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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

*Soviet Reporting Performance
Under the Antarctic Treaty*

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CIA/BGI GM 70-3
March 1970

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~~S-E-C-R-E-T~~CONTENTS

	<u>Page</u>
Introduction	1
Reporting Requirements	3
Reporting Procedures	4
Scientific Reports	5
Information Reports	5
USSR National Reports to SCAR	6
Reporting Inadequacies	6
Lack of Timeliness	6
Omissions and Incompleteness	8
Information Reports	8
USSR National Reports to SCAR	10
Soviet Concealment Policy	11
Conclusions	15

Appendixes

Appendix A. Recommendation I-VI of First Consultative Meeting Under the Antarctic Treaty, July 1961	17
Appendix B. Recommendation II-IV of Second Consultative Meeting Under the Antarctic Treaty, July 1962	19
Appendix C. Recommendation III-I and III-II of Third Consultative Meeting Under the Antarctic Treaty, June 1964	21
Appendix D. Recommendation IV-XXIII of Fourth Consultative Meeting Under the Antarctic Treaty, November 1966	23
Appendix E. Concealment of Affiliations in Scientific Reports	25

Photograph

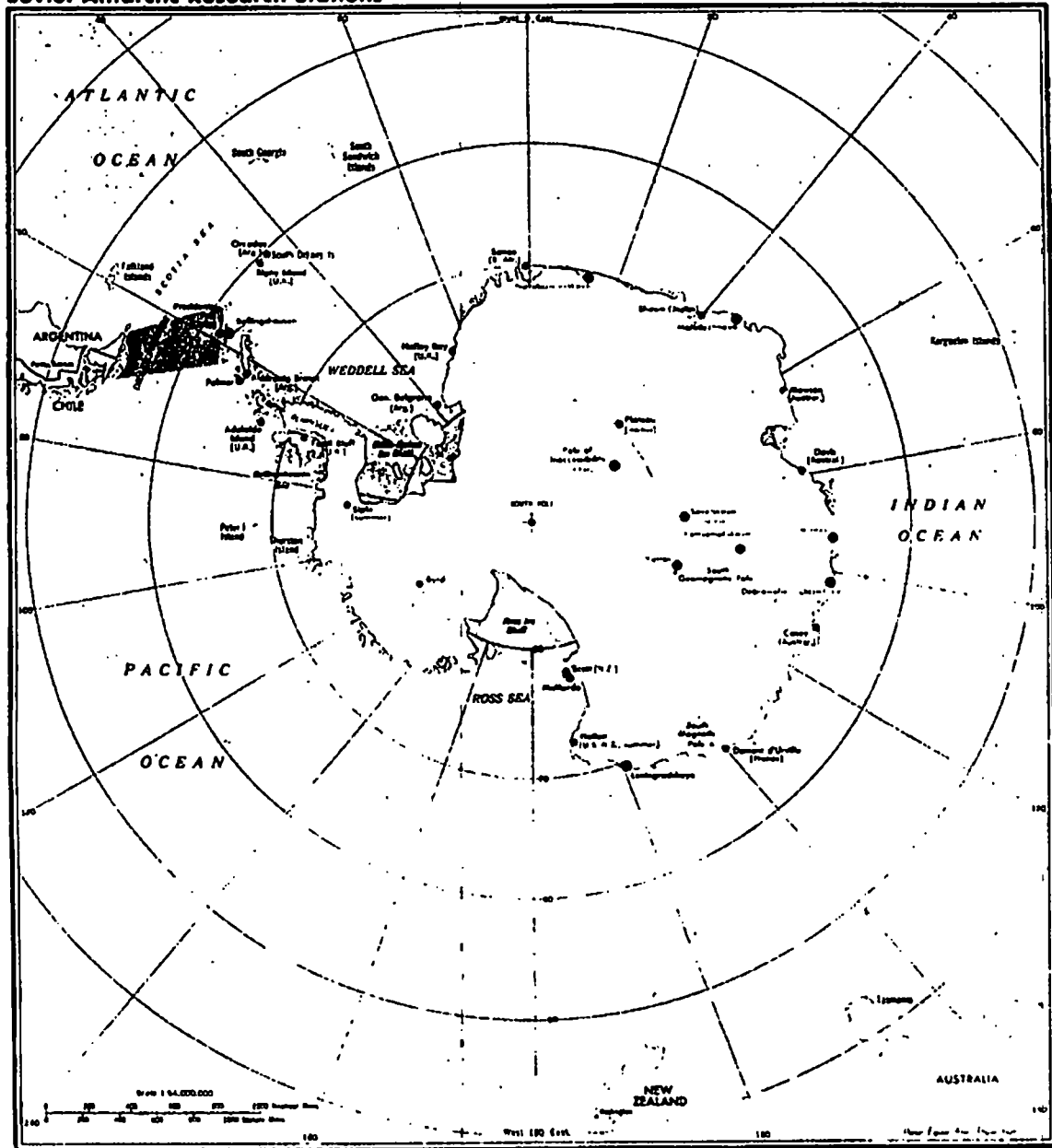
Figure 1. G. Ye. Lazarev conducting gravimetric observations	13
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Map

	<u>Facing Page</u>
Soviet Antarctic Research Stations (77989)	1

~~S-E-C-R-E-T~~

Soviet Antarctic Research Stations



- Soviet station
- U.S. or U.S. cooperative station
- Other selected station

Main operating area of Navy ships on the 13th Soviet Antarctic Expedition
 Shelf ice or glacier tongue

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
March 1970

INTELLIGENCE MEMORANDUM

Soviet Reporting Performance Under the Antarctic TreatyIntroduction

Ten years of cooperative activity involving 12 nations have recently been completed under the Antarctic Treaty. During this period considerable attention has been focused on the manner in which the USSR has fulfilled its treaty obligations. To evaluate the Soviet performance and to assist in operational and policy planning, the United States needs reliable, detailed information about Soviet activities in Antarctica. Thus, Soviet reporting practices are of particular interest.

