be produced from material developed within the following research areas.</li><li>II. The Submarine - primary responsibility, ASD.<ol style="list-style-type: none"><li>A. Hull Characteristics (including number of missiles that can be carried)</li><li>B. Propulsion Characteristics (radius of action)</li><li>C. Navigation (positioning for firing)</li></ol></li><li>III. The Guided Missile - primary responsibility, GMD.<ol style="list-style-type: none"><li>A. Configuration (cruise or ballistic)</li><li>B. Propulsion System (liquid, solid, air-breathing)</li><li>C. Guidance, Warhead, etc.</li></ol></li><li>IV. The Nuclear Propulsion System - primary responsibility, NED.</li><li>V. System Trials and Training - joint responsibility.<ol style="list-style-type: none"><li>A. Test Firings of the Missile</li><li>B. Sea Trials of Vessel</li><li>C. Total System Testing and Training</li></ol></li></ol> <p>(continued)</p>

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Office Projects

<u>Project Designation</u>	<u>Title and Description</u>
0-6	<p>(continued)</p> <p><u>Remarks:</u> Group project. Project officer to be appointed by ASD. To be initiated 1 Jul 58. Provisional Scientific Intelligence Report due Aug 58. Completion date Jun 59.</p> <p><u>Manhours:</u> NED, 120; GMD, 1000; ASD, 1350; FSD, 50; Total - 2520.</p>
0-7	<p><u>The Soviet Chemical Warfare Program - Offensive and Defensive - to assess CW as a weapons system in the overall military and civilian planning of the USSR including both offensive and defensive aspects; further, to determine the scope and magnitude of the Soviet program with special emphasis on the probable choice of agents, weapons systems, and defensive procedures.</u></p> <p><u>Remarks:</u> Office position summary. Major contributions from Applied Science Division and Medicine Division. Project officer to be appointed by ASD. Terms of reference to be delineated by these two divisions in accordance with existing lines of responsibility. Coordination with FSD. Not dependent upon completion of related divisional projects. To be initiated 1 Jul 58. Completion date May 59.</p> <p><u>Manhours:</u> ASD, 450; MD, 200; Total - 650.</p>
0-8	<p><u>The Soviet Biological Warfare Program - Offensive and Defensive - to assess BW as a weapons system in the overall military and civilian planning of the USSR including offensive and defensive aspects of human, plant, and animal BW; further, to determine the scope and magnitude of the Soviet program with special emphasis on the probable choice of agents, weapons systems, and defensive procedures.</u></p> <p>(continued)</p>

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Office Projects

<u>Project Designation</u>	<u>Title and Description</u>
0-8	<p>(continued)</p> <p><u>Remarks:</u> Office position summary. Contributions from Applied Science Division, Medicine Division and Fundamental Science Division. Project officer to be appointed by ASD. Terms of reference to be delineated by these divisions in accordance with existing lines of responsibility. Not dependent upon completion of related divisional projects. To be initiated 1 Aug 58. Completion date Jun 59.</p> <p><u>Manhours:</u> ASD, 900; MD, 200; FSD, 50; Total - 1150.</p>
0-9	<p><u>Soviet Cybernetics</u> - to assess Soviet cybernetic theory and technology and the application of the feed-back concept to communications and control in electro-mechanical, biological, and psychological systems in such fields as automation, communication theory, psychology, neurophysiology, education, and social processes.</p> <p><u>Remarks:</u> Project officer to be appointed by Electronics Division. Partial implementation by external contract. To be initiated 1 Jul 58. Progress report 15 Dec 58. Completion date May 59.</p> <p><u>Manhours:</u> ED, 300; MD, 200; FSD, 50, Total - 550.</p>

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Division: Nuclear Energy

Intelligence Research and Production Responsibilities

The Nuclear Energy Division maintains cognizance of and produces finished intelligence on foreign nuclear energy activities in support of both military and peaceful programs, including methods and volumes of production of nuclear materials and end-items.

During FY 59, major attention will continued to be given to production and technology of nuclear materials and to production and logistics of nuclear weapons.

In addition, increased emphasis will continue to be placed on three areas of growing importance, nuclear power and propulsion, and nuclear energy activities of countries other than the Soviet Union, as well as Soviet activities in controlled thermonuclear reactions (CTR). Projects on nuclear propulsion will be performed jointly with ASD and GMD, and CTR activities will be coordinated with FSD. NED will also contribute to the propulsion section of the office projects on space research and the nuclear submarine guided missile weapons systems.

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-5	<p><u>An Estimate of the Production of U-235 in the USSR</u> - to estimate and assess the production processes, equipment, and plant characteristics in the U-235 production program of the USSR.</p> <p><u>Remarks:</u> Completion date Aug 58. Manhours - 240.</p>
1-42	<p><u>Location and Characteristics of Soviet Nuclear Stockpile Sites</u> - to determine the locations of Soviet nuclear weapons stockpile sites; the timetable for planning and constructing the sites; the organization responsible for construction; the controlling authority when the sites become operational; if possible, to develop a physical description of the sites and an estimate of their capacity. This information should provide insight into the Soviet philosophy for their stockpile program, i. e., a combined national stockpile and operational stockpile program vs a completely dispersed stockpile pattern.</p> <p><u>Remarks:</u> Completion date Jan 59. Manhours - 240.</p>
1-43	<p><u>Associations Between the Soviet Nuclear Weapons and Guided Missiles Programs</u> - to analyze all intelligence information indicating a connection between the Soviet nuclear weapons and guided missiles programs, with particular emphasis on the test and operational phases of the programs. The emphasis of the paper will be to determine the success of the Soviets in achieving nuclear warheads for test or operational guided missiles.</p> <p><u>Remarks:</u> Joint NED-GMD project. To be initiated 1 Jul 58. Completion date Mar 59. Manhours - 200.</p>

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-46	<p><u>Atomic Energy Activities at Krasnoyarsk, USSR</u> - to determine and assess the nature and extent of the contribution to the Soviet atomic energy program of facilities in the area of Krasnoyarsk.</p> <p><u>Remarks:</u> To be initiated 15 Jul 58. Completion date Oct 58. Manhours - 320.</p>
1-49	<p><u>The USSR Nuclear Power Program</u> - to determine and assess the current status and probable trends in the nuclear power program of the USSR, excluding aircraft and naval propulsion developments.</p> <p><u>Remarks:</u> This will be an up-dating of CIA/SI 75-58, 15 May 58. Will include an analysis of material presented at the Geneva meeting in September. To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 120.</p>
1-50	<p><u>Controlled Thermonuclear Reactions Research in the USSR</u> - to determine and assess the current status and probable trends of Soviet research directed toward the achievement of a controlled nuclear fusion reaction for the production of power.</p> <p><u>Remarks:</u> This will be an up-dating of the present paper and will include a complete analysis of material presented at the Geneva meeting in September. Coordination with FSD. To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 180.</p>
1-51	<p><u>Soviet Research on Nuclear Propulsion for Aircraft</u> - to summarize information available concerning aircraft nuclear propulsion research and development within the Soviet Union. The report will be basic in nature and more of a survey than a detailed analysis although analysis will be made of all firm evidence presented.</p> <p>(continued)</p>

Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-51	(continued) <u>Remarks:</u> Coordination with ASD. Completion date Sep 58. Manhours - 120.
1-56	<u>Chief Directorate for Peaceful Uses of Atomic Energy of the Council of Ministers</u> - to summarize the administrative organization, functions and leading personalities of this Chief Directorate. The interplay of this Chief Directorate with the Ministry of Medium Machine Building (the Soviet atomic energy program administrator) and with the rest of the economy is to be highlighted.  <u>Remarks:</u> To be initiated 1 Sep 58. Completion date Oct 58. Manhours - 120.
1-58	<u>Lithium Metallurgy in the Soviet Union</u> - to determine and assess the status of lithium technology in the Soviet Union, particularly as applicable to advanced propulsion reactors, and the competency of scientists who are active in this field.  <u>Remarks:</u> Completion date Aug 58. Manhours - 120.
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	<u>Atomic Energy Programs in Selected Countries of the Free World</u> - as part of a series of reports in this category, the following are scheduled for production this year. Aspects to be assessed are: (1) the country's program in terms of personnel, facilities, resources, accomplishments, and plans; (2) indications of the development of military applications; and (3) if applicable, the impact of the USSR nuclear aid and assistance programs.
1-64	<u>Scandinavia</u> <u>Remarks:</u> To be initiated 1 Jul 58. Completion date Sep 58. Manhours - 140.

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-70	<u>25X6A</u> [REDACTED] <u>Remarks:</u> To be initiated 1 Jul 58. Completion date Sep 58. <u>Manhours</u> - 140.
1-88	<u>Belgium</u> <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. <u>Manhours</u> - 140.
1-89	<u>Near East (Turkey, Greece, Egypt)</u> <u>Remarks:</u> To be initiated 1 Jul 58. Completion date Dec 58. <u>Manhours</u> - 140. <u>25X6A</u>
1-90	[REDACTED] <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. <u>Manhours</u> - 140.

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Atomic Energy Programs in Selected Satellite Countries - as part of a series of reports in this category, the following are scheduled for production this year. Aspects to be assessed are: (1) the country's program in terms of personnel, facilities, resources, accomplishments, and plans; (2) indications of the development of military applications; and (3) its relationship with the Soviet atomic energy program.

1-91	<u>Communist China</u> <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. <u>Manhours</u> - 140.
1-92	<u>Hungary</u> <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. <u>Manhours</u> - 140.

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-71	<p><u>Soviet, Japanese and U.S. Announcements of Soviet Nuclear Tests</u> - to cover all announcements of Soviet tests up to date of announcement of unilateral test moratorium.</p> <p><u>Remarks:</u> This will be an up-dating of CIA/SI 20-57, 21 Oct 57. To be initiated 1 Jul 58. Completion date Aug 58. Manhours - 32.</p>
1-72	<p><u>Estimate of Soviet Plutonium Production</u> - to estimate Soviet plutonium production and reactor time tables and reactor characteristics, and to provide a summary estimate of Soviet uranium metal production.</p> <p><u>Remarks:</u> To be initiated 1 Aug 58. Completion date Nov 58. Manhours - 320.</p>
1-75	<p><u>Uranium Ore and Metal Production in Communist China</u> - to study the building of uranium ore and metal facilities in Communist China and of Soviet-Chinese relations in this field.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Apr 59. Manhours - 200.</p>
1-76	<p><u>Soviet Nuclear Weapons Development Capabilities</u> - to determine future Soviet weapons development capabilities and thereby develop an insight into the trends likely to be followed in future weapons development. This report will be based primarily on current estimates of Soviet weapons capabilities.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Nov 58. Manhours - 240.</p>

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-79	<u>Uranium Ore Production Operations in Bulgaria</u> - to analyze in detail all evidence on uranium mining activities in Bulgaria, and estimate ore output there for the USSR.  <u>Remarks:</u> Completion date Jul 58. Manhours - 240.
1-80	<u>Uranium Ore Production Operations in Rumania, Bulgaria, Poland and Hungary</u> - to summarize all evidence on the magnitude of uranium mining operations in these countries and estimate ore output there for the USSR since 1946.  <u>Remarks:</u> Completion date Dec 58. Manhours - 280.
1-81	<u>Characteristics of Soviet Nuclear Test Operations at Novaya Zemlya (North Island)</u> - to summarize the significant data acquired on all the Soviet nuclear test operations at the Novaya Zemlya proving ground and present a list of activities which may be accepted as indicators of impending tests in the future.  <u>Remarks:</u> To be initiated 1 Jul 58. Completion date Sep 58. Manhours - 160. 25X1D0a
1-82	<u>Soviet Operations</u> [REDACTED] to determine Soviet uranium metal technology from a detailed analysis of intelligence on this plant.  <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 480.
1-83	<u>Soviet Methods of Solvent Extraction of Irradiated Nuclear Fuels</u> - to investigate the status of solvent extraction in the USSR as applied to treatment of irradiated slugs from reactors for production of plutonium and uranium recovery.  <u>Remarks:</u> Coordination with FSD. Completion date Jan 59. Manhours - 400.

Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-84	<p><u>Nuclear Research of Laboratory II - to assess past, present, and estimated future programs of research at Laboratory II in support of overall AE program.</u></p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Coordination with FSD. Progress report 15 Jan 59. Completion date Jun 59. Manhours - 480.</p>
1-85	<p><u>Soviet Research on Important Non-Fissile Reactor Metals - to assess Soviet research and capabilities for utilization of certain major non-fissionable metals in reactor technology.</u></p> <p><u>Remarks:</u> Coordination with FSD. To be initiated 1 Jul 58. Progress report 15 Jan 59. Completion date Jun 59. Manhours - 480.</p>
1-86	<p><u>Tabulation of Characteristics of Soviet Research Reactors - to determine priorities and time scales in the construction of Soviet research reactors and the full-scale applications toward which this research is directed.</u></p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Oct 58. Manhours - 240.</p>
1-87	<p><u>Processing Ores of Nuclear Metals in the USSR - to determine the status of lithium, uranium and thorium processing in the USSR as to: (1) types of processes, (2) their efficiency, and (3) leading scientific and technical people and organizations involved.</u></p> <p><u>Remarks:</u> Implementation by external contract. Completion date Dec 58. Manhours - 50.</p>

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-93	<p><u>An Analysis of the EURATOM Atomic Energy Program - to analyze: (1) EURATOM's plans for construction of nuclear power stations, (2) EURATOM's plans for isotope separation facilities, and (3) impact of the EURATOM program on the native programs of member countries.</u></p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 140.</p>
1-94	<p><u>An Analysis of the Soviet Bloc Contributions to the IAEA - to assess the impact of Soviet aid on the International Atomic Energy Agency and on the individual countries receiving Soviet aid through this channel.</u></p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 100.</p>
1-95	<p><u>Controlled Thermonuclear Reactions Research in the Free World Excluding the U.S. and the U.K. - to analyze available material concerning controlled thermonuclear reaction research in the countries covered. The current status of each program and an assessment of its potential will be shown.</u></p> <p><u>Remarks:</u> To be initiated 1 Dec 58. Coordination with FSD. Completion date Feb 59. Manhours - 120.</p>
1-96	<p><u>Soviet Atomic Energy Activities in the Angarsk Area - to determine and assess the nature and extent of contribution to the Soviet atomic energy program of facilities in the area of Angarsk.</u></p> <p><u>Remarks:</u> Completion date Oct 58. Manhours - 160.</p>

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Division: Nuclear Energy

<u>Project Designation</u>	<u>Title and Description</u>
1-97	<p><u>The French Nuclear Weapons Program</u> - to assess existing French capacity to produce fissionable material and an estimate of future capabilities, to examine French weapons research, to assess French nuclear weapons testing ground facilities in existence or planned, and significant first French nuclear weapon test (if any).</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Dec 58. Manhours - 140.</p>
1-98	<p><u>Summary of Evidence on Soviet Bloc High Yield Underground Explosions</u> - to assess the validity of Soviet accounts of the use of great amounts of high explosives over the past five years and to examine the possibility that the detonations may have had some connection with, or significance for, the Soviet atomic energy program.</p> <p><u>Remarks:</u> Completion date Jul 58. Manhours - 160.</p>
1-99	<p><u>Nuclear Warheads for Air Defense</u> - to assess Soviet research, development and progress in the application of nuclear warheads for defense against aircraft.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Coordination with GMD. Completion date Jun 59. Manhours - 120.</p>

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Division: Nuclear Energy

<u>Other Scheduled Production Activities</u>		<u>Manhour Allocation</u>
<u>1. Contributions to NIE's</u>		
	a. Soviet Missile Capabilities	300
25X6AA-RDP61-20004-1	b. The Outlook for East Germany	200
	c. [REDACTED]	200
	d. Soviet Capabilities and Probable Courses of Action	100
25X6A	e. Soviet Nuclear Energy Program	4500
	f. [REDACTED]	400
	g. Air Defense of the Sino-Soviet Bloc	100
	h. Capabilities and Trends in Soviet Science and Technology	100
<u>2. Support of NIS Program</u>		
25X6A	a. Section 17 of NIS's on [REDACTED] East Germany, [REDACTED]	120
25X6A	b. Section 73 of NIS's on East Germany, [REDACTED] and the USSR	540
	c. Section 62 of NIS's on East Germany, South Korea, Bolivia, USSR, Yugoslavia, British Caribbean Federation, Hungary, Rumania, Turkey, Malaya & Singapore, French West Africa, Togo, & Spanish Sahara	210
	d. Section 63 of NIS's on East Germany, USSR, Belgian Congo, British Caribbean Federation, Bolivia, Yugoslavia, Hungary, Rumania, Turkey, South Korea, and Malaya & Singapore	250
<u>3. Support of SID, OCI Publications, and Briefings</u>		3260

(continued)

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Division: Nuclear Energy

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
(continued)	
4. <u>Support of Office Projects</u>	
a. Soviet Space Research Program	350
b. Soviet Ballistic Missile Defense System	100
c. Soviet Nuclear Submarine-Guided Missile Weapon Systems	120

Division: Guided Missiles

Intelligence Research and Production Responsibilities

The Guided Missile Division maintains cognizance of and produces finished intelligence on all aspects of foreign research and development in guided missiles and space vehicles and their supporting subsystems, including activities, trends, capabilities, and achievements in research and development of airframes, warheads, propulsion units, guidance systems, and launching and handling equipment. In addition, the chief of the division, in his role as CIA Guided Missiles Intelligence Coordinator, performs functions assigned directly by the Deputy Director for Intelligence.

During FY 59, the Guided Missiles Division will continue to employ its dual approach to these responsibilities by concentrating on: (1) the technical aspects of foreign (primarily Soviet) missile and space vehicles developments; (2) providing direct and continuous current intelligence assessments; and (3) supporting functions such as field testing, program personnel, organizations, and facilities. In addition, a concerted effort will continue to be placed on providing guidance to the various collection activities.



Division: Guided Missiles

<u>Project Designation</u>	<u>Title and Description</u>
2-2	<p><u>Kapustin Yar Guided Missile Test Range Activities</u> - to assess Soviet Guided missile development as indicated by analysis of all guided missile activities at the Kapustin Yar test range.</p> <p><u>Remarks:</u> Continuing project. Manhours - 635.</p>
2-13	<p><u>Organizations and Installations Involved in the Soviet Guided Missiles Research and Development Program</u> - to determine the organization and control of the Soviet guided missile research and development effort. This will include a study of all research institutes, design bureaus, and factories known or suspected of involvement in the Soviet guided missile research and development program.</p> <p><u>Remarks:</u> Completion date Jan 59. Manhours - 200.</p>
2-16	<p><u>Technical Characteristics of Soviet Guided Missile Launching Sites</u> - to assess characteristics of all known or suspect guided missile launching sites in the USSR and Soviet dominated territory. Extrapolations will be made to determine operating characteristics and design improvements of Soviet surface-to-surface and surface-to-air guided missile systems.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 15 Dec 58. Completion date Apr 59. Manhours - 200.</p>
2-18	<p><u>Soviet Surface-to-Air Guided Missile Systems</u> - to assess, on a time-phased basis, the Soviet research and development programs on surface-to-air guided missile systems from an evaluation of all available information on this category of guided missiles in conjunction with both related Soviet technical capabilities and comparable US research and development programs.</p> <p><u>Remarks:</u> Completion date Feb 59. Manhours - 600.</p>

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Division: Guided Missiles

<u>Project Designation</u>	<u>Title and Description</u>
2-19	<p><u>Soviet Surface-to-Surface Guided Missile Systems</u> - to assess, on a time-phased basis, the Soviet research and development programs on surface-to-surface guided missile systems from an evaluation of all available information on this category of guided missiles in conjunction with both related Soviet technical capabilities and comparable US research and development programs.</p> <p><u>Remarks:</u> To be initiated 1 Aug 58. Completion date Feb 59. Manhours - 1,245.</p>
2-20	<p><u>Soviet Air-to-Surface Guided Missile Systems</u> - to assess, on a time-phased basis, the Soviet research and development programs on air-to-surface guided missile systems from an evaluation of all available information on this category of guided missiles in conjunction with both related Soviet technical capabilities and comparable US research and development programs.</p> <p><u>Remarks:</u> To be initiated 1 Dec 58. Completion date Jun 59. Manhours - 1,000.</p>
2-21	<p><u>Soviet Air-to-Air Guided Missile Systems</u> - to assess, on a time-phased basis, the Soviet research and development programs on air-to-air guided missile systems from an evaluation of all available information on this category of guided missiles in conjunction with both related Soviet technical capabilities and comparable US research and development programs.</p> <p><u>Remarks:</u> Completion date Feb 59. Manhours - 600.</p>

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Division: Guided Missiles

<u>Project Designation</u>	<u>Title and Description</u>
2-24	<p><u>Tyura-Tam Missile Test Range Activities</u> - to assess Soviet guided missile development as indicated by analysis of all guided missile activities at the Tyura-Tam missile test range.</p> <p><u>Remarks:</u> Continuing project. Special reports issued as information warrants. Manhours - 570.</p>
2-26	<p><u>Kapustin Yar Activity Possibly Related to ICBM Operations</u> - to study activities at the Kapustin Yar test range which might have application to the Soviet ICBM development program.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Nov 58. Manhours - 350.</p>
2-27	<p><u>Soviet Use of Exotic Fuels in Missiles</u> - to determine the nature and extent of Soviet use of nitrogen tetroxide, fluorine, unsymmetrical dimethyl hydrazine (UDMH), and other exotic fuels in missile propulsion systems.</p> <p><u>Remarks:</u> To be initiated 1 Oct 58. Completion date Mar 59. Manhours - 200.</p>
1-43	<p><u>Associations Between the Soviet Nuclear Weapons and Guided Missiles Programs</u> - to analyze all intelligence information indicating a connection between the Soviet nuclear weapons and guided missiles programs, with particular emphasis on the test and operational phases of the programs. The emphasis of the paper will be to determine the success of the Soviets in achieving nuclear warheads for test or operational guided missiles.</p> <p><u>Remarks:</u> Joint GMD-NED project. To be initiated 1 Jul 58. Completion date Mar 59. Manhours - 200.</p>

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Division: Guided Missiles

<u>Other Scheduled Production Activities</u>		<u>Manhour Allocation</u>
	<u>1. Contributions to NIE's</u>	
	a. Soviet Missile Capabilities	1240
25X6A	b. The Outlook for East Germany	50
	c. [REDACTED]	50
	d. Soviet Capabilities and Probable Courses of Action	50
25X6A	e. [REDACTED]	100
	f. Air Defense of the Sino-Soviet Bloc	100
	g. Capabilities and Trends in Soviet Science and Technology	150
	<u>2. Support of NIS Program</u>	
	Review of Sections 70, 72, 73, 76, and 17	500
	<u>3. Support of SID, OCI Publications, and Briefings</u>	8190
	<u>4. Support of Office Projects</u>	
	a. Soviet Space Research Program	1900
	b. Soviet Ballistic Missile Defense System	800
	c. Soviet Nuclear Submarine-Guided Missile Weapon Systems	1000

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Division: Electronics

Intelligence Research and Production Responsibilities

The Electronics Division maintains cognizance of and produces finished intelligence on foreign electronics technology, including research, development, and certain operational activities such as jamming and non-communications electronic radiations.

