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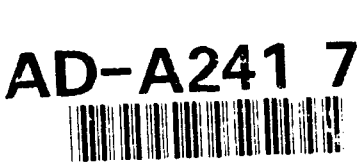

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Monterey, California

THESIS

ANTARCTIC TREATY 1991:
A U.S. POSITION

by

Karen D. Willis

December, 1990

Thesis Advisor: R. Mitchell Brown III
Second Reader: Thomas C. Bruneau

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The Antarctic Treaty of 1959, ratified in 1961, is subject to review in 1991. This thesis presents a negotiating position for the United States in the event the Treaty is reviewed. To do so, it examines important aspects of the review process, presenting a broad view of the issues, parties, and strategies facing the United States in these negotiations. In addition, major issues which have evolved over the past 30 years within the parameters of the Antarctic Treaty System are explored, as well as areas of potential future conflict. The positions of those countries within and those outside the Antarctic Treaty System are identified in order to anticipate areas of conflict and consensus during the negotiation process. Additionally, some planning implications are explored which highlight operational support areas of concern. The thesis concludes that it is in the United States' interest for the Antarctic Treaty to continue in its present form and presents a negotiating strategy to achieve that end.

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Antarctic Treaty 1991:
A U.S. Position

by

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of the requirements for the degree of

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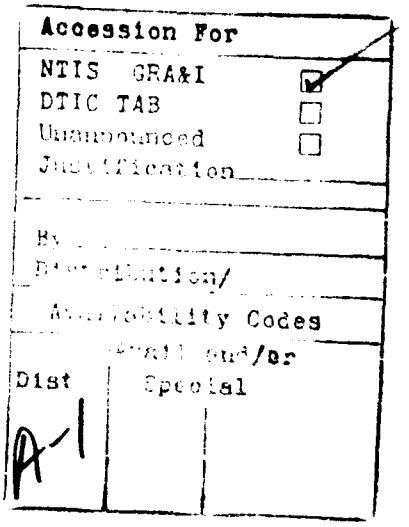
ABSTRACT

The Antarctic Treaty of 1959, ratified in 1961, is subject to review in 1991. This thesis presents a negotiating position for the United States in the event the Treaty is reviewed. To do so, it examines important aspects of the review process, presenting a broad view of the issues, parties, and strategies facing the United States in these negotiations. In addition, major issues which have evolved over the past 30 years within the parameters of the Antarctic Treaty System are explored, as well as areas of potential future conflict. The positions of those countries within and those outside the Antarctic Treaty System are identified in order to anticipate areas of conflict and consensus during the negotiation process. Additionally, some planning implications are explored which highlight operational support areas of concern. The thesis concludes that it is in the United States' interest for the Antarctic Treaty to continue in its present form and presents a negotiating strategy to achieve that end.



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I. INTRODUCTION

The Antarctic Treaty of 1959, ratified in 1961, is subject to its first formal review and, perhaps, renegotiation in 1991. This potential review process presents opportunities and challenges for the United States, as well as the international community as a whole. This thesis will present a negotiating position for the U.S. in anticipation of such a review (or renegotiation) of the current Antarctic Treaty. To do so, it will examine important aspects of the review process which have developed within the Antarctic Treaty System (ATS), as the Antarctic Treaty and subsequent Conventions have come to be addressed. Issues, anticipated and unanticipated, which have evolved over the past 30 years will also be examined. What are the positions of the original signatories, as well as those countries which have acceded to the Treaty, with regard to the Treaty as it currently stands? Areas of agreement as well as disagreement must be identified in order to develop negotiating positions to counter incompatible goals. Which issues could fracture the 30 year consensus which characterizes the Antarctic Treaty? What issues are of particular importance to the United States, and why? And, how can U.S. interests best be served in the event of a formal review, or even renegotiation, of the Treaty?

Answers to these and other questions must be articulated in order to develop a viable negotiating strategy in the U.S. national interest. Several United Nations' initiated negotiations, such as those conducted for the "Agreement Governing the Activities of States on the Moon and Other Celestial Bodies" (the "Moon Treaty") or the U.N. Convention on the Law of the Sea, provide additional areas for examination at some future date and are not included in this thesis.