The Antarctic Treaty requires all signatory countries to exchange advance information on plans, programs, and participants in Antarctic research and to share scientific data. This requirement was a direct outgrowth of concern about Soviet willingness to continue sharing information after the International Geophysical Year (IGY), 1957-58, which had committed participants to such an exchange.

This memorandum assesses Soviet performance in providing operational information required by the treaty. Basic sources are: (1) official Soviet information reports required under the treaty, (2) scientific and news reports published by the Soviets, and (3) reports from Free World personnel who have visited Soviet Antarctic installations.

Note: This memorandum was produced solely by CIA. It was prepared by the Office of Basic and Geographic Intelligence and was coordinated with the Offices of Current Intelligence, National Estimates, and Strategic Research.

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Only a preliminary attempt has been made to assess Soviet performance in data sharing, because of the complexities of the scientific activities, the variety of disciplines involved, the differences in programs of individual countries, and the unpredictable time lags in collection and processing before data can become available at any of the IGY World Data Centers. To date no clear-cut evidence of Soviet refusal to provide Antarctic data has emerged. Study of their other reporting performance, however, reveals the basic dilemma the Soviets face in trying to reconcile pervasive secrecy policies with an obligation to provide detailed data on all aspects of a treaty-controlled activity.

- 2 -

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Reporting Requirements

1. General requirements for exchange of information were contained in the text of the Antarctic Treaty, signed in December 1959. Among other exchange requirements, the treaty provided that ". . . information regarding . . . scientific programs . . . and results . . . shall be exchanged, and each Contracting Party shall give . . . notice in advance of . . . any military personnel or equipment intended to be introduced by it into Antarctica"

2. The First Consultative Meeting of treaty signatories and adhering countries, held in July 1961, specified in detail the reporting obligations of contracting parties. It formulated Recommendation I-VI (see Appendix A), which required the exchange through diplomatic channels among all governments operating in Antarctica of information reports as early in each year as possible and in any case before the end of November. The recommendation stated that each report should include the following information: dates and itineraries of expeditions to and from the continent; occupations of all personnel on all stations and ships; number of personnel in the military services together with the ranks of any officers; names and professional affiliations of all scientific personnel, including those in the military services; program of scientific work and list of principal scientific equipment.

3. In an attempt to improve observance of reporting requirements, Recommendation II-IV (see Appendix B) of the Second Consultative Meeting, in July 1962, reiterated the necessity of providing complete and timely reports. The Third Consultative Meeting, in June 1964, expanded the reporting obligation to include information on airfields and refuges (see Appendix C). At the Fourth Consultative Meeting, in November 1966, the subject of information exchanges was again raised, in response to the United Kingdom view that the information was not being received early enough to be useful to expeditions going into the field. This view was supported by the other parties and expressed in Recommendation IV-XXIII (see Appendix D), which stated that as much of the required information as possible should be exchanged by 31 October, with the balance to be furnished before the end of November.

- 3 -
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~~S-E-C-R-E-T~~Reporting Procedures

4. The Soviets have been publishing a substantial amount of their observational data as well as information about their activities almost from the very beginning of their Antarctic operation. The information they have published on their activities and programs has been more detailed than they normally provide on comparable activities elsewhere. Also, a preliminary survey indicates that the published scientific data are probably as comprehensive and detailed as those released on research and exploration in other areas. This policy can be attributed to a recognition by the USSR of its general commitment to the spirit of the basic objectives and organization of the IGY.

5. The IGY program broadened Antarctic activities from purely nationalistic endeavors with limited scientific scope to a comprehensive, coordinated international scientific enterprise. This change required general adoption of the principle of exchange of information, which was implemented by the establishment of three World Data Centers -- one in the United States, another in Western Europe, and a third in the USSR. Through these centers any research scientist presumably has access to all of the observational data in any field declared by a country to be within its IGY program. The IGY program was voluntary and of limited duration, however, and there was no administrative mechanism to monitor or enforce compliance of any participating country with its commitments.

6. One of the objectives of the Antarctic Treaty was to formalize a continuation of the commitment to exchange information and data on future Antarctic research and to provide, as a minimum, a continuing forum where problems and grievances might be introduced, discussed, and resolved. The consultative meetings provide such a forum at a governmental level. Another forum for the discussion of scientific problems and topics was created by the scientific community in the establishment of the Scientific Committee on Antarctic Research (SCAR) under the International Council of Scientific Union (ICSU). Since SCAR is nongovernmental, however, it lacks the power to define rights and obligations and to specify sanctions for its membership concerning disclosure of information.

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Scientific Reports

7. Before ratification of the Antarctic Treaty in 1960 the most comprehensive sources of information on Soviet Antarctic activities were Soviet Antarctic Expeditions, 1955-1959, by A.V. Nudel'man, and the first seven volumes of the Works of the Soviet Antarctic Expedition, by the Arctic and Antarctic Scientific Research Institute (AANII). The Nudel'man book, published in 1959, describes the first four Soviet Antarctic expeditions (SAE's), whereas the AANII volumes, published between October 1958 and December 1959,* describe only the first two SAE's. Both sources provide considerable information of the type now required by the treaty. They present very detailed histories of the operational and scientific activities of the expeditions as well as various types of personnel lists. Some volumes list only scientists, while others name all personnel; some provide only the individuals' professions -- a few also give their affiliations.

8. Since 1960, publication of the Nudel'man and AANII series has continued with no apparent changes. So far, 52 AANII volumes have been released; the latest, published in 1969, describes the Eleventh SAE (1965-66). A lag of 2 to 5 years normally occurs between an expedition and the appearance of its report.

