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CIA/RR G/I 59-30  
12 May 1959

MEMORANDUM FOR: Legislative Counsel, Office of General Counsel

SUBJECT: Current inadequacies and suggested improvements in US Antarctic Research

REFERENCE: Bureau of the Budget Letter to Mr. Dulles, dated 27 April 1959

The views and conclusions included in these comments have evolved out of (1) observations made since 1955 in the course of Agency representation on the OCB Working Group on Antarctica, and (2) continuing intelligence production for the DCI and the OCB on Soviet Antarctic activities. In the course of this production it has sometimes been necessary to make comparisons with US activities in order to provide some judgment on the significance (political, military, economic) of Antarctic research to the USSR.

The historical preeminence of the US in the Antarctic area is being challenged today by the USSR -- not in the usual cold-war type of activities but with a well-organized, systematic, and aggressive scientific program. Soviet motivations in Antarctica are both scientific and political. Soviet scientific entry into Antarctica is a logical extension of its long-standing polar research in the Arctic and is generated by the expanding Soviet study of the earth as a whole. There is also direct evidence that Soviet scientific activities are being undertaken for the improvement of the Soviet political position in the Antarctic area. The estimated long-range consequences of these objectives and associated activities are two-fold. First, the systematic collection of scientific data on the Antarctic will contribute significantly to the Soviet study of the whole of interrelated, world-wide physical phenomena. Their objectives in this are to improve Soviet prediction of harmful occurrences of nature, increase their ability to modify and control some of these, and to locate and develop all possible forms of natural resources. The military implications of these objectives are that, given any relative degree of equality in the weapons system design, supremacy may come to that nation which has gained better knowledge and control over the physical environment. Second, the Soviets are developing -- politically -- another opportunity to demonstrate the superiority of the communist system through its science, and to establish an interminable right to participate in the political control of a large, if as yet uninhabited, portion of the Southern Hemisphere. Whereas US

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rights prior to the IGY (1957-58) have been based largely on exploration adventures and military exercises, the Soviets have made and will continue to make significant impressions on world opinion with outstanding scientific results from their Antarctic activities. It would follow from this that future US activities must continue at a level to (1) produce equal or greater accrual of scientific data in the long-range competition to increase mastery over the physical environment; (2) maintain historic US prestige among the peoples of the Southern Hemisphere (particularly Latin America which is deeply concerned with the Antarctic); (3) prevent Soviet subversion of the administration and control of Antarctica; (4) prevent any military use of a build-up in the area; and (5) maintain specific US rights in certain minimum specific areas of Antarctica which could be claimed, should such course of action be adopted. The following comments on the specific topics are based on the above considerations.

1. On the determination of an appropriate level of effort of US activities: There appear to be deficiencies in the US effort, both in topical scope and in area of activity.
  - a. As a minimum, US effort should be expanded in Western Antarctica since this appears to be the most favorable area with respect to access, altitude, and geology. Since the US has had no activities in Palmer Peninsula since the Ronne Expedition of 1947, it would appear that at least summer-season glaciological and geological operations should be extended from Byrd Station into this area. Some of these could be mounted through small, portable buildings that would fly the US flag and thus serve scientific and political purposes as well.
  - b. US rights can be further strengthened by expanding the areal extent of US activities through a program of air-hopping of scientists and portable stations to areas not covered by traverses or station activities.
  - c. Current Department of Defense policy excludes any logistic re-supply of Wilkes and Ellsworth Stations under any circumstances. Accordingly, these have been leased to the Australians and Argentinians, respectively. In the event, however, that Wilkes were to be given up by the Australians, it would be desirable to modify the present Defense policy by a stand-by plan to re-occupy the station with US scientists. This would prevent its possible occupation by the USSR or another Bloc power (Poland was brought into Antarctica for the first time in January 1959 by being given Oasis Station by the USSR).

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d. A serious deficiency in the terminated US IGY program as well as in the current post-IGY program is the absence of oceanographic surveys. (Soviet oceanographic surveys to date extend almost around the entire continent). A specially reinforced vessel would make possible a systematic oceanographic and hydrographic survey program, of significant value to basic science. Such a vessel would also provide important military as well as psychological advantages. We anticipate that the Soviets will ultimately introduce the atomic icebreaker and scientific submarine into their Antarctic research. Each would cause a grave impact upon the peoples of the Southern Hemisphere.

e. The absence of any extensive US topographic mapping of Antarctica despite more than three decades of intermittent activity is a serious deficiency -- political and scientific. While such mapping was excluded under the US IGY program, the Soviets have undertaken extensive mapping which now covers a coastal zone between 40°E and 166°E. They have also pushed to establish an international program in which they have offered to map a third of the area. It has long been proposed by US scientists and others that the US systematically map extensive portions, chiefly western Antarctica, at 1:1,000,000. The scientific need is (1) to establish the topography, geology, and glacial characteristics of Antarctica; (2) for the geodetic study of the size and shape of the earth (included in the Defense proposed 20-year geodetic program, but of low priority); and (3) eventually essential to polar-orbit satellite tracking. Politically, mapping is needed to (1) provide the best tangible evidence of US activity and topographic knowledge of an area; (2) evaluate and delineate areas of importance to the US; and (3) use in any possible future resolution of claims disputes.