The Technical Services Branch is responsible for technical assistance to other branches in areas of common concern, and for intelligence research and production on electronics personalities, institutions, and organizations.

The Electronics Branch is responsible for intelligence research and production in such specific areas as: electronic aspects of the air defense system of the Soviet Bloc; ESV electronic tracking systems; electronic components, thermoelectrics, materials, and theory; electronic systems in radar, radio navigation, and fire control; and radar electronic countermeasures.

The Telecommunications Branch is responsible for intelligence research and production in such specific areas as: communications capabilities including broadcast radio, telephone and telegraph, television, and microwave radio systems; coaxial and waveguide systems; facsimile and telephoto research and development; scatter propagation; meteor trail propagation; telemetering; communications aspects of ESV's and space research; and communications aspects of air defense systems.

The Telecommunications Branch is further responsible for the production of technical intelligence in support of U.S. international broadcasting programs and for intelligence on Soviet Bloc radio jamming operations.

The ELINT\* Branch develops and recommends coordinated CIA ELINT collection requirements, priorities and targets; conducts studies and develops

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\*ELINT is defined as: "the collection (observation and recording), and technical processing for subsequent intelligence purposes, of information  
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Division: Electronics

proposals relating to new and improved methods, techniques and systems for the collection and analysis of ELINT information in collaboration with other members of the ELINT community; and provides technical analysis and evaluation of specially processed ELINT material. It also provides assistance to the National ELINT Technical Processing Center and support to the CIA ELINT Staff Officer in the development of CIA and OSI programs for the collection and analysis of ELINT data. While no research projects per se are published on ELINT, special ELINT briefs and analysis reports are issued periodically.

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derived from foreign non-communication electromagnetic radiations emanating from other than atomic detonation or radioactive sources."

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Division: Electronics  
(Technical Services Branch)

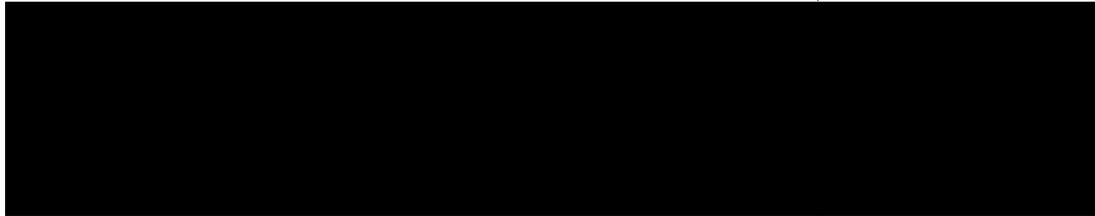
<u>Project Designation</u>	<u>Title and Description</u>
3-3	<p><u>Correlation of Soviet Electronics Equipment in Current Use with Soviet Research Institutes, Laboratories, and Personalities</u> - to correlate known Soviet electronics equipment with research activities of several known Scientific Research Institutes in order to establish the Soviet pattern and procedure from research and development to field use and to aid in predicting the appearance of new electronic equipments.</p> <p><u>Remarks:</u> Continuing project with separate reports issuing as information warrants. Progress report 30 Nov 58. Manhours - 400.</p>
3-41	<p><u>Soviet Radar Research and Development Program</u> - to determine the scope and organization of the Soviet radar research and development program. Special emphasis will be given to the research facilities and personnel and the relative priority assigned to various objectives by the Soviets.</p> <p><u>Remarks:</u> Completion date Dec 58. Manhours - 850.</p>
3-48	<p><u>Soviet Planning, Direction and Control of Important Scientific Research in Electronics</u> - to determine current Soviet methods of planning and controlling critical electronics research activities.</p> <p><u>Remarks:</u> One of a group of Office projects on the general topic of organization, planning, and control of Soviet scientific research and development. Completion date Oct 58. Manhours - 400.</p>

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Division: Electronics  
(Technical Services Branch)

<u>Project Designation</u>	<u>Title and Description</u>	25X1D0a
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3-50



Remarks: Completion date Nov 58. Manhours - 420.

3-56

Development and Application [redacted] as a Multi-Purpose Electronics System - to consolidate and assess information on the uses of this long-range electronics system by the USSR.

25X1D0a

Remarks: An up-dating of CIA/SI 52-56, 15 Jun 56, Soviet Electronic Devices [redacted] Their Possible Relationship and Significance, Secret. To be initiated 1 Dec 58. Completion date Apr 59. Manhours - 200.

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Division: Electronics  
(Electronics Branch)

<u>Project Designation</u>	<u>Title and Description</u>
3-22	<p><u>Soviet Bloc Radars</u> - to provide readily available graphic and descriptive information on Soviet Bloc radars for use in preparing reports and estimates, collection requirements, briefings, and to serve as a basis for continuing surveillance of Soviet radar research with a view to the anticipation of future radar developments.</p> <p><u>Remarks:</u> Continuing project. Manhours - 300.</p>
3-54	<p><u>Status of Electronics Research and Development in Communist China</u> - to estimate the present status and capabilities of Communist Chinese efforts in all areas of electronic research and development.</p> <p><u>Remarks:</u> Progress report 31 Oct 58. Completion date Jun 59. Manhours - 500.</p>
3-57	<p><u>Soviet Research and Development of Anti-Electromagnetic Radiation Materials</u> - to determine Soviet research and development of radar camouflage.</p> <p><u>Remarks:</u> Completion date Nov 58. Manhours - 300.</p>
3-58	<p><u>Soviet Research and Development Utilizing Semiconductor Materials in Electron Devices, other than Transistors and Diodes</u> - to determine recent trends in the research and development of electronic devices, excluding transistors and diodes, utilizing semiconductor materials, with emphasis in thermoelectrics.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Jan 59. Manhours - 300.</p>

Division: Electronics  
(Electronics Branch)

<u>Project Designation</u>	<u>Title and Description</u>
3-59	<p><u>Soviet Electronics Aids to Navigation</u> - to estimate the research and development capabilities of the Soviets in the field of electronic aids to navigation such as altimeters, distance measuring equipment (DME), etc.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Dec 58. <u>Manhours</u> - 200.</p>
3-60	<p><u>Soviet Research and Development of Non-Metallic Magnetic Materials for Electronic Components</u> - a study of Soviet research and development of these new materials as used in the development of electronic components.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Jan 59. <u>Manhours</u> - 200.</p>
3-61	<p><u>Soviet Magnetron Research and Development</u> - to assess the Soviet research and development of magnetrons with particular emphasis on the military applications.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. <u>Manhours</u> - 200.</p>
3-62	<p><u>Electronic Aspects of the Air Defense System of the USSR</u> - to assess Soviet capabilities in air defense electronics for use against air-breathing targets, with emphasis on developments in digital-data transmission and data processing.</p> <p><u>Remarks:</u> To be initiated 1 Aug 58. Completion date Mar 59. <u>Manhours</u> - 300.</p>

Division: Electronics  
(Electronics Branch)

<u>Project Designation</u>	<u>Title and Description</u>
3-63	<u>Soviet Developments in Ground Radar</u> - to assess current Soviet research and development capabilities in ground radars, such as early-warning, fire control and ground controlled intercept systems.  <u>Remarks:</u> To be initiated 1 Jul 58. Completion date Jan 59. <u>Manhours</u> - 300.

Division: Electronics  
(Telecommunications Branch)

<u>Project Designation</u>	<u>Title and Description</u>
3-33	<u>Relative Effect of Jamming and Other Causes of Poor Reception of U.S. International Broadcasts</u> - to study the relative importance of jamming and other causes of poor reception such as adjacent or co-channel interference and weak signals as an aid to the evaluation of technical effectiveness.  <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 200.
3-51	<u>The Sino-Soviet Bloc Radio Jamming System and Its Operational Capabilities</u> - to survey the Soviet Bloc jamming system with emphasis on Soviet capabilities to jam military communications.  <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 500.
3-64	<u>Communications System and Capabilities of the Soviet Satellites</u> - to assess the research and development of Soviet Satellite communications systems such as scatter, micro-wave, and television.  <u>Remarks:</u> To be initiated 1 Jul 58. Completion date Jan 59. Manhours - 400.
3-65	<u>Soviet Television Research and Development</u> - to determine Soviet research and development capabilities in the field of television, with emphasis on its military applications.  <u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 300.