Information Reports

9. Beginning in 1960, after Soviet ratification of the Antarctic Treaty, the USSR began issuing reports designed to meet treaty requirements. The basic document, an information report submitted through diplomatic channels, purports to give all the required information except descriptions of scientific activities and equipment. Since 1962 Soviet information reports have generally followed the format of Recommendation I-VI, with separate sections approximately corresponding to individual paragraphs in the requirement. The bulk of the reports consists of names of scientists at the individual bases.

* The first volume (unnumbered) was published by the Academy of Sciences and technically is not part of this series. However, it served as the prototype of the volumes that were subsequently published by AANII and numbered consecutively. Minor changes in the format of titles have occurred occasionally. Before 1961, titles did not include the word "Works" (Trudy).

- 5 -
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10. From 1962 through 1966, several months after each expedition's austral summer program, the USSR published a supplementary information report that listed the main accomplishments of the expedition and showed changes in activities and personnel assignments made since the earlier information report. The supplements are valuable because they are definitive and correct any inaccuracies in the necessarily tentative originals.

USSR National Reports to SCAR

11. The annual USSR National Report to SCAR, as well as similar reports submitted by national Antarctic committees of other participating countries, is part of an international effort to further the coordination of scientific activities in Antarctica. Each report contains a detailed list of the scientific observations made and the instrumentation used in the previous year's program. A much less detailed section summarizes planned observations for the coming year. The first SCAR report was published in 1959. Beginning with the Eighth SAE (1962-63), each annual information report has cited the latest SCAR report for information on the expedition's scientific activities as required in Recommendation I-VI.

12. Use of the SCAR reports to supply information required in the information reports is not entirely satisfactory, since the information on scientific programs and equipment is required by agreement between governments and SCAR is an independent scientific organization that cannot be held responsible to governments. All countries except the USSR have carefully differentiated between the functions of SCAR and the functions of national governments.

Reporting Inadequacies

Lack of Timeliness

13. In several respects Soviet reporting has not met the treaty obligations. The information reports have consistently been submitted later than the agreed date (30 November of the year in which the Antarctic season begins).* This loss of timeliness frustrates the stated

* Some other treaty signatories have also had difficulties in meeting the deadline, but the USSR has been one of the most delinquent.

- 6 -
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treaty objective of facilitating cooperation between national programs. It also prevents other countries from responding quickly -- by inspection, protest, or other activity -- to anything suspicious found in a Soviet report. Listed below are the submission dates for each of the Soviet information reports and supplementary information reports issued since the USSR ratified the treaty:

<u>Expedition</u>	<u>Information Report</u>	<u>Supplement</u>
Sixth SAE (1960-61)	14 Dec 1960	None
Seventh SAE (1961-62)	20 Jan 1962	6 Sep 1962
Eighth SAE (1962-63)	11 Jan 1963	15 Oct 1963
Ninth SAE (1963-64)	16 Dec 1963	11 Aug 1964
Tenth SAE (1964-65)	9 Jan 1965	11 Aug 1965
Eleventh SAE (1965-66)	20 Dec 1965	13 Aug 1966
Twelfth SAE (1966-67)	9 Jan 1967	None
Thirteenth SAE (1967-68)	29 Jan 1968	None
Fourteenth SAE (1968-69)	26 Dec 1968	None
Fifteenth SAE (1969-70)	19 Dec 1969	

This tabulation shows that recommendations of the Second (July 1962) and Fourth (November 1966) Consultative Meetings reaffirming the 30 November due date produced no effect on the publication dates of Soviet reports. Neither was any effect produced by a 1966 recommendation to provide an advance report with partial information by 31 October. Beginning in 1962, after the First Consultative Meeting, supplementary information reports were issued for 5 consecutive years, through the Eleventh SAE. For the past three SAE's, however, their publication has been suspended without explanation, resulting in a serious loss of information. Curiously, this reduction in reporting immediately followed the Fourth Consultative Meeting, at which the USSR supported the recommendation to increase reporting responsibilities.

14. The USSR's use of SCAR reports to provide scientific information about its expeditions has aggravated the lack of timeliness in its reporting. Analysis of the USSR's 10th SCAR report, cited in the information report on the Fourteenth SAE, serves to illustrate this deficiency. Although the information report covered the Fourteenth SAE (1968-69), the 10th SCAR report was a "summary of scientific work completed in the Antarctic

- 7 -

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during 1967 [Twelfth SAE], in the 1967-1968 summer season [Thirteenth SAE], and plans for 1969 [Fourteenth SAE]." The main body of the SCAR report was devoted to the Twelfth SAE, for which it described each program and listed the observation schedule and equipment. No information was given on the station observation program of the Thirteenth SAE, although the field programs and oceanographic activities of the 1967-68 summer season were described in some detail. The portion of the report dealing with the Fourteenth SAE consisted only of a brief summary of the scientific fields in which research was to be performed at each station. The bulk of the report thus consisted of a comprehensive description of the 1967 research program, in sufficient detail to meet the treaty requirements but 2 years out of date.

15. The information report on the Fifteenth SAE (1969-70) repeated the citation of the 10th SCAR report for information on scientific activities and equipment. It stated "see report in SCAR No. 10 on measures planned by the Soviet Antarctic Expedition in 1969-1971, and on the scientific program carried out in 1969." As described above, however, the 10th SCAR report contained only a brief summary of activities planned for 1969 and included no information on plans for 1970 and 1971. For the Fifteenth SAE, then, the Soviets not only cited a source that was essentially 3 years out of date but also gave an erroneous description of its contents. This deficiency was partially corrected, however, within a month after publication of the information report on the Fifteenth SAE, when the 11th SCAR report was released. It contained a "summary of the scientific program completed in the Antarctic in 1968 [Thirteenth SAE], in the 1968-1969 summer season [Fourteenth SAE], and plans for 1970 [Fifteenth SAE]."