**2. On the development, coordination and financing of US activities:**

a. The fruitful, creative development of US activities in Antarctica over the past three years has been seriously hampered by the fact that dominant control -- fiscal and logistic -- has been vested in the US Navy which (1) has had no substantive scientific interest in the area, and (2) has been forced to finance activities out of ceiling defense funds for an activity which has a comparatively low military priority. As a consequence, all planning by the Working Group repeatedly has developed into a tense, negative climate dominated by the conviction of the successive Navy representatives that all other Departments gather at the Working Group to spend Navy funds which are being diverted from higher priority defense requirements. Such a

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climate has of necessity frustrated a constructive exploration and interchange of ideas and methods to develop and implement a balanced, suitable program. It has been particularly difficult in the formulation of long-range objectives and programs, since Navy representatives have always felt constrained by the fear of overcommitment into an unknown budgetary future. This is particularly serious since the seasonal nature of Antarctic operations requires the longest possible lead-time for program planning and implementation.

b. A further complicating factor lies in (1) the mysterious cost determination system employed by US Navy procedures and (2) the complete absence of meaningful cost accounting of past operations. This has proved to be a source of much suspicion that Navy uses cost estimates to scuttle programs which otherwise would not be eliminated by substantive debate.

c. The high cost of US Navy operations has been frequently emphasized by US personnel who have been in Antarctica. It is also evident from some comparisons with Soviet operations. For example, in Deep Freeze IV (1958-59) the US Navy allocated 2700 officers and men and 8 ships -- including 4 ice-breakers, 2 cargo ships, and 2 tankers. The Soviets at their peak season have used a maximum of 600 men and 3 ships: one ice-reinforced (for ice-forcing, cargo, passenger, and scientific research), one cargo-passenger, and one refrigerator vessel. Part of this disparity in manpower is due to the military T/O system of staffing which may be fully warranted under battle conditions but has no place in peacetime pursuits. The Soviets utilize scientific personnel for manual labor at peak unloading periods. This disparity in costs has two serious implications: (1) high US logistic costs place an unwarranted limitation on the level of scientific operations, thus reducing the effectiveness of US efforts, and (2) the Soviets are in a better competitive position since their efforts are relatively less burdensome fiscally.

d. Since the termination of the IOY (31 December 1958), the scientific planning and coordination of US Antarctic research has been taken well in hand by the National Science Foundation through its Antarctic Research Office, its Interdepartmental Committee for Antarctic Research, and the Committee on Polar Research of the National Academy of Sciences. As this established mechanism seems to be developing with promise, little would be gained by establishing a Commission which as a concept is much mistrusted among the scientific community due to the fear that it would tend to mix scientific and political considerations. Science might then

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become subverted by political considerations and lose its objectivity. Moreover, since the NSF already is responsible for coordinating basic research, a Commission would become an additional channel which could interfere with effective planning and operations.

**3. On the methods of providing and financing logistic support:**

a. A basic requirement for the strengthening of US Antarctic operations and increasing the rate of scientific and political benefits would be the elimination of the Department of Defense from its dominant logistic and fiscal activity in US operations. The continued presence of military personnel and equipment may well become an increasing source of embarrassment to the US as it tries to restrict the use of Antarctica to peaceful purposes. Since US Antarctic operations are designed primarily for scientific purposes, it is unsound to obscure these costs within the defense area of the government. Moreover, by the elimination of high-cost military operations, a greater return of scientific results would follow from a given unit of investment.

b. The greatest problems are to (1) develop a budget procedure independent of the Department of Defense, and (2) provide a means by which a civilian Antarctic operations unit can be organized to fund and undertake operations on the ice continent. One possible approach could be through enabling legislation that would permit a non-profit organization (e.e., American Geographical Society, New York) to submit budget requests to Congress for continental operations funds; US Navy operations could be limited to delivery only of men, equipment, and supplies to the continent -- the system now employed in the Arctic. Special funding procedures would be required since the National Science Foundation is not engaged in field operations, but it would seem unnecessary to require the establishment of a Commission solely for funding and sea-supply operations.

**4. On depositing and cataloging of Antarctic records:**

The National Science Foundation and its Scientific Information Office can be expected to provide a centralized data center on the Antarctic. The National Archives already serves as a depository for maps and related materials.

**5. On special interests of the Agency:**

a. The Agency is interested in the development of the fullest possible exchange of scientific personnel, particularly with the USSR, to include if possible year-round resident exchanges at all Soviet Antarctic stations. This would facilitate not only the

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monitoring of Soviet activities as such, but would yield intelligence on Soviet polar operations, personnel, capabilities, and equipment that might not be accessible in the Soviet Arctic.

b. The Agency is also interested that provisions are made for an equitable exchange of scientific reports, data, maps and charts among all participants in Antarctic research, and particularly with the USSR which has been notorious in withholding such information on the Arctic Basin as well as other areas.

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