Division: Electronics  
(Telecommunications Branch)

<u>Project Designation</u>	<u>Title and Description</u>
3-66	<p><u>Soviet Microwave Radio Communications</u> - to assess the Soviet research and development capabilities in the field of microwave radio communication.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. <u>Manhours</u> - 400.</p>
3-67	<p><u>Broadcast Target Area Analysis</u> - to analyze reception of Western international broadcasts based primarily on monitoring within the Soviet Bloc target areas.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58, Completion date Jan 59. <u>Manhours</u> - 200.</p>
3-68	<p><u>Soviet Very Low Frequency (VLF) Radio Communication</u> - to assess the Soviet research and development in the field of VLF radio communication with special emphasis on its military applications.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Completion date Jan 59. <u>Manhours</u> - 300.</p>

SECRET/CIA INTERNAL USE ONLY

Division: Electronics  
(ELINT)

<u>Project Designation</u>	<u>Title and Description</u>
3-69	<p><u>ELINT Analysis Reports</u> - to summarize information on electronic non-communications equipment and new signals based on ELINT and supporting collateral.</p> <p><u>Remarks:</u> Reports will issue as information warrants. Continuing project. Limited distribution. Primarily for the use of ELINT collection and production of electronic intelligence. Manhours - 800.</p>

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Division: Electronics

	<u>Manhour Allocation</u>
<u>Other Scheduled Production Activities</u>	
1. <u>Contributions to NIE's</u>	
a. <sup>25X6A</sup> <del>The</del> Outlook for East Germany	25
b. [REDACTED]	25
c. Soviet Capabilities and Probable Courses of Action	50
25X6A	
d. [REDACTED]	25
e. Air Defense of the Sino-Soviet Bloc	150
f. Capabilities and Trends in Soviet Science and Technology	150
2. <u>Support of NIS Program</u>	
For review of Sections 70, 71, 73, 76, and 17	150
3. <u>Support of SID, OCI Publications, and Briefings</u>	1115
4. <u>Special Periodic Reports</u>	
a. Bi-Monthly EMW Briefs	400
b. Monthly Report on U.S. Broadcast Technical Effectiveness	750
c. Semi-Annual Summary of Mail Intercepts and Interrogations on Broadcast Effectiveness	400
5. <u>Support of Office Projects</u>	
a. Soviet Space Research Program	650
b. Soviet Ballistic Missile Defense System	1000
c. Soviet Cybernetics	300

Division: Applied Science

Intelligence Research and Production Responsibilities

The Applied Science Division maintains liaison with the Department of Defense and other federal agencies and produces finished intelligence only as necessary to supplement intelligence provided by these other agencies on foreign research and development in aeronautical and naval weapons systems and equipment, including biological and chemical warfare. Veterinary medicine is considered an adjunct to BW and has been included within the responsibilities of ASD. Guided missiles, nuclear weapons, military electronics, and the human medical aspects of BW/CW are the responsibilities of other OSI divisions.

In FY 59, the Weapons Branch will emphasize flight test activities, rocket propulsion for aircraft, the submarine as a base for the launching of guided missiles, advanced propulsion systems for submarines, and finally the stability of naval craft. The BW/CW Branch will do research on Soviet and Satellite development of new CW agents, and will continue to attack the BW problem from several angles but with emphasis on collection. Increased use of external contracting is contemplated by the BW/CW Branch.



Division: Applied Science  
(BW/CW)

<u>Project Designation</u>	<u>Title and Description</u>
4-37	<p><u>Soviet Bloc Research on Factors Affecting Aerosolized Microbiological Materials</u> - to assess the procedures and techniques employed by Soviet Bloc scientists in research on, and evaluation of, biological decay of aerosolized microbiological material as influenced by humidity, temperature, ultra-violet radiation, and other atmospheric factors. Further, to assess the technology employed in the aerosolization of particles of wet or dry microbiological material and ascertain the extent of research on the evaluation of biological decay resulting from physical factors inherent in the process of aerosolizing microbiological materials.</p> <p><u>Remarks:</u> Completion date Dec 58. Manhours - 250.</p>
4-38	<p><u>Soviet Research on Foot-and-Mouth Disease</u> - to determine the quality and significance of Soviet research and development on foot-and-mouth disease with emphasis on those advances, trends, and capabilities of antilivestock BW importance.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Jan 59. Manhours - 100.</p>
4-39	<p><u>Soviet Potential in Bio-engineering for the Production of Bacterial Toxins for BW Employment</u> - to determine Soviet interest in, and capability for, the production of toxins of bacteria suitable for BW employment. Special emphasis will be given to botulinus toxin and its possible production by the Soviets in crystalline form. An attempt will be made to link personnel and institutes involved in bacterial toxin production with suspect BW organizations in the USSR.</p> <p><u>Remarks:</u> To be initiated 1 Aug 58. Coordination with FSD and MD. Completion date Jan 59. Manhours - 200.</p>

SECRET/CIA INTERNAL USE ONLY

Division: Applied Science  
(BW/CW)

<u>Project Designation</u>	<u>Title and Description</u>
4-55	<p><u>Foot-and-Mouth Disease as a Soviet Antilivestock Weapon</u> - to assess Soviet capability and future probable developments with respect to use of the virus of foot-and-mouth disease as an antilivestock BW weapon. Primary research effort will be placed on offensive aspects with special emphasis given to Soviet preparedness and intentions to employ this virus as a BW agent. The study will include an assessment of Soviet research and development capabilities and potential for production and dissemination of this virus for purposes of biological warfare.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date 4th quarter FY 60. Manhours - 100.</p>
4-56	<p><u>The BW Capabilities of the Soviet European Satellites</u> - to evaluate current biological warfare capabilities of the Soviet European satellites. Major microbiological scientific installations and key scientific personnel will be assessed along with national military policies on scientific research and development in the microbiological field. The influence of the veterinary sciences on BW capabilities of each Satellite will be tersely reviewed. The level of each Satellite's meteorological sciences applicable to BW capabilities will be included.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 450</p>
4-57	<p><u>Soviet Arthropod-Borne BW Agents</u> - to assess Soviet R&amp;D having a bearing on the use of arthropods to transmit potential BW agents. Special emphasis will be placed upon the research activities of forty Soviet scientists previously screened in the basic study of PD 4-6. The publications and research activities of these men have suggested they may be key figures in Soviet research on vector transmission of BW diseases.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 31 Jan 59. Completion date Jun 59. Manhours - 500.</p>

Division: Applied Science  
(BW/CW)

<u>Project Designation</u>	<u>Title and Description</u>
4-41	<p><u>A Study of Soviet Meteorological Techniques Used in Investigating Atmospheric Conditions in Industrial and Heavily Populated Areas as Applied to BW and CW - to assess meteorological and micrometeorological techniques used in investigating atmospheric conditions in industrial and heavily populated areas. An attempt will be made to determine and evaluate Soviet progress in methods of forecasting atmospheric conditions conducive to efficient utilization of biological and chemical warfare agents.</u></p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 31 Jan 59. Completion date Jun 59. Manhours - 400.</p>
4-42	<p><u>Soviet Research on Aerosols and Aerosol Dissemination of Possible Military Significance - to determine the potential military application of Soviet aerosol research to include (1) adaptability of insecticide dissemination equipment, either as experimental items or as standardized devices, for the dissemination of CW and BW agents, (2) production of optimum size particles, and (3) stability of the aerosol cloud.</u></p> <p><u>Remarks:</u> Completion date Aug 58. Manhours - 100.</p>

SECRET/CIA INTERNAL USE ONLY

Division: Applied Science  
(BW/CW)

<u>Project Designation</u>	<u>Title and Description</u>
4-25	<p><u>Trends in Soviet Research on Organophosphorous Compounds -</u> to determine the trends in Soviet research in organophosphorous chemistry, and the relation of this research to potential or actual chemical warfare use. Emphasis will be placed on Soviet efforts in the development of V-agents and other new CW agents.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Sep 58. Manhours - 150.</p>
4-58	<p><u>Soviet Research Related to the Development of New CW Agents -</u> to study pertinent Soviet research in an effort to find those compounds or types of compounds having high toxicities on which the Soviets are working, and that have potential use as new CW agents. Those compounds affecting enzyme systems other than the cholinesterase system will receive special attention.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 200.</p>
4-59	<p><u>The CW Program of the Soviet European Satellites -</u> to determine the CW effort in each of the European satellites, noting particularly any Soviet connections. The studies will include material on (1) CW organization, (2) research related to CW, (3) CW equipment manufacture and storage, and (4) an estimate of capability including potential support to the USSR.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 31 Mar 59. Completion date 4th quarter FY 60. Manhours - 300.</p>

SECRET/CIA INTERNAL USE ONLY

Division: Applied Science  
(Weapons)

<u>Project Designation</u>	<u>Title and Description</u>
4-50	<p><u>Sea-Keeping Ability and Stability of Ships and Submarines</u> - to summarize knowledge of Soviet facilities for research on the sea-keeping ability and directional stability and control of ships, together with a bibliography of published works in the field and a list of personalities who are specialists in the field. In addition, the report will contain comments on the meaning of the assembled information as related to Soviet capabilities in warship design.</p> <p><u>Remarks:</u> Completion date Oct 58. Manhours - 50.</p>
4-60	<p><u>Soviet Flight Test Activities</u> - to determine location, organization, activities, and personalities associated with Soviet flight test bases.</p> <p><u>Remarks:</u> To be initiated 1 Nov 58. Completion date Jun 59. Manhours - 300.</p>
4-61	<p><u>Soviet Rocket Propulsion for Aircraft</u> - to survey Soviet activities on rocket propulsion for aircraft, including organizations and personalities involved.</p> <p><u>Remarks:</u> To be initiated 1 Dec 58. Completion date Jun 59. Manhours - 300.</p>

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Division: Applied Science

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
<u>1. Contributions to NIE's</u>	
a. <sup>25X6A</sup> The Outlook for East Germany	40
b. [REDACTED]	40
c. <sup>25X6A</sup> Soviet Capabilities and Probable Courses of Action	100
d. [REDACTED]	40
e. Air Defense of the Sino-Soviet Bloc	180
f. Capabilities and Trends in Soviet Science and Technology	200
<u>2. Support of NIS Program</u>	
a. Section 45 of NIS's on Greece, <sup>25X6A</sup> Israel, Indonesia, Ireland, Chile, [REDACTED] Mongolia, Brazil, India and [REDACTED] (Implementation by external contract)	475
b. <sup>25X6A</sup> Section 76 of NIS's on East Germany, <sup>25X6A</sup> [REDACTED] USSR, and Switzerland (Implementation by external contract)	225
c. For review of Sections 17, 70, 72, 73, 74, 75	100
<u>3. Support of SID, OCI Publications, and Briefings</u>	1800
<u>4. Support of Office Projects</u>	
a. Soviet Space Research Program	200
b. Soviet Nuclear Submarine-Guided Missile Weapon Systems	1350
c. The Soviet Chemical Warfare Program	450
d. The Soviet Biological Warfare Program	900

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Division: Medicine

Intelligence Research and Production Responsibilities

The Medicine Division maintains cognizance of and produces finished intelligence on (a) foreign research and development and probable future trends in space medicine; the human aspects of biological, chemical, and atomic warfare; physiology, biochemistry, pharmacology, psychiatry, psychology and other behavioral sciences; biophysics, medical microbiology, immunology, epidemiology; and allied sciences and (b) the overall level of foreign development in the assigned fields and sciences, including: medical training, organization and administration, incidence of disease, medical and public health facilities, and specific applications, devices, processes and techniques.

In FY 59 the Medicine Division will study four fields of Soviet basic or applied medical research. These include areas designated to be of high priority importance, such as space medicine and nuclear medicine; continuation of analysis of Soviet behavioral research; and assessment of Soviet research in immunochemistry, a field of important potential breakthrough. Trends, capabilities, and potentialities for all fields of Soviet basic and applied medical research of strategic significance will be summarized. Impact of Soviet medical aid on non-Communist countries will be evaluated.