Omissions and Incompleteness

Information Reports

16. Probably the most significant example of Soviet noncompliance with reporting requirements has been the omission of information on "seasonal" scientists from the last three information reports. The reports on the Seventh through the Twelfth SAE's contained a section listing the names, occupations, and affiliations of all

- 8 -
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scientists who participated in the austral summer program, in addition to a section listing those who wintered over. The report on the Thirteenth SAE, the first to omit this information, merely stated that 139 seasonal scientists worked aboard the four expedition ships and on the continent. As the Thirteenth SAE was also the first to use Soviet Navy hydrographic vessels, and more than half of the seasonal scientists were aboard these ships, identities may have been concealed to avoid disclosure of the precise nature of the military participation. No scientist has ever been listed in an information report with an identified military affiliation.

17. Reports for the Thirteenth, Fourteenth, and Fifteenth SAE's also omitted the itineraries of expedition ships. Previous reports had consistently provided this information as required by Recommendation I-VI. This extraordinary Soviet effort not to reveal the association of military personnel and equipment with their Antarctic activities extends even further. For example, every Soviet information report has categorically stated that no ships and bases of the SAE possess any armaments. All other countries, in their information reports, have admitted to possessing small arms, and occasionally other weapons, primarily for taking seals.

18. Other sections of the Soviet information reports are less complete than the treaty seems to require and are certainly less detailed than corresponding sections of most countries' reports. Soviet reporting on airfields and unoccupied refuges illustrates this point. The requirements for exchange of this information were formulated in June 1964 (see Appendix C). In August 1964 the USSR distributed a supplement to its information report on the Ninth SAE that included comprehensive information on these facilities. Since 1964 the information report on each SAE has disposed of these requirements by simply stating that no changes have occurred. Changes are known to have occurred, however. Various Soviet maps show changes in airfield dimensions and alignments, and the US exchange scientist at Molodezhnaya in 1968-69 reported that a new airfield was under construction at that station. Also, at least two of the unoccupied refuges (Pole of Inaccessibility and Lazarev) have been visited by the Soviets since 1964. By way of

- 9 -
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contrast, the US information reports describe in detail the current status of US airfields and refuges for each reporting year.

19. Soviet response to the reporting requirement on communications facilities is also incomplete, but this may simply be the result of a very narrow interpretation of Recommendation I-VI, which does not spell out the specific types of information to be exchanged. Only the addition of new transmitting equipment at each station has been reported. To determine the current transmitting capacity at each station one must add up the units reported in all the information reports. Even if this were done, and it yielded a correct total (which it does not), the information is not sufficient to be useful to other radio operators on the continent. The US information report, in contrast, contains a complete description of transmitters, receivers, transceivers, antennas, call signs, and circuits maintained at each station.

USSR National Reports to SCAR

20. The SCAR reports, besides being improper instruments for providing information required by the treaty and also being out of date, have several deficiencies in content. Because of the scanty information they provide on current and future activities, very little is known about at least one new Soviet research program in the Antarctic. The 10th SCAR report stated that atmospheric probings by rockets were to begin at Molodezhnaya in 1969, and news reports have confirmed that launchings were begun in May of that year. The 11th SCAR report's only reference to this activity was a statement that launchings would be conducted in 1970. No official information is available that describes this research program or lists the equipment involved.

21. Three other research programs have similarly never been adequately described in the SCAR report, although they have been underway for a sufficiently long time to be included in the detailed section of the report. For example, the 10th SCAR report stated that geodetic observations of artificial satellites were to be carried out at Vostok, Mirnyy, and Molodezhnaya in 1969. The 11th SCAR report, in the section that normally provides detailed descriptions of each scientific program and its

- 10 -

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instruments, merely stated that simultaneous observations of satellites were being carried out using special cameras. This description is remarkable for its lack of detail and especially for the failure to identify the type of camera used, since knowledge of the camera is the key to understanding the program. The 11th SCAR report did not mention the two additional cameras that were emplaced at Novolazarevskaya and Bellingshausen in late 1969.

22. In a similar case the ninth, 10th, and 11th SCAR reports stated that radar observations of meteor traces would be conducted at Molodezhnaya in 1968, 1969, and 1970, respectively.

[redacted] an active program in this field has been underway, at least since 1968, but Soviet reports have not yet described the program. Given the time lag in detailed reporting to SCAR, the 10th SCAR report would not be expected to include this information, but omission of the program from the detailed section of the 11th SCAR report is exceptional even by Soviet standards. This case is particularly noteworthy because a Western scientist at Molodezhnaya reported that station personnel were noticeably reluctant to discuss the program with him.

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23. The final example also concerns a major research program at Molodezhnaya. Each of the last seven SCAR reports has stated that the following year's program at Mirnyy, Vostok, and Molodezhnaya would include study of radio-wave propagation from terrestrial stations. Examination of the appropriate succeeding reports reveals, however, that the Vostok and Mirnyy programs always have been elaborately described, while the larger program at Molodezhnaya has been omitted from the section of the report that gives program details.

Soviet Concealment Policy

24. There is no doubt that some aspects of Soviet domestic security policy are being extended to Antarctic activities and reporting. One of the objectives seems to be to conceal the identities or affiliations of expedition personnel who have been or are associated with sensitive organizations or activities. Types of concealment include omitting names, listing names without affiliations, and showing false affiliations. Whether

- 11 -

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this policy is designed to disguise the extension of sensitive domestic programs to Antarctica or simply to avoid the embarrassment of disclosing military affiliations cannot always be established. The Soviets are unlikely to admit to any military participation in their Antarctic programs as long as they expect to benefit from their recurrent propaganda claim that the USSR has taken a leading role in promoting peaceful uses of the continent while the imperialist powers have always maintained strong military and nationalistic interests in the area.