A brief foray into the history of Antarctica in Chapter I, will set the stage for analysis of the Antarctic Treaty System which follows in Chapter II. Examination of the ATS will provide background information critical to the development of a U.S. negotiating strategy. What is the current ATS membership? How have past conflicts been resolved? Which procedural processes have proven effective or ineffective? What has the evolutionary process been for the Antarctic Treaty System? The Antarctic Treaty has proven remarkably resilient over the past thirty years. What factors contributed to this and how can they be utilized for the future? Chapter II provides the framework around which a negotiating strategy can be built.

Chapter III, Issues in Antarctica, will examine three concerns which present the greatest challenges to all parties concerned should a review or renegotiation occur.

The most long standing of these is the question of sovereignty which will be explained at length in Chapter III. Two more contemporary issues which are of concern, and may prove equally divisive, are the questions of developing mineral resources in and adjacent to Antarctica and, closely related, the ecological and environmental threat to the area posed by man.

After examination of the sovereignty, mineral resource, and environmental issues presented in Chapter III, Chapter IV will review the current positions of those countries which have acceded to the Treaty, as well as those with "non-consultative" status--a status allowing limited participation in Antarctic matters--should a formal review occur. Positions of countries with no direct involvement in Antarctica or the Treaty, but expressing a very vocal desire to change its current status from Treaty governance to an international status under the auspices of the United Nations, will also be examined. This will include a number of the "non-aligned" countries. After review of the positions of all potential participants, a negotiating position which best advances U.S. national interests will be articulated.

In the unlikely event that hostilities were to erupt in or near the Antarctic continent due to Treaty changes, or for other unforeseen reasons, Chapter V, U.S. Naval

Capabilities, will provide an assessment of the U.S. Navy's current and projected capabilities to deal with such a situation in the Antarctic region. This assessment will focus on three areas--antisubmarine warfare (ASW), supply, and command, control, and communication (C3)--and will be quite general in nature. Summary and conclusions with predictions for the future of the Antarctic Treaty, as well prospects for continued U.S. interest in Antarctica are presented in Chapter VI.

A. HISTORICAL PERSPECTIVE

1. Antarctica the Continent

Speculation about the continent of Antarctica stretches back to the time of the Greeks. Its name is derived from two words, the Greek word *arktos*, meaning "the Bear" (the northern constellation), which referred to the Arctic region, and *anti*, "opposite", thus *antarktikos*, "opposite the Bear" and opposite the Arctic.[1] Captain James Cook was one of the first Europeans to land a party on Antarctica, sometime between 1772-75, as he circumnavigated the globe. This was the "first truly scientific trip to the Antarctic Continent",[2] and provided invaluable information about Antarctica. However, Captain Cook, as did many others

[1] H. G. R. King, The Antarctic, (New York: Arco Publishing Company, Inc., 1969), p. 1.
[2] Luis H. Merico, Antarctica: Chile's Claim, (Washington, D.C.: National Defense University, 1987), p. 6. King, The Antarctic, p. 15.

who followed, remained unaware of the exact size or extent of this the world's fifth largest continent. Cook did report on the large number of whales and seals in the area, whose commercial exploitation also served to advance exploration in the Antarctic region. Nevertheless, exploration continued at a very slow pace. Not until 1898, did a party of Europeans winter over in Antarctica. This occurred when the Belgian ship, *Belgica*, commanded by Adrien de Gerlache with a crew of 19, became trapped by ice.[3] A land of extremes--"the coldest, highest, iciest, and most remote continent on Earth"[4]--Antarctica defied all but the most superficial exploration until the twentieth century when a flurry of expeditions scoured the Continent. Among the more noteworthy of these expeditions was "the race to the Pole" which occurred in 1911-1912. A Norwegian team lead by Roald Amundsen defeated a British team headed by Royal Navy Captain Robert F. Scott in the race to "discover" the South Pole.[5] After this setback, the British partially redeemed their exploratory reputation with Sir Ernest Shackleton's expedition from 1914-1917. Though the

[3] Jack Child, Antarctica and South American Geopolitics: Frozen Lebensraum, (New York: Praeger Publishers, 1988), p. 12.