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Division: Medicine

<u>Project Designation</u>	<u>Title and Description</u>
5-23	<p><u>Communist China's Capabilities and Potentialities in Medical Sciences</u> - to determine the status of basic and clinical research in the medical sciences in Communist China including priorities and trends; to assess the quality and potential thereof.</p> <p><u>Remarks:</u> Completion date Sep 58. Manhours - 100.</p>
5-24	<p><u>Satellite Capabilities and Potentialities in Medical Sciences</u> - to determine the status of basic and clinical research in the medical sciences in the Satellites including priorities and trends; to assess the quality and potential thereof.</p> <p><u>Remarks:</u> Completion date Dec 58. Manhours - 200.</p>
5-25	<p><u>Soviet Research on Radiological Safety</u> - to assess the status of Soviet research on radiological safety, the ultimate goal being to determine the absolute limits of exposure to ionizing radiations deemed safe by the USSR. Techniques of monitoring as well as research on personal protective equipment will be studied. From the data derived in this study, an attempt will be made to estimate Soviet capabilities for using ionizing radiations for both peaceful and military applications and the limits to which they may be willing to expose an individual or groups of individuals in order to attain particular objectives. An attempt will be made to interpret significant deviations from accepted radiation exposure standards in terms of priorities attached by the Soviets to their own work.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 15 Jan 59. Completion date Jun 59. Manhours - 500.</p>



Division: Medicine

<u>Project Designation</u>	<u>Title and Description</u>
5-26	<p><u>Soviet Behavioral Research</u> - to assess the Soviet ability to apply behavioral science techniques to the strengthening of their internal social systems through education and training and also to assess Soviet ability to use these techniques to disrupt and weaken the Free World.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 15 Jan 59. Completion date Jun 59, Manhours - 1,325.</p>
5-27	<p><u>Soviet Research in Immunochemistry</u> - to assess Soviet research in immunochemistry. The study will focus attention on the current status of Soviet research with emphasis on their understanding of the mechanisms of immunogenesis and immunological reactions, the nature of antigens and antibodies, and the nature of material which lends itself to immunological analysis. From such a study, information may be obtained which will indicate present Soviet ability to understand some of the reactions between pathogenic microorganisms and the human organism and to control or alter some of these reactions. This, in turn, may indicate their ability to control certain diseases which affect both civilian and military manpower. From such data, it may be possible to project future Soviet ability for maintaining greater freedom from infectious diseases which will be reflected in their population increase, reduction of man-days of work lost, and reduction of the sequelae from infectious diseases.</p> <p><u>Remarks:</u> To be initiated 1 Jul 58. Progress report 15 Jan 59. Completion date Jun 59. Manhours - 650.</p>

Division: Medicine

<u>Project Designation</u>	<u>Title and Description</u>
5-28	<p><u>Soviet Medical Aid to Non-Communist Countries</u> - to assess Soviet medical aid to non-Communist countries to raise the level of medical training, research, and practice, with an evaluation of impact upon the aided country.</p> <p><u>Remarks:</u> To be initiated 1 Sep 58. Coordination with ORR. Completion date May 59. Manhours - 550.</p>
5-29	<p><u>Soviet Capabilities and Potentialities in the Medical Sciences</u> - to summarize trends, capabilities, and potentialities of Soviet research in the medical sciences with emphasis on strategic implications.</p> <p><u>Remarks:</u> To be initiated 15 May 59. Completion date Jun 59. Manhours - 500.</p>

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Division: Medicine

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
<b>1. <u>Contributions to NIE's</u></b>	
a. 25X6A The Outlook for East Germany	55
b. [REDACTED]	70
c. Soviet Capabilities and Probable Courses of Action	60
d. Communist China	60
e. Capabilities and Trends in Soviet Science and Technology	55
<b>2. <u>Support of NIS Program</u></b>	
a. 25X6A Section 45 of NIS's on Greece, Israel, Indonesia, Ireland, Chile, [REDACTED] Mongolia, Brazil and India	1040
b. 25X6A Section 17 of NIS's on UK, East Germany, [REDACTED]	850
c. 25X6A Section 76 of NIS's on East Germany, [REDACTED] USSR	2260
<b>3. <u>Support of SID, OCI Publications, and Briefings</u></b>	960
<b>4. <u>Support of Office Projects</u></b>	
a. Soviet Space Research Program	1100
b. The Soviet Chemical Warfare Program - Offensive and Defensive	200
c. The Soviet Biological Warfare Program - Offensive and Defensive	200
d. Soviet Cybernetics	200

SECRET/CIA INTERNAL USE ONLY

Division: Fundamental Science

Intelligence Research and Production Responsibilities

The Fundamental Science Division maintains cognizance of and produces finished intelligence on: (1) foreign accomplishments in the basic sciences; (2) foreign scientific resources; and (3) foreign accomplishments of office-wide interest that do not specifically relate to any one aspect of science or technology.

Basic science responsibilities for the Sino-Soviet Bloc have been assigned to the following branches: Biology (including agriculture), Chemistry (including metallurgy), Geophysics (including geology and astronomy), and Physics and Mathematics.

Surveying Sino-Soviet Bloc scientific resources is the responsibility of the Scientific Resources Branch and includes the overall organization, planning, and control of science; scientific education; quantity and quality of scientific manpower; and coordination and dissemination of scientific information.

The Special Projects Branch has been assigned projects of office-wide interest relating to both the fundamental and applied sciences. These include problems such as the identification of foreign technological breakthroughs. A section of this branch has the responsibility for the production of finished intelligence on science in countries other than those in the Sino-Soviet Bloc, producing this intelligence primarily in the form of contributions to the National Intelligence Surveys and Estimates.

During FY 59 FSD will continue to do intelligence research on a number of aspects of basic Soviet science with no one area singled out for special emphasis. Projects of note include a reassessment of Soviet R&D affecting food potential, Soviet R&D on various aspects of chemical engineering, projects directed toward fundamental aspects of nuclear physics, projects directed toward Soviet developments in new materials, and projects directed toward Soviet scientific developments resulting from participating in the IGY.

Division: Fundamental Science

Emphasis in Scientific Resources will continue to be placed on trends in Soviet higher education and on an assessment of current changes in the Soviet system for the organization and planning of scientific research. Many of the projects are oriented toward basic aspects of the overall problem of the quality of Soviet scientific research and will contribute toward a future paper on this subject.

The Special Projects Branch will continue to investigate the problems of Soviet leadtime, from initial research to production, and identification of possible Soviet technological breakthroughs.

The division will continue to produce, through the end of the IGY, its International Geophysical Year Information Briefs to furnish timely information and analysis on current and future events in the IGY program on a world-wide basis with particular emphasis on Soviet Bloc IGY activities.

Division: Fundamental Science  
(Biology)

<u>Project Designation</u>	<u>Title and Description</u>
6-1	<u>Soviet Bloc Research and Development on the Technological Factors Affecting Food Potential</u> - an assessment of the current activities and future trends in: (1) <u>Agronomy</u> (crop production and management, chemical and biological control of weeds); (2) <u>Plant Pathology</u> (chemical and biological control of pathogens, particularly cereal and potato pathogens, antibiotics as control agents); (3) <u>Plant Breeding</u> (disease and insect resistance, increased yield, new varieties, use of ionizing radiation and other new techniques); (4) <u>Plant Physiology</u> (plant nutrition, growth regulators); (5) <u>Soil Science</u> (soil physics, soil chemistry, soil fertility, soil microbiology, soil classification and genesis, soil utilization, soil conservation, irrigation and water management, fertilizer technology); (6) <u>Entomology</u> (chemical and biological control of insects); (7) <u>Agricultural Engineering</u> (tillage research, machinery design erosion control); (8) <u>Utilization of Arctic and Arid Lands</u> ; (9) <u>New Food Sources</u> (algae, wood conversion products, industrial synthetics); (10) <u>Animal Sciences</u> (breeding, genetics, feeding, and nutrition, parasites and parasitism, livestock sanitation).

Remarks: A continuing project with publication of an SIR on a biennial basis incorporating research completed since last report. Emphasis in FY 59 will be directed toward an assessment of Soviet research on: (a) modern high-potency herbicides, (b) new chemicals used as soil conditioners and soil surfactants, (c) irrigation and water management techniques including chemical methods for reducing evaporation and seepage losses, (d) desalination of sea water, including thermal distillation, solar distillation and ionic techniques, (e) soil classification and utilization, and (f) new foods and food substitutes. Separate reports on these subtopics will be issued if information warrants. Biennial report Jun 59. Manhours - 550.

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Division: Fundamental Science  
(Biology)

<u>Project Designation</u>	<u>Title and Description</u>
6-3	<p><u>Soviet Basic Microbiological Research Relating to Microbial Genetics</u> - to assess Soviet basic research on the genetics of microorganisms.</p> <p><u>Remarks:</u> Implementation by external contract. Coordination with MD. Completion date Feb 59. Manhours - 200.</p>
6-14	<p><u>Soviet Research in Basic Biology</u> - to assess current activities and future trends of Soviet research in basic biology by a comprehensive in-depth survey. Emphasis will be given to developments of economic or military significance. Special attention will be directed toward:</p> <ol style="list-style-type: none"><li>(1) Molecular biology</li><li>(2) Biophysics</li><li>(3) Cytology, cytogenetics, cytotaxonomy and genetics</li><li>(4) Hydro-biology</li><li>(5) Plant physiology</li></ol> <p><u>Remarks:</u> Emphasis in FY 59 will be directed toward an assessment of Soviet research on (a) biophysics, (b) marine microbiology, and (c) "Origin of life." Partial implementation by external contract. To be initiated 1 Jul 58. Progress report 15 Jan 59. Summary Report - 1st quarter FY 60. Manhours - 200.</p>
6-15	<p><u>Soviet Research on Microbial Nutrition and Microbial Growth</u> - to evaluate Soviet basic research on the nutrition and growth of microorganisms including the role of such environmental factors as temperature and pressure.</p> <p><u>Remarks:</u> To be initiated 1 Oct 58. Coordination with MD and ASD. Progress report 15 Apr 59. Completion date Jun 59. Manhours - 400.</p>

SECRET/CIA INTERNAL USE ONLY

Division: Fundamental Science  
(Biology)

<u>Project Designation</u>	<u>Title and Description</u>
6-16	<p><u>Soviet Radiobiological Research Relating to the Utilization of Radio Isotopes and Radiation Techniques in Biology and Agriculture</u> - to assess Soviet radiobiological research in which radiation and radioactive and stable isotope techniques are being utilized as research tools, excluding medical and microbiological applications. Available Soviet research on absorption of radioactive fallout products, especially, Strontium-90, by soils, plants, and animals will also be considered.</p> <p><u>Remarks:</u> Partial implementation by external contract. To be initiated 1 Sep 58. Coordination with NED and MD. Progress report 15 Mar 59. Completion date May 59. Manhours - 500.</p>



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Division: Fundamental Science  
(Biology)