25. Activities that have been most closely associated with concealment in Antarctic reporting are mapping and charting, geodesy, gravimetry, missile operations, geology, mineral prospecting, and medicine. The association of military-affiliated scientists with some of these activities, while certainly no violation of the treaty, does identify fields of Soviet military interest in Antarctic research. The reason for such interest in some fields is not clear, but data on geodetic gravimetry and satellite geodesy almost certainly would contribute to refinement of the Soviet world geodetic system and thus improve worldwide missile targeting. Increased military interest in geodesy seems to be reaffirmed by the recent installation of optical tracking cameras at five Soviet stations -- believed to be related to a program for international cooperation in geodetic gravimetry and satellite geodesy that is being proposed in part by a lieutenant colonel of the Military Topographic Administration.

26. The Soviet concealment policy has persisted since the first SAE in 1955-56, when the USSR failed to provide the affiliations of the entire marine portion of the expedition, which included 10 Navy hydrographers. Even the names of five of these hydrographers were omitted from published Soviet rosters. Reports on the Second SAE (1956-57) did not give affiliations of scientists on the continental part of the expedition, which is known to have included several military personnel. One of the military men (see Figure 1)

proposed the program of international cooperation referred to above. Most of the geologists on the marine portion of the Second SAE were also listed without affiliation.

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On the marine portion of the Third SAE, 1957-58, affiliations were omitted for 36 scientists, including most members of the mapping detachments and the four members of a rocket detachment that launched 3 dozen high-altitude geophysical rockets from the ship 'Ob'. This program also occasioned the first conspicuous concealment of activity; the thwarting of attempts by two US visiting scientists to observe the initial launching at Mirny.

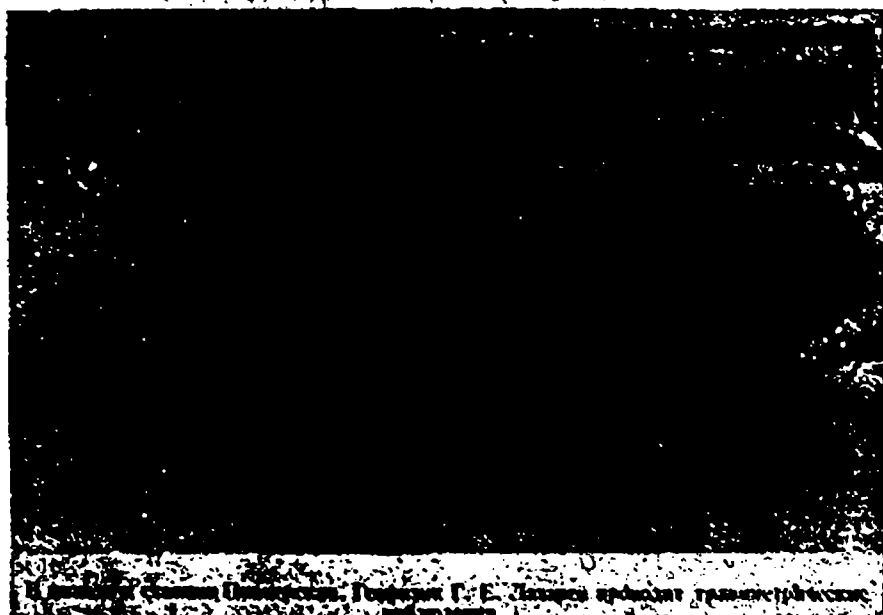


Figure 1. G. Ye. Lazarev, identified as a geophysicist, conducting gravimetric observations on traverse to Pionerskaya (source: Nudel'man, A.V. Soviet Antarctic Expeditions, 1955-1959, p. 61).

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В походе в станцию Понорская Геофизик Г. Я. Лазарев проводит наблюдения

Figure 1. G. Ye. Lazarev, identified as a geophysicist, conducting gravimetric observations on traverse to Pionerskaya (source: Nudel'man, A.V. Soviet Antarctic Expeditions, 1955-1959, p. 61).

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27. Although the Soviets were under no moral or legal obligation to disclose affiliations before signing the Antarctic Treaty, the evidence of Soviet concealment was a factor in including the obligation to provide names and affiliations of scientists within the treaty framework. Despite this inclusion, Soviet pre-treaty methods of selective concealment have continued into the post-treaty period (see Appendix E for details). In at least two instances important participants were excluded entirely from the official information reports: one of these was a Navy hydrographer and the other a translator and assistant expedition leader whose affiliation is still unknown. The most blatant omission was the exclusion of the names of summer scientific personnel on the last three expeditions, including scientists on the two Navy hydrographic ships that surveyed Drake Passage and the waters around the tip of the Antarctic Peninsula. In a number of cases the information reports have included the names of military personnel on the expeditions but have given them false affiliations with civilian organizations. With the elimination of the supplementary information reports for the last three SAE's, the Soviets may be creating a new loophole by which they can evade fulfilling their treaty obligations, since there is now no accounting for the final list of expedition members or corrected ship itineraries.

28. The Soviets are also continuing the pre-treaty practice of not disclosing affiliations of some authors of research reports: they merely describe them as members of the SAE of their participation. [redacted]

[redacted] at least six of the authors whose affiliations were most consistently omitted were members of the military services at the time of their work in the Antarctic. This discovery is one more bit of evidence that the entire policy of disguising and omitting affiliations is designed to conceal the participation of military personnel on Soviet Antarctic expeditions. The conclusion is not necessarily invalidated by occasional omissions of affiliations of non-military scientists if it is assumed that the success of such a concealment policy would require the introduction of an element of randomness into the pattern. Neither is this hypothesis inconsistent with the fact that all expedition scientists are given an affiliation in the

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information reports, since the latter are not distributed to the Soviet scientific community where questions might be raised about false biographic information.