[4] John A. Heap and Martin W. Holdgate, "The Antarctic Treaty System as an Environmental Mechanism--An Approach to Environmental Issues," in Antarctic Treaty System: An Assessment. Proceedings of a Workshop Held at Beardmore South Field Camp, Antarctica, January 7-13, 1985 (Washington, D.C.: National Academy Press, 1986), p. 195.

[5] Heap and Holdgate, pp. 12-13.

expedition failed in its objective of crossing the Antarctic continent from sea to sea, via the South Pole, it nevertheless made significant scientific biological, hydrographical, and meteorological discoveries.[6] Technological advances in transportation, housing, and survival equipment continued to enhance efforts to explore Antarctica throughout the twentieth century. These advances culminated in efforts undertaken during the Third International Geophysical Year.

2. Third International Geophysical Year (IGY)

The Third International Geophysical Year[7] "has been described by Hugh Odishaw, the man chiefly responsible for organizing the vast American effort, as 'the single most significant peaceful activity of mankind since the Renaissance and the Copernican Revolution.'"[8] It was conceived "In 1950, [when] a group of American scientists met informally at the home of one of them [James A. Van Allen] in Silver Spring, Md., to greet Prof. Sydney Chapman,

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[6] Sir Ernest Shackleton, South: The Story of Shackleton's Last Expedition 1914-1917, (New York: The Macmillan Company, 1920), p. 344.

[7] The Third International Geophysical Year was preceded by "Polar Year" studies in 1882-1883 and 1932-1933. Antarctica in the International Geophysical Year: Based on a Symposium on the Antarctic, Geophysical Monograph No. 1, American Geophysical Union of the National Academy of Sciences, National Research Council (Baltimore, Maryland: Waverly Press, Inc., 1956), p. 1.

[8] Walter Sullivan, Assault on the Unknown: The International Geophysical Year (New York: McGraw-Hill Company, Inc., 1961), p. 4.

of England, one of the world's leading geophysicists."[9] This informal meeting would result in 1957, in an international endeavor to advance scientific knowledge in geophysical sciences, such as geology, oceanography, and meteorology. The IGY involved research throughout the world, however, it was the unique, pristine environment of the Antarctic which entranced scientists, some of whom interpreted the Third IGY "as a turning-point in the sphere of science."[10] Overall U.S. preparations for the IGY began in November 1953, while the U.S. Navy began its support operations in 1954, with the U.S.S. Atka's "preliminary reconnaissance along the coast of Antarctica....to examine ice conditions and possible station sites..."[11] For eighteen months (1 July 1957 to 31 December 1958), the world's scientists found themselves able to "put aside their customary allegiances and work together in the commonwealth of science,"[12] as they worked to uncover Antarctica's secrets. The United States was interested in the Antarctic for numerous reasons, among them, the "opportunity for extensive geomagnetic studies,...for the study of ionospheric phenomena affecting

[9]Congress, House, Committee on Interstate and Foreign Commerce, International Geophysical Year: The Arctic and Antarctica, 85th Cong., 2d sess., 1958, p. 10.
[10]Peter Beck, The International Politics of Antarctica (New York: St. Martin's Press, Inc., 1986), p. 46.
[11]Congress, House, Committee on Interstate and Foreign Commerce, International Geophysical Year, p. 126.
[12]King, The Antarctic, p. 234.