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
1. <u>Contributions to NIE's</u>	
a. Capabilities and Trends in Soviet Science and Technology	70
b. Soviet Capabilities and Probable Courses of Action	40
c. Outlook for East Germany	40
2. <u>Support of NIS Program</u>	
(none)	
3. <u>Support of SID, OCI Publications, and Briefings</u>	230
4. <u>Support of Office Projects</u>	
a. Soviet Space Research Program	350
b. The Soviet Biological Warfare Program - Offensive and Defensive	50

SECRET/CIA INTERNAL USE ONLY

Division: Fundamental Science  
(Chemistry)

<u>Project Designation</u>	<u>Title and Description</u>
6-20	<p><u>Soviet Research in Vacuum Metallurgy Techniques</u> - to assess Soviet metallurgical research employing vacuum techniques, with emphasis on its application in the melting and casting of alloy steels and titanium.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Sep 58. Manhours - 100.</p>
6-27	<p><u>Soviet Research and Development on Special Lubricants</u> - to determine Soviet progress in the development of lubricants for high temperature conditions.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Nov 58. Manhours - 80.</p>
6-35	<p><u>Significance of Soviet Basic Research in Acetylene Chemistry</u> - to determine lines of research effort, progress, and probable strategic applications of Soviet acetylene research.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Oct 58. Manhours - 100.</p>
6-37	<p><u>Soviet Research on High Temperature Resistant Metals and Alloys</u> - to summarize and assess intelligence on Soviet metallurgical research on high temperature metals and alloys.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Nov 58. Manhours - 100.</p>

SECRET/CIA INTERNAL USE ONLY

Division: Fundamental Science  
(Chemistry)

<u>Project Designation</u>	<u>Title and Description</u>
6-39	<p><u>Soviet Free Radical Research and Its Possible Relation to Rocket Propulsion Systems</u> - to determine the level of Soviet free radical research, and any possible applications or connections to their guided missile developments.</p> <p><u>Remarks:</u> Implementation by external contract. Coordination with GMD. Completion date Sep 58. Manhours - 80.</p>
6-201	<p><u>Soviet Research and Development on Chemical Engineering Unit Operations: Distillation</u> - to assess Soviet capabilities in the important chemical engineering unit operation, distillation, and to ascertain the military and economic significance of current Soviet research in this field.</p> <p><u>Remarks:</u> One of a series of projects directed toward the more important aspects of chemical engineering unit operations. Currently implemented by an external contract. Completion date Jan 59. Manhours - 100.</p>
6-202	<p><u>Soviet Research in Heat Transfer as Applicable to Obtaining Power from Nuclear Reactors</u> - to evaluate Soviet research on materials such as gases, high pressure water, organic chemicals, molten salts or liquid metals and assess the applicability of this research to reactor design.</p> <p><u>Remarks:</u> Implementation by external contract. Coordination with NED. Progress report 31 Jan 59. Completion date Jun 59. Manhours - 100.</p>

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Division: Fundamental Science  
(Chemistry)

<u>Project Designation</u>	<u>Title and Description</u>
6-203	<p><u>Soviet Research and Development of New Electric Batteries - to assess the Soviet capability to develop compact and powerful batteries applicable to weapons systems. This study will be directed toward the currently most promising areas of battery research, viz; the sintered-plate nickel-cadmium, the zinc-silver oxide, the thermal and the ammonia vapor activated batteries. Soviet research on solar batteries also will be included.</u></p> <p><u>Remarks:</u> Support from P&amp;M. Progress report 15 Dec 58. Completion date Jun 59. Manhours: CB - 310; P&amp;M - 125.</p>
6-204	<p><u>Soviet Research on Chemical Engineering Unit Operations: Mass Transfer - to evaluate the significance of Soviet research in a chemical engineering unit operation, mass transfer. Receiving emphasis in this study are absorption, adsorption, crystallization and extraction.</u></p> <p><u>Remarks:</u> Implementation by external contract. Progress report 1 Mar 59. Completion date 2nd quarter FY 60. Manhours - 70.</p>
6-206	<p><u>Soviet Research in Chemical Kinetics - to review Soviet open literature in the field of chemical kinetics with particular attention to research applicable to reaction mechanisms taking place in combustion and flames. Possible or actual participation of research workers in military research or development of particular weapon systems will be studied.</u></p> <p><u>Remarks:</u> Implementation by external contract. Progress report 31 Jan 59. Completion date 1st quarter FY 60. Manhours - 150</p>

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Division: Fundamental Science  
(Chemistry)

<u>Project Designation</u>	<u>Title and Description</u>
6-207	<p><u>Soviet Research on Corrosion of Special Alloys</u> - to determine the extent and accomplishments of Soviet corrosion research on alloy materials of the types employed in nuclear power plants and propulsion reactors, and in aircraft and other specialized applications. Attention will also be given to the evaluation of Soviet general industrial corrosion research and to a determination of Soviet corrosion theory development.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Oct 58. Progress report 30 Apr 58. Completion date 2nd quarter FY 60. Manhours - 100.</p>
6-208	<p><u>Soviet Research on Dielectrics with Electromagnetic Properties Applicable to Nuclear and Guided Missile Fields</u> - to evaluate Soviet basic research on dielectric materials and the electromagnetic properties of dielectrics. It will determine trends, capabilities and possible future courses of action by the Soviets in applied aspects of this research as it pertains to missiles and weapons systems.</p> <p><u>Remarks:</u> To be initiated 1 Aug 58. Coordination with ED and GMD. Progress report 15 Feb 59. Completion date 1st quarter FY 60. Manhours - 150.</p>
6-209	<p><u>Soviet Research in High Temperature Polymers</u> - to survey Soviet basic research in high temperature resin chemistry and evaluate this research to determine its trends in successful application in improved military weapons.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Jul 58. Progress reports 30 Jan 59, 1 Aug 59. Completion date 3rd quarter FY 60. Manhours - 114.</p>

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Division: Fundamental Science  
(Chemistry)

<u>Project Designation</u>	<u>Title and Description</u>
6-210	<p><u>Soviet Research in Hydrogen</u> - to assess Soviet research on the stabilization of liquid hydrogen for use as fuel in ICBM's or space vehicles.</p> <p><u>Remarks:</u> To be initiated 1 Apr 59. Progress report 15 Nov 59. Completion date 4th quarter FY 60. Manhours - 60.</p>
6-211	<p><u>Soviet Research in Ion Exchange Resin Chemistry</u> - to survey Soviet basic chemical research in ion-exchange resin chemistry as applied to nuclear technology and evaluate such research in terms of Soviet capability and trends.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Jul 58. Progress report 15 Mar 59. Completion date 2nd quarter FY 60. Manhours - 114.</p>
6-212	<p><u>Soviet Research in Isotope Separation</u> - to survey methods utilized by the Soviets in the separation of isotopes and an evaluation of the design of equipment employed. The separation of isotopes has been highlighted by the nuclear energy applications involving isotopes of uranium, hydrogen, and lithium. A very valuable by-product of this project is an evaluation of chemical engineering principles which are involved in such separation processes as gaseous diffusion, thermal diffusion, ultracentrifuges and ultrasonics.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Sep 58. Coordination with NED. Progress report 15 Mar 59. Completion date 3rd quarter FY 60. Manhours - 121.</p>

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Division: Fundamental Science  
(Chemistry)

<u>Project Designation</u>	<u>Title and Description</u>
6-213	<p><u>Soviet Metallurgical Research on Low Temperature Effects -</u> to determine the extent and effectiveness of Soviet research toward the elimination of low temperature brittle fracture in metal structures and weldments. The construction of serviceable naval and merchant vessels, ordnance equipment, field vehicles, and industrial machinery subject to low temperature environments is, in large measure, dependent upon the employment of suitable metals and alloys, and upon careful welding technique. Soviet work in this field could reveal developments of importance to the United States.</p> <p><u>Remarks:</u> To be initiated 1 Oct 58. Progress report 15 Mar 59. Completion date 1st quarter FY 60. Manhours - 150.</p>
6-214	<p><u>Soviet Research on Rare Earths - Separation and Utilization -</u> to determine to what extent Soviet open literature reveals recent Soviet rare earth separation technology, and what evidence exists of present utilization of the rare earth metals in the USSR. It is also desired to determine the existence of original Soviet developments in rare earth technology.</p> <p><u>Remarks:</u> To be initiated 1 Dec 58. Progress report 15 May 59. Completion date 2nd quarter FY 60. Manhours - 500.</p>

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Division: Fundamental Science  
(Chemistry)

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
1. <u>Contributions to NIE's</u>	
a. Capabilities and Trends in Soviet Science and Technology	260
b. Soviet Bloc Trade and Aid Policy and Its Impact in Underdeveloped Countries	30
2. <u>Support of NIS Program</u>	
a. Section 76 of NIS's on East Germany and USSR	1870
b. Section 17 of NIS on East Germany	30
3. <u>Support of SID, OCI Publications, and Briefings</u>	390
4. <u>Support of Office Projects</u>	
Soviet Space Research Program	250



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Division: Fundamental Science  
(Geophysics)

<u>Project Designation</u>	<u>Title and Description</u>
6-51	<p><u>Soviet Cloud Physics Research and Weather Control Activities</u> - to study Soviet cloud physics research related to weather control and the probable military and economic significance of this research.</p> <p><u>Remarks:</u> Implementation by external contract. Progress report 15 Mar 59. Completion date Oct 59. Manhours - 100.</p>
6-56	<p><u>Soviet Upper Atmosphere Research</u> - to evaluate recent Soviet astrophysical and geophysical research applicable to artificial earth satellites, rockets and missiles.</p> <p><u>Remarks:</u> External contractor's report will be published first followed by shorter timely reports on current activities. Continuing project. Manhours - 700.</p>
6-58	<p><u>Soviet Capabilities in Permafrost Science</u> - to evaluate Soviet capabilities in permafrost science as related to strategic activities in the Arctic.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Dec 58. Manhours - 100.</p>
6-405	<p><u>Recent Developments in Soviet Geochemistry</u> - to assess current Soviet capabilities in geochemistry with emphasis on recent advances in geochemical theory. The application of theory to practice in such fields as mineral prospecting will be examined.</p> <p><u>Remarks:</u> Implementation by external contract. Progress report 31 Jan 59. Completion date 1st quarter FY 60. Manhours - 150.</p>

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Division: Fundamental Science  
(Geophysics)

<u>Project Designation</u>	<u>Title and Description</u>
6-406	<p><u>Soviet Bloc Developments in Geomagnetic Research - to determine relationships between Soviet geomagnetic research workers and geomagnetic guidance activities.</u></p> <p><u>Remarks:</u> Supplement to CIA/SI 54-57, <u>Soviet Bloc Geomagnetic Research which May be Applicable to Guidance of Missiles and Aircraft.</u> Completion date Mar 59. Manhours - 350.</p>
6-407	<p><u>Current Soviet Progress in Arctic Geophysical Research - to assess current Soviet Arctic geophysical research including current objectives, expeditionary components and areas of operation, changes in program, intentions, capabilities, and significant accomplishments.</u></p> <p><u>Remarks:</u> Completion date Sep 58. Manhours - 200.</p>
6-409	<p><u>Soviet Long-Period Weather Forecasting - to survey and evaluate Soviet long-period weather forecasting research and current methods.</u></p> <p><u>Remarks:</u> Implementation by external contract. Progress report 15 Feb 59. Completion date 1st quarter FY 60. Manhours - 200.</p>
6-410	<p><u>Sino-Soviet Bloc Oceanographic Research Ships - Their Facilities and Capabilities - to evaluate the Sino-Soviet Bloc capability to conduct deep-sea research in the oceans and seas of the world with existing vessels and shipboard facilities. Emphasis will be on oceanographic research as it affects the naval warfare capabilities.</u></p> <p><u>Remarks:</u> Completion date Aug 58. Manhours - 100.</p>