Conclusions

29. The Antarctic Treaty requires that all signatory countries exchange an annual information report containing detailed and specific information about their activities on the sixth continent and that they publish their scientific findings and observations. The USSR, like all other countries active in Antarctica, has generally attempted to meet the first of these requirements; also, preliminary impressions indicate that the Soviet scientific data published on the Antarctic are probably as comprehensive and detailed as those released on their research and exploration elsewhere.

30. Soviet reports on the Antarctic do, however, fail to meet several treaty requirements. Deficiencies in the official information reports include failure to meet deadlines, furnishing of obsolete information, and deliberate concealment of information on military participation in SAE's. Discontinuance of the supplementary reports has created a new reporting loophole. The scientific reports appear to be subject to the same concealment policies as the information reports and are even more obsolete. There is little doubt that in facing the dilemma of reconciling their secrecy policy with their treaty obligation, the Soviets still favor the former, presumably either hoping that the concealment will remain undiscovered or counting on the inertia of the other signatories to make no issue if it is discovered. In their literature the Soviets suggest that they may be counting on the existence of the inspection provisions of the treaty -- which they have never exercised -- and on published US inspection reports as proof that they are adhering to the peaceful objectives of the treaty.

31. Satisfactory compliance with treaty reporting requirements has not been assured by a precise definition of topics on which information is to be exchanged. The treaty may need, in addition, both a standard by which to measure the adequacy of compliance and a

- 15 -

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procedural mechanism by which noncompliance questions may be raised, judged, and corrected without escalating the review action into an automatic implication of treaty violation.

- 16 -
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APPENDIX A

RECOMMENDATION I-VI OF FIRST CONSULTATIVE MEETING
UNDER THE ANTARCTIC TREATY, JULY 1961

The Representatives recommend to their Governments that information furnished in accordance with Article VII paragraph 5 should be exchanged between Governments through diplomatic channels as early in each year as possible, and in any case before the end of November each year, and should include -

(1) the names, types, numbers, descriptions and armaments of ships, aircraft and other vehicles, introduced, or to be introduced into Antarctica, and information on military equipment, if any, and its location in Antarctica;

(2) dates of expeditions leaving for, and arriving in, Antarctica, duration of stay, itinerary to and from Antarctica and routes followed within Antarctica;

(3) the names, location and date of opening of the Party's bases and subsidiary stations established or planned to be established in Antarctica, listed according to whether they are for summer and/or winter operations;

(4) the names of the officers in charge of each of these bases, subsidiary stations, ships and aircraft; the number and occupations and specialisation of personnel (including any designated by other governments), who are or will be stationed at each of these bases and subsidiary stations and on board these ships and aircraft, including the number of personnel who are members of the military services together with the rank of any officers and the names and professional affiliation of personnel engaged in scientific activities;

- 17 -

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- (5) the number and types of armaments possessed by personnel;
- (6) the programme of work including scientific investigation, being done and planned at each of these bases and subsidiary stations and on board those ships and aircraft; and also the area or areas of operation to be covered by such programme;
- (7) principal scientific equipment;
- (8) transportation facilities and communication equipment for use within Antarctica;
- (9) facilities for rendering assistance;
- (10) notice of any expeditions to Antarctica not organised by the Party but organised, in, or proceeding from, the Party's territory.

18

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APPENDIX B

**RECOMMENDATION II-IV OF SECOND CONSULTATIVE MEETING
UNDER THE ANTARCTIC TREATY, JULY 1962**

In accordance with Article VII paragraph 5 of the Antarctic Treaty, the Representatives recommend to their Governments that they should endeavour to furnish prompt and full information regarding their Antarctic activities as listed in Recommendation I-VI of the First Consultative Meeting, and within the time limits indicated in that Recommendation.

- 19 -
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APPENDIX C

RECOMMENDATION III-I OF THIRD CONSULTATIVE MEETING
UNDER THE ANTARCTIC TREATY, JUNE 1964Information on Facilities for
the Landing of Aircraft

The Representatives, taking into account Recommendation I-VI (8) of the First Consultative Meeting, recommend to their Governments that they exchange, within the framework of Recommendation I-VI (8), information on airfield facilities in the Antarctic Treaty Area. This information should include particulars of location, operating conditions and limitations, radio aids to navigation, facilities for radio communications and instrument landing, and be in detail sufficient to enable an aircraft to make a safe landing.

RECOMMENDATION III-II OF THIRD CONSULTATIVE MEETING
UNDER THE ANTARCTIC TREATY, JUNE 1964Notification of Unoccupied Refuges

1. The Representatives recommend to their Governments that they should exchange through diplomatic channels, before the end of November each year, lists of all unoccupied buildings, huts or caches (hereinafter referred to as refuges) maintained by them in the Treaty Area in a condition suitable for use in emergencies.

2. Such lists should include.

- i) The name and position of each refuge.
- ii) A description of its location.
- iii) The date on which it was established.
- iv) The approximate date on which it was last examined.

- 21 -

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- v) An estimate of the available accommodation, facilities, food, fuel and supplies of other kinds.

Any changes should be reported before the end of June of the following year.

3. The Representatives further recommend that Governments whose expeditions use any refuge should report as rapidly as possible on any such use. Such Governments should also furnish an estimate of the amount of supplies which remain and a report about the condition of the refuge after use; in addition they should:

- (a) Ensure that supplies available at these refuges are used only under emergency conditions.
- (b) To the extent possible, and as early as possible, replenish the supplies consumed and inform the authorities who maintain the refuge of the action taken.