radio propagation...and concentrations of cosmic radiation...[as well as] tracking...earth satellites having the significant North-South orbit-"[13] Research conducted in these areas was to result in significant advances for the United States and others. In the separate sphere of politics, a result of the IGY was the realization by the governments involved in Antarctic research of the potential changes in the region's *status quo* because of the increasing international interest in Antarctica. The governments "...perceived a threat to the existing *de facto* neutralization of the continent, a change which would prove unwelcome, inconvenient, and even dangerous."[14] This threat perception was exacerbated on the U.S. front by the successful launch of the Soviet satellite, *Sputnik*, in late 1957, with its political and military implications. This Soviet success, as well as repeated efforts by India to place the subject of Antarctic jurisdiction on the United Nations agenda encouraged states involved in Antarctica to develop some sort of international agreement.[15] As a result of both the unprecedented international cooperation achieved during the IGY, and, as U.S. Secretary of State Dulles noted, "...deeply impressed with the danger if that

[13] Congress, House, Committee on Interstate and Foreign Commerce, International Geophysical Year, p. 21.
[14] Beck, The International Politics of Antarctica, p. 82.
[15] Deborah Shapley, The Seventh Continent: Antarctica in a Resource Age (Washington, D.C.: Resources For The Future, Inc., 1985), p.90.

unfolding continent [Antarctica] should become a scene of international rivalry and if its physical possibilities were to be used to threaten world peace and security"[16], a treaty governing its use was proposed, a proposal which eventually resulted in today's Antarctic Treaty System.

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[16] Department of State Bulletin, 23 June 1958, pp. 1035-1042, as cited in Department of State, American Foreign Policy: Current Documents, 1958 (Washington, D.C.: Government Printing Office, 1962, p. 38.

II. ANTARCTIC TREATY SYSTEM

The Antarctic Treaty System (ATS) is the present day compilation of thirty-odd years development of a United States' initiative forwarded by President Eisenhower in May 1958. Designed to "assure that peaceful conditions will continue indefinitely by mutual agreement, permitting development of scientific research and cooperation"[17], President Eisenhower invited the 11 nations, which had participated in Antarctic research during the IGY, to negotiate an agreement for Antarctica. His 1958 proposal came to fruition 18 months later with the signing of the Antarctic Treaty of 1959.

A. THE ANTARCTIC TREATY

1. Negotiations

Seeds of Antarctic negotiations can be traced back at least two decades before formal negotiations took place in 1959. It can even be argued that such seeds were planted, as concerned the United States, as early as 1924, by U.S. Secretary of State, Charles E. Hughes. Secretary of State Hughes established the U.S. position with regard to Antarctica as one of not claiming any portion of the continent, while reserving the right to do so at some future

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[17] "Soviet Pledges Antarctic Peace," New York Times, 1 June 1959, p. A7.

date, and not recognizing the claims of other nations. This issue of establishing sovereignty would be raised repeatedly over the following decades. For example, in 1939, when the Norwegians declared portions of Antarctica under Norwegian sovereignty, the U.S. responded with correspondence which, while acknowledging receipt of the Norwegian note declaring sections of Antarctica under Norway's jurisdiction, reiterated the U.S. position "that the United States reserves all rights which it or its citizens may have in the area mentioned"[18], that area being Antarctica. The 1924 U.S. policy of neither claiming, nor recognizing the claims of others remained in effect through Treaty negotiations in 1959. Other options, such as the one forwarded by the Policy Planning Staff in mid-1948, which "...recommended that the United States support in principle the establishment of an international status for Antarctica, in the form of a United Nations trusteeship..."[19], were pursued by the United States through diplomatic channels but met with failure. Those nations with territorial claims in Antarctica resisted, in varying degrees, all efforts to internationalize the Continent. In a counter proposal to internationalization, Chile, in 1948, first advanced the

[18]Department of State, Foreign Relations of the United States: Diplomatic Papers 1939, vol 2 (Washington, D.C.: Government Printing Office, 1956), p. 2.
[19]Department of State, Foreign Relations of the United States: Diplomatic Papers 1948, vol 1, part 2 (Washington, D.C.: Government Printing Office, 1976), p. 982.