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Division: Fundamental Science  
(Geophysics)

<u>Project Designation</u>	<u>Title and Description</u>
6-413	<p><u>Soviet Numerical Weather Prediction Research</u> - to survey and evaluate Soviet numerical weather prediction research and development, particularly computer forecasting techniques.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Aug 58. Progress report 1 Feb 59. Completion date 1st quarter FY 60. Manhours - 200.</p>
6-414	<p><u>Soviet Astronomical Research Related to Space Flight</u> - to survey and evaluate Soviet research in astronomy, astrophysics, and radio astronomy as related to space flight.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Sep 58. Progress report 15 Mar 59. Completion date 1st quarter FY 60. Manhours - 200.</p>
6-415	<p><u>Soviet Bloc Oceanographic Research during the International Geophysical Year</u> - to assess the program and results of Soviet research for the first 12-month period of the IGY. Areas of research and types of observation will be determined and the significance of the program will be evaluated.</p> <p><u>Remarks:</u> To be initiated 1 Jan 59. Completion date Jun 59. Manhours - 400.</p>
6-416	<p><u>Soviet Geophysical Exploration by Gravimetric Methods</u> - to assess Soviet developments in gravimetric prospecting methods for locating oil and other minerals. Specific emphasis will be placed on Soviet gravimetric instrument developments, especially those for use on airplanes, surface ships, and submarines.</p> <p><u>Remarks:</u> To be initiated 1 Apr 59. Coordination with ORR. Completion date 3rd quarter FY 60. Manhours - 100.</p>

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Division: Fundamental Science  
(Geophysics)

<u>Project Designation</u>	<u>Title and Description</u>
6-417	<u>Current Soviet Progress in Antarctic Geophysical Research - to assess current Soviet Antarctic geophysical research including current objectives, expeditionary components, areas of exploration, type of data collected and military participation in the program.</u>  <u>Remarks:</u> To be initiated 1 Oct 58. Completion date Jun 59. <u>Manhours - 400.</u>

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Division: Fundamental Science  
(Geophysics)

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
1. <u>Contributions to NIE's</u>	
a. Capabilities and Trends in Soviet Science and Technology	100
b. Soviet Capabilities and Probable Courses of Action	75
2. <u>Support of NIS Program</u>	
a. Section 76 of NIS's on East Germany and USSR	500
b. Section 17 of NIS on East Germany	30
3. <u>Support of SID, OCI Publications, and Briefings</u>	360
4. <u>Support of Office Projects</u>	
a. Soviet Space Research Program	200
b. Soviet Nuclear Submarine-Guided Missile Weapon Systems	50
5. <u>Special Periodic Reports</u>	
Bi-Weekly IGY Information Briefs	500

Division: Fundamental Science  
(Physics - Mathematics)

<u>Project Designation</u>	<u>Title and Description</u>
6-61	<p><u>Soviet Research on Acoustic Underwater Detection</u> - to assess the status of Soviet research in low frequency acoustic passive underwater detection similar to the U.S. Lofar system.</p> <p>Remarks: Implementation by external contract. Coordination with ASD and ED. Completion date Oct 58. Manhours - 100.</p>
6-68	<p><u>Significance of Nuclear Physics Research at the Joint Institute for Nuclear Research</u> - to determine the scope of the nuclear physics research program at this institute and evaluate the significant aspects of the research. Both personnel and facilities will also be discussed.</p> <p>Remarks: Implementation by external contract. Coordination with NED. Completion date Sep 58. Manhours - 100.</p>
6-602	<p><u>Soviet Research on Elementary Particle Theory</u> - to evaluate Soviet work on elementary particle theory and assess its significance in the further development of applied aspects of nuclear energy, with attention to the possibility of controlled thermonuclear reactions.</p> <p>Remarks: Implementation by external contract. Coordination with NED. Completion date Dec 58. Manhours - 125.</p>
6-606	<p><u>Soviet High-Energy Particle Accelerators-II</u> - to determine Soviet capabilities and trends in the development of high-energy particle accelerators during the period of 1 Jan 57 to 1 Oct 58. (continued)</p>

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Division: Fundamental Science  
(Physics - Mathematics)

<u>Project Designation</u>	<u>Title and Description</u>
6-606	<p>(continued)</p> <p><u>Remarks:</u> This paper will up-date CIA/SI 6-57, 1 Apr 57. It will be based to a large extent on information from the Conference on High Energy Nuclear Physics, Jun 58, Geneva, Switzerland. To be initiated 15 Oct 58. Completion date Jun 59. Manhours - 300.</p>
6-607	<p><u>Recent Soviet Research in Quantum Field Theory</u> - to determine the progress of Soviet mathematicians and theoretical physicists in developing a quantum field theory that more nearly explains the experimental facts of meson physics; to disclose possible new Soviet mathematical techniques and fundamental principles in quantum field theory; to reveal possible significant indications of Soviet breakthroughs in quantum field theory which are connected with so-called mesic atoms and cold fusion of hydrogen into helium.</p> <p><u>Remarks:</u> Implementation by external contract. Coordination with NED. Completion date Sep 58. Manhours - 125.</p>
6-611	<p><u>Recent Soviet Activities in the Theory and Technology of High-Speed Digital Computers</u> - to evaluate Soviet research and development on high-speed digital computers and to determine Soviet capabilities and intentions for developing new types, effectively utilizing them, and making them in sufficient numbers for overall needs.</p> <p><u>Remarks:</u> A survey of activities in this field since the report, <u>Soviet Bloc Computer Research</u>, CIA/SI 15-56, 23 Nov 56; CIA/SI 15-RS-56, 30 Nov 56. To be initiated 1 Jul 58. Coordination with ED. Progress report 1 Oct 58. Completion date Jan 59. Manhours - 300.</p>

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Division: Fundamental Science  
(Physics - Mathematics)

<u>Project Designation</u>	<u>Title and Description</u>
6-612	<p><u>Soviet Bloc Infrared Research</u> - to assess Soviet Bloc activities and capabilities in infrared science and technology, with particular emphasis on military aspects.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Sep 58. Completion date Mar 59. Manhours - 350.</p>
6-613	<p><u>Soviet Research on Plasma Physics</u> - to evaluate published Soviet work on plasma physics and assess its significance in terms of controlled thermonuclear reactions and related fields.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Jul 58. Coordination with NED. Progress report 31 Mar 59. Completion date 2nd quarter FY 60. Manhours - 100.</p>
6-614	<p><u>Soviet Bloc Research and Development on Infrared Optical Materials</u> - to assess Soviet Bloc research and development on the optical materials used for lenses, prisms, windows, and filters in infrared technology.</p> <p><u>Remarks:</u> Completion date Sep 58. Manhours - 125.</p>
6-615	<p><u>Soviet Research on Switching Theory</u> - to evaluate Soviet research on switching theory and to assess the significance of this research in various applications.</p> <p><u>Remarks:</u> To be initiated 15 Oct 58. Coordination with ED. Completion date Jun 59. Manhours - 200.</p>

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Division: Fundamental Science  
(Physics-Mathematics)

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
1. <u>Contributions to NIE's</u>	
a. Capabilities and Trends in Soviet Science and Technology	90
b. Soviet Capabilities and Probable Courses of Action	170
c. Outlook for East Germany	225
2. <u>Support of NIS Program</u>	
a. Section 76 of NIS's on USSR and East Germany	510
b. Section 17 of NIS on East Germany	30
3. <u>Support of SID, OCI Publications, and Briefings</u>	260
4. <u>Support of Office Projects</u>	
a. Soviet Space Research Program	450
b. Soviet Cybernetics	50

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Division: Fundamental Science  
(Scientific Resources)

<u>Project Designation</u>	<u>Title and Description</u>
4-20	<u>Moscow Higher Technical Institute (Bauman)</u> - to assess the contribution to Soviet science made by this institution primarily in terms of the training it offers to future Soviet scientists and engineers but considering also its research activities.  <u>Remarks:</u> Completion date Nov 58. Manhours - 360.
6-75	<u>Current Trends in Soviet Higher Education</u> - to identify trends taking place in the Soviet system of scientific and technical education during the current five-year plan, and to assess the effects of these trends on scientific and technical manpower.  <u>Remarks:</u> Completion date Oct 58. Manhours - 400.
6-85	<u>Utilization of Engineering and Scientific Manpower in the USSR</u> - to assess the efficiency with which the USSR uses its scientific and engineering manpower.  <u>Remarks:</u> Completion date Sep 58. Manhours - 300.
6-89	<u>Current Trends in Planning, Control, and Organization of Soviet Science</u> - to assess the current broad changes in the organization of Soviet scientific research activities and to determine alterations in the planning and control mechanisms.  <u>Remarks:</u> Completion date Oct 58. Manhours - 350.