- 22 -
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APPENDIX D

RECOMMENDATION IV-XXIII OF FOURTH CONSULTATIVE MEETING
UNDER THE ANTARCTIC TREATY, NOVEMBER 1966

The Representatives recommend to their Governments that they exchange through diplomatic channels not later than October 31st of each year, the information specified in as many as possible of the categories in Recommendations I-VI, III-I and III-II, the balance to be furnished as soon as possible thereafter and in any case before the end of November.

- 23 -
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APPENDIX E

CONCEALMENT OF AFFILIATIONS IN SCIENTIFIC REPORTS

Remarkably, all scientists ever listed in the Soviet information reports have been identified as members of civilian organizations. Furthermore, the report on the Sixth SAE, the first report distributed under the treaty, stated that "there are no military personnel at any of the Soviet Antarctic stations or on the seasonal staff of the expedition." The only military participation ever described in an information report occurred during the Thirteenth SAE when two Navy ships were used for hydrographic surveying in Drake Passage and around the Antarctic Peninsula. Even in this case, however, the scientists aboard the vessels were not identified, and thus participation by military scientists was not acknowledged.

In spite of claims of exclusive civilian participation, there has been evidence of the presence of military scientists on Soviet Antarctic expeditions. For example, Georgiy Lazarev (see Figure 1) a member of the Second and Sixth SAE's, admitted in confidence to a US scientist that he and several others on the sixth expedition were regular military officers but that they had been told to represent themselves as reservists.

_____ he was and is attached to the military Topographic Administration of the Army. His leadership in launching the Antarctic's only geodetic gravimetry program and in continuing promotion of an ambitious Antarctic geodetic satellite and gravimetric program indicates a military interest in developing a world geodetic system in general support of ICBM operations.

In an attempt to learn whether the concealment of military affiliations has been continued in postexpedition literature, a detailed analysis was undertaken of two Soviet publications that contain information on affiliations of Antarctic scientists and of a third that lists SAE participants but no affiliations. These publications are (1) the periodical Information Bulletin, Soviet Antarctic Expedition, (2) the serial Works of the

- 25 -

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Soviet Antarctic Expedition, and (3) four books by A.V. Nudel'man, each entitled Soviet Antarctic Expeditions [Dates].

The Information Bulletin, Soviet Antarctic Expedition, is the primary Soviet journal for short articles on Antarctic research. At the head of each article, with the author's name and scientific specialty, is usually listed his professional affiliation. A military affiliation has been attributed to the author of only one of the approximately 900 Bulletin articles published to date.* For about 16 percent of the articles, instead of giving the author's affiliation the Bulletin merely stated the number of the SAE in which he participated. With two exceptions since 1961, each of the scientists in this latter category has already been provided with an affiliation in the official information report, which leads to the question of why the Bulletin should give this exceptional treatment.

For analytical purposes the authors of Bulletin articles were divided into six categories: (1) authors who have always been listed in the Bulletin with an affiliation (237 persons, 629 articles), (2) authors whose affiliations have been provided with two or more articles and omitted with only one (18 persons, 136 articles), (3) authors whose affiliations were provided with one article and omitted with one (11 persons, 22 articles), (4) authors who published once, with no affiliation (42 persons, 42 articles), (5) authors whose affiliations were provided with one or more articles and omitted with two or more (11 persons, 31 articles without affiliation, 22 with affiliation), and (6) authors who have published two or more times, with no affiliations (16 persons, 46 articles).

At least two conclusions can be drawn from this initial sorting of authors. The first is that the omission of a scientist's affiliation probably does not necessarily indicate concealment, since several

* I.P. Kucherov was listed in Bulletin 31, 1961, as Chief, Central Map Production of the Navy, and head of the Hydrographic Division of the First SAE. He is the only Soviet Antarctic scientist whose military affiliation is known to have appeared in a Soviet Antarctic publication.

- 26 -
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authors (category 2 above) have published as many as 20 articles of which only one has not shown the author's affiliation. This category seems to indicate that there is an element of randomness in these omissions. The second conclusion is that the omissions are not entirely random, since affiliations are always or nearly always omitted for some authors (categories 5 and 6 above).

The pattern of omissions cannot be explained with certainty, but a reasonable hypothesis is that the military affiliations of some of the scientists are concealed by design. This explanation is not necessarily invalidated by occasional omissions of affiliations of nonmilitary scientists if it is assumed that the success of such a concealment policy would require the introduction of an element of randomness into the pattern. Neither is this hypothesis inconsistent with the fact that all expedition scientists are given an affiliation in the information report, since the latter document is not distributed to the scientific community where questions might be raised about misleading biographical information.

A surprising disproportion of the authors who published without an affiliation are known to be physicians. The average occurrence of affiliation omissions for nonmedical authors is 13 percent (121 of 897 articles) compared to 87 percent (27 of 31 articles) for authors of medical articles. Affiliations have been given for only two of the 11 physicians who have published in the Bulletin.

This unusual treatment of physicians by the Bulletin stimulated further biographic checks of the 11 physicians mentioned above and of a sample who have not published their Antarctic work. Of the nine who published in the Bulletin without affiliation, evidence was found that four were members of the Military Medical Academy, imeni S.M. Kirov, in Leningrad. For example, R.K. Kaluzhenko, a physician at Vostok in 1966, published five articles in various medical journals from 1955 to 1964 in which he was described as a lieutenant in the medical service and a faculty member at the Military Medical Academy. Three other Soviet Antarctic physicians who have never published in the Bulletin have been similarly identified with the Military Medical Academy before or during their Antarctic tours. Six of these seven military physicians

- 27 -

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had been listed in the information report as AANII employees. The seventh worked on the Fifth SAE, which preceded the issuance of information reports.