notion of "a sort of stand-still agreement under which none of the countries interested in Antarctica would make efforts to promote their claims during a five year period and during this period Antarctica would be open to scientific and meteorological study by all."[20] Though discussed, over the next several years, resolution of the Antarctic issue was not achieved until formal negotiations began a decade later, in 1958. Seeking to solidify the political and scientific advances achieved as a result of the International Geophysical Year 1957-1958, 12 nations--Argentina, Australia, Belgium, Chile, France, Great Britain, Japan, New Zealand, Norway, South Africa, the U.S.S.R., and the U.S.--met in Washington D.C. in October 1959, for the final negotiation of the Antarctic Treaty.[21] Based on a foundation of 59 meetings, which had been conducted over the previous 18 months, these final negotiations proceeded with minimal delay. The delays which did occur, focused primarily on the territorial claims of seven of the 12 participating countries.[22] The seven countries with territorial claims included Argentina, Australia, Chile, France, Great Britain, New Zealand and Norway (see Appendix

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[20] Department of State, Foreign Relations of the United States: Diplomatic Papers 1948, vol 1, part 2 (Washington, D.C.: Government Printing Office, 1976), p. 1002.
[21] Walter Sullivan, "Antarctic Talks Aim At Arms Ban," New York Times, 14 October 1959, p. A17.
[22] Walter Sullivan, "Antarctic Talks Making Progress," New York Times, 4 November 1959, P. A37.

B for a map of territorial claims). Belgium, Japan, South Africa, and the two superpowers--the Soviet Union and the United States--made no claim to Antarctica, neither did they recognize the claims of others.

2. The Treaty Itself

The Antarctic Treaty is a relatively short treaty, with only fourteen articles. Its primary goal, as stated in Article I, is to maintain Antarctica's nonmilitarized status. Antarctica was to be used "for peaceful purposes only".[23] There were to be no military fortifications or bases, nor testing of any military weapons in Antarctica, though military personnel and equipment could be used to support scientific research. Articles II and III address the "freedom of scientific investigation,...cooperation", and exchange among the participating nations. A solution to the "sovereignty issue", which had, for a time, stymied final negotiations, appears in Article IV. This Article effectively froze territorial claims of the signatories for the life of the treaty. Another relevant issue addressed by the Treaty was the banning of nuclear explosions or the disposal of nuclear waste in Antarctica (Article V).

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[23] Department of State, "Antarctic Treaty," 1 December 1959, TIAS no. 4780, United States Treaties and Other International Agreements, vol. 12, pt. 1, p. 795.

> The initiative for this provision came late in the [negotiating] conference from southern hemisphere nations, [particularly Chile and Argentina]. The provision was included against Soviet and United States' wishes,[24]

though the U.S. accepted the provision "because it [did] not contain any prohibition on the peaceful use of nuclear material in Antarctica."[25] Article VI defines the area encompassed by the Treaty, "the area south of 60 degrees South Latitude", while at the same time recognizing the international freedom of the high seas. Another crucial concept is included in Article VII which provides for unrestricted access among the signatories to the entire Antarctic continent, territorial claims not withstanding. "Complete freedom of access at any time to any or all areas of Antarctica" is given to designated observers. Jurisdiction over nationals (a legal "subset" of the issue of sovereignty) appears in Article VIII, which allowed for the jurisdiction by each contracting party over its nationals. In the event of a dispute over such jurisdiction, Article VIII provides for "immediate consultation" to resolve the matter. Article IX provides administrative guidelines with regard to meetings and reports. The problem of "disputes" appears in Article XI which notes that if the parties involved can not resolve the

[24] W. M. Bush, Antarctica and International Law: A Collection of Inter-State and National Documents, vol. 1 (London: Oceana Publications, Inc., 1982), p. 63.
[25] Ibid., p. 39

matter, it will then be referred to the International Court of Justice. Articles XII and XIII discuss modifications or amendments to the Treaty, the length of the Treaty ("thirty years from the date of entry into force"), and ratification and accession to the Treaty. From guidelines laid out in this short, straightforward document, Antarctic Treaty membership has developed into a "two-tier" system. All UN member nations, as well as any nation "invited by the