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Division: Fundamental Science  
(Scientific Resources)

<u>Project Designation</u>	<u>Title and Description</u>
6-701	<p><u>Scientific Environment in the USSR</u> - to identify and appraise those factors in the environment of Soviet scientists which serve to stimulate and those which deter progress of Soviet science.</p> <p><u>Remarks:</u> Implementation by external contract. Progress reports 30 Nov 58, 31 May 59. Completion date 2nd quarter FY 60. Manhours - 185.</p>
6-702	<p><u>Research in Soviet Higher Educational Institutions: Extent, Control, and Planning</u> - to determine the extent and the efficiency with which Soviet higher educational institutions contribute to the Soviet research and development effort as well as an assessment of the coordination, planning, and control of research in these institutions.</p> <p><u>Remarks:</u> Implementation by external contract. Completion date Sep 58. Manhours - 30.</p>
6-703	<p><u>Strength and Effectiveness of the Chinese Communist Academy of Sciences in Organizing Fundamental Research</u> - to determine such factors as: (1) how research is programmed; (2) how priorities are set; (3) how scientific judgment and political-economic considerations influence planning.</p> <p><u>Remarks:</u> Progress report 1 Nov 58. Completion date Apr 59. Manhours - 605.</p>
6-704	<p><u>Growth of Soviet Scientific Facilities</u> - to establish the pattern of growth of Soviet scientific facilities since 1945 in order to estimate the probable impact of the present facility programs upon the development of Soviet science during the next 15 years.</p> <p><u>Remarks:</u> Completion date Oct 58. Manhours - 500.</p>

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Division: Fundamental Science  
(Scientific Resources)

<u>Project Designation</u>	<u>Title and Description</u>
6-705	<p><u>Role of Soviet Scientists in the Formulation of Party and Governmental Policy</u> - to determine the extent and nature of the influence exerted by Soviet scientists, both individually and collectively, on the decisions of the highest Soviet leaders.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Sep 58. Progress report 1 May 59. Completion date 2nd quarter FY 60. Manhours - 55.</p>
6-706	<p><u>Soviet Education in Chemistry and Chemical Engineering</u> - to determine the types and quality of Soviet education in chemistry and chemical engineering, with emphasis on higher education and graduate study.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 1 Jul 58. Progress report 31 Jan 59. Completion date 1st quarter FY 60. Manhours - 80.</p>
6-707	<p><u>The Quality of Soviet Graduate Programs in Science</u> - to assess the quality of Soviet graduate work in general and in particular fields of science and to forecast prospects for future training of graduate students.</p> <p><u>Remarks:</u> Implementation by external contract. To be initiated 15 Oct 58. Progress report 30 Apr 59. Completion date 3rd quarter FY 61. Manhours - 80.</p>

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Division: Fundamental Science  
(Scientific Resources)

<u>Project Designation</u>	<u>Title and Description</u>
6-708	<p><u>Soviet Progress in Developing Means of Disseminating Scientific and Technical Information - to assess Soviet progress in improving scientific information dissemination through such means as publishing, libraries, abstracting and translating services, professional societies, and conferences.</u></p> <p><u>Remarks:</u> To be initiated 15 Nov 58. Progress report 15 Apr 59. Completion date 1st quarter FY 60. Manhours - 625.</p>
6-709	<p><u>Relocation of Research Facilities in the USSR - to determine the extent and significance of the current redistribution of scientific facilities in the USSR, giving special attention to the development of new scientific centers and their potential.</u></p> <p><u>Remarks:</u> To be initiated 15 Nov 58. Progress report 1 May 59. Completion date 2nd quarter FY 60. Manhours - 500.</p>

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Division: Fundamental Science  
(Scientific Resources)

<u>Other Scheduled Production Activities</u>	<u>Manhour Allocation</u>
1. <u>Contributions to NIE's</u>	
a. Capabilities and Trends in Soviet Science and Technology	445
b. Soviet Capabilities and Probable Courses of Action	100
c. Outlook for East Germany	100
d. Communist China	100
2. <u>Support of NIS Program</u>	
a. Section 70 of NIS's on USSR and East Germany	600
b. Section 17 of NIS on East Germany	50
3. <u>Support of SID, OCI Publications, and Briefings</u>	890
4. <u>Support of Office Projects</u>	
Soviet Space Research Program	800

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Division: Fundamental Science  
(Special Projects)

<u>Project Designation</u>	<u>Title and Description</u>
6-73	<p><u>Quality of Scientific Research in the USSR - to determine the quality of Soviet theoretical and applied scientific research as seen by outstanding U.S. scientists.</u></p> <p><u>Remarks:</u> Implementation by external contract. Progress report 31 Oct 58. Completion date Mar 59. Manhours - 800.</p>
6-92	<p><u>Current Soviet Scientific Research Activities Indicative of Possible Technological Breakthrough - to determine those Soviet activities which are most likely to indicate an impending breakthrough or major advance in Soviet science and technology.</u></p> <p><u>Remarks:</u> PD 6-92 will develop four major areas as outlined below. Total manhours - 1,731.</p> <p><u>(1) Factors Affecting or Associated with the Emergence of a Scientific Breakthrough - to determine the characteristics of scientific breakthroughs, including both the characteristics of the scientists who made them, and of the environmental conditions, through a study of certain major advances in science made during the 20-year period, 1937-1957, for the purpose of (a) developing criteria for the prediction of areas of future scientific breakthroughs, and (b) the delineation of the attributes of the scientists most likely to contribute to future scientific breakthroughs.</u></p> <p><u>Remarks:</u> Completion date Dec 58.</p>

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Division: Fundamental Science  
(Special Projects)

<u>Project Designation</u>	<u>Title and Description</u>
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6-92	(continued)
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(2) Identification of Potential Breakthrough Areas in World Science - to identify the general and specific scientific areas where significant breakthrough achievements can be expected to occur. This effort will be based on an analysis of the scientific literature and the results of interviews with outstanding American scientists.

Remarks: Completion date Jul 58.

(3) Identification of Potential Breakthrough Areas in Soviet Science - to identify those areas of Soviet science where a major advance is imminent. It will stress particularly those frontiers of science which may not be under close surveillance by the substantive divisions of OSI. This study will use the techniques developed in (1) above, and the results of the breakthrough area study of (2) above.

Remarks: Completion date Dec 58.

(4) Identification of Soviet Scientists of Potential Breakthrough Caliber - to identify Soviet scientists who are most likely to make or to contribute to a major advance in science. It will apply the criteria developed in (1) above, to Soviet scientists as derived from Soviet scientific literature, lists of Doctors' and Candidates' dissertations, and other sources.

Remarks: Completion date Aug 58.

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Division: Fundamental Science  
(Special Projects)

<u>Project Designation</u>	<u>Title and Description</u>
6-93	<p><u>Soviet Leadtime from Initial Research to Production - to compare Soviet and U. S. leadtime from initial research to serial production on similar pieces of hardware, and to determine the causes of significant difference in time requirements. The following items will be studied in support of this paper:</u></p> <p>(1) A specific aircraft Completion date Dec 58.</p> <p>(2) A specific guided missile system Completion date Sep 58.</p> <p>(3) A specific aspect of nuclear energy Completion date Dec 58.</p> <p><u>Remarks:</u> Progress report 31 Oct 58. Completion date for a summary report on the overall problem of Soviet leadtime Apr 59. Total manhours - 3,292.</p>
6-97	<p><u>A Survey of Soviet Research in the Field of Non-Linear Mechanics - to assess Soviet activities in the field of non-linear mechanics to determine whether or not they are emphasizing work in a particular scientific field involving the utilization of the theories involved.</u></p> <p><u>Remarks:</u> Progress report 15 Mar 59. Completion date Jun 59. Manhours - 200.</p>

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Division: Fundamental Science  
(Special Projects)

<u>Other Scheduled Production Activities</u>		<u>Manhour Allocation</u>
1.	<u>Contributions to NIE's</u>  (none)	
2.	<u>Support of NIS Program</u> 25X6A	
	a. NIS [REDACTED] Sections 70, 76 and 17	3650
25X6Aized Orient	b. NIS for Switzerland: Sections 70 and 76	1875
	c. NIS [REDACTED] Section 17	500
	d. NIS for India: Sections 70 and 76	352
3.	<u>Support of SID, OCI Publications, and Briefings</u>	48
4.	<u>Support of Office Projects</u>  (none)	

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EXPLANATORY NOTES FOR TABLES

1. Administration includes time spent in division, branch, and staff meetings, personnel matters, etc.
2. Coordination of scientific and technological activities includes liaison time spent in meeting with other components of the intelligence community, and on committees such as SEC, JAEIC, GMIC.
3. Intelligence Maintenance is the general surveillance of information related to the area of responsibility and includes the daily reading, abstracting and filing of information potentially useful but not specifically applicable to production activities in progress.
4. Leave includes annual, sick, military, and administrative leave, and legal holidays\*.
5. Research and Production includes that time allocated toward research projects, National Intelligence Estimates, National Intelligence Surveys, current intelligence support (both to the Scientific Intelligence Digest and the OCI Current Intelligence Digest), briefings, Office projects, and a reserve to lend a degree of flexibility to the program.
6. Research Projects are studies in depth directed toward a specific gap in intelligence and required in the execution of the Long Range Intelligence Research Plan or in discharging Office responsibilities resulting from special assignments.
7. Supervision is time spent by division and branch chiefs in directing and supervising the work of their subordinates and on planning and programming.
8. Support to Collection includes time spent in preparing requirements, collection guides, target briefs, evaluations and assisting in the preparation of a collection plan.
9. Training includes time spent in Office of Training courses, external courses, meetings and conferences of professional societies, field trips of a familiarization nature, and related travel.

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\*Total manhours are calculated on the basis of a 40 hour-52 week year.

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Estimated Distribution of Manhours by Division and Activity

1 July 1958-30 June 1959

Division	NEE		GMD		EED		ASD		MD		FSD		Total	
	MH	%	MH	%	MH	%	MH	%	MH	%	MH	%	MH	%
No. of Professionals	27		28		29		19		16		44		163	
Research and Production	21,520	38	26,080	44	14,585	24	11,040	28	12,020	36	44,190	48	129,435	38
Intell. Maintenance	9,165	16	5,310	9	10,410	17	8,100	20	4,950	15	13,210	14	51,145	15
Support to Collection Coordination of S&T Activities	7,890	14	6,050	11	16,800	28	6,400	16	2,650	8	4,230	5	44,020	13
Supervision	4,455	8	3,090	5	2,995	5	2,700	7	2,545	8	5,195	6	20,980	6
Leave, incl. holidays	2,195	4	4,790	8	890	2	2,400	6	1,670	5	4,680	5	16,625	5
Administration	5,830	11	6,070	11	7,170	12	5,100	13	4,800	14	10,710	12	39,680	12
Training	2,245	4	1,700	3	3,190	5	1,800	5	475	1	3,050	3	12,460	4
	2,860	5	5,150	9	4,280	7	1,900	5	4,170	13	6,255	7	24,615	7
TOTAL MANHOURS	56,160	100	58,240	100	60,320	100	39,520	100	33,280	100	91,520	100	339,040	100

Table I

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Estimated Distribution of Manhours for Research and Production

1 July 1958-30 June 1959

Division No. of Professionals	NED		GMD		ED		ASD		MD		FSD		Total	
	MH	%	MH	%	MH	%	MH	%	MH	%	MH	%	MH	%
Divisional Research Projects	8,300	15	5,800	10	7,970	13	3,400	8	3,825	11	19,590	21	48,885	14
Office Research Projects	570	1	3,700	6	1,950	3	2,900	7	1,700	5	2,400	2	13,220	4
Nat'l Intelligence Estimates	5,900	10	1,740	3	425	1	600	1	300	1	1,845	2	10,810	3
Nat'l Intelligence Surveys	1,120	2	500	1	150	--	800	2	4,150	12	10,000	11	16,720	5
Current Intelligence Support	2,660	5	5,790	10	735	1	1,500	4	360	1	1,440	2	12,485	3
Briefings	600	1	2,400	4	380	1	300	1	600	2	740	1	5,020	2
Special Periodic Reports by ED & FSD	--	--	--	--	1,550	3	--	--	--	--	500	1	2,050	1
Reserve	2,370	4	6,150	10	1,425	2	1,540	5	1,085	4	7,675	8	20,245	6
SUBTOTAL PERCENT		38		44		24		28		36		48		38
SUBTOTAL MANHOURS	21,520		26,080		14,585		11,040		12,020		44,190		129,435	

Table II  
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