Of the nonmedical scientists listed in the Bulletin without affiliation, only two authors could definitely be shown to have concealed military affiliations. The two are Georgiy Lazarev, mentioned earlier, who was a geodesist on the Second and Sixth SAE's, and S.S. Chikovskiy, a hydrographer on the Tenth and Thirteenth SAE's. It is interesting to note that Lazarev is one of only two persons who have published as many as five articles in the Bulletin without a stated affiliation. He was identified in four other articles as an employee of Moscow State University and in one as affiliated with an institute under the Academy of Sciences. The information report on the Sixth SAE did not provide affiliations of scientists.

Chikovskiy published three articles in the Bulletin without giving his affiliation and one stating that he was a member of AANII. On his second Antarctic visit he admitted to an American that he had been a career military hydrographer but was a university student at the time he left on the expedition. According to this testimony he would have been a Navy hydrographer during his tour on the Tenth SAE. The information report on the Thirteenth SAE stated that Chikovskiy worked for AANII. Chikovskiy and Ye. I. Ignatov coauthored a Bulletin article that did not provide the affiliation of either scientist but instead stated that they were members of the Tenth SAE. It may be significant that neither of these men appears in the information report on the Tenth SAE. These are the only known occasions when a scientist was excluded from both the regular and supplemental information reports on an SAE.

Of the Soviet Antarctic military personnel detected in this exercise, three were among the 16 authors in category 6 above, three among the 11 authors in category 5, none among the 71 authors in categories 2, 3 and 4, and one among the 237 persons in category 1. In addition, evidence was found that at least 20 military personnel were among the Soviet Antarctic personnel who have never published in the Bulletin. Except for the three physicians mentioned on page 27, the latter group all participated in the early SAE's that were

- 28 -
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conducted before the Antarctic Treaty and before information reports were issued. Most of these military scientists participated in hydrographic or continental mapping surveys.

A similar analysis of the serial publication Works of the Soviet Antarctic Expedition, published by AANII, revealed that it follows a policy similar to that of the Bulletin of providing affiliations for only selected members of the expeditions. As noted on page 5, this series of reports contains lists of the personnel on each of the SAE's. Affiliations are not always given, however, and there appears to be a trend toward reducing the amount of personnel information in later volumes.

For the continental portions of expeditions the AANII reports have included apparently complete personnel lists, but they have omitted affiliations of the members of all except one expedition. Even Chikovskiy and Ignatov were included in Volume 49's personnel list on the Tenth SAE after having been omitted from the information report on that expedition. Affiliations of the continental scientists were given only in Volume 1, which provided this information for all but two of the 29 scientists on the First SAE. The two whose affiliations were not given were members of the geological prospecting detachment.

For the marine parts of SAE's 1 through 11 the volumes have also consistently included lists of scientific personnel, and in contrast to descriptions of the continental party they have normally provided the affiliations of scientists. Wherever affiliations were not given the scientists were described as members of the SAE. Tabulated below are the numbers of scientists listed in the AANII reports on SAE's 1 through 11, together with the numbers for whom affiliations are included.

	Soviet Antarctic Expedition										
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
Scientists listed	48	67	93	21	9	8	10	15	12	11	22
Affiliations shown	0	55	57	21	9	8	10	11	10	0	0

- 29 -

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A systematic plan seems to be the basis for omitting affiliations in the AANII volumes as well as the Bulletins. For example, the report on the first marine expedition gives no affiliations, thus concealing the fact, [redacted] that the entire 10-man hydrographic detachment was composed of personnel from the Navy Hydrographic Directorate. To compound the concealment, five of the 10 Navy hydrographers are omitted entirely from the roster [redacted]

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The practice, followed in four of the AANII reports, of omitting the affiliations of only selected scientists is apparently designed to conceal sensitive identities while at the same time providing an image of releasing detailed information. All individuals without affiliations are probably not military personnel, but all military personnel are apparently included in the part of the list that omits affiliations. Only one military individual, a hydrographer, is known to have participated in these four marine expeditions, and he is among those with no affiliation named. Scientists whose affiliations were omitted generally were involved in work of specific interest to the Soviet military, mostly in mapping and related sciences. For example, the scientists on the Eighth and Ninth SAE's for whom affiliations were not provided were all hydrographers, comprising the entire hydrographic detachment of each expedition. The official information reports claimed that these scientists were all from the Main Administration of the Northern Sea Route, a civilian agency.

On the marine portion of the Third SAE, eight of the 36 scientists for whom affiliations were not given were in the 11-man hydrographic detachment and 16 were among the 19 members of the geodetic and aerial photography detachments. The entire four-man meteorological rocket detachment was also listed without affiliations. The reason for the latter omission is suggested by an intelligence report that indicates that this group comprised personnel from a missile plant of the Ministry of Defense.

Of the 12 scientists listed without affiliations in the AANII volume on the marine portion of the Second SAE, half were members of the 10-man geological detachment.

- 30 -
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while the rest were dispersed among the other 57 members of the expedition. The geological group's activities included echo sounding and seismic surveys that are standard scientific activities but have military application.

Four books by A.V. Nudel'man constitute the only other systematic source of information on Soviet Antarctic Expeditions. They are: Soviet Antarctic Expeditions, 1955-1959 (published in 1959), Soviet Antarctic Expeditions, 1958-1960 (published in 1960), Soviet Antarctic Expeditions, 1959-1961 (published in 1962), and Soviet Antarctic Expeditions, 1961-1963 (published in 1965). These reports summarize the operations and list the personnel on the first seven expeditions and part of the eighth. The personnel lists differ from those in the reports described earlier in that individual affiliations are never provided and the lists ostensibly include all expedition members and their occupations. The only known exception to the completeness of the lists is the omission of names of five hydrographers on the First SAE. [REDACTED]

The unique value of the Nudel'man books is that they identify nonscientist expedition members who would otherwise be unknown. These books also are generally more current than comparable volumes of the Works of the Soviet Antarctic Expedition. Unfortunately, publication of the series may have been discontinued since 1965.

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- 31 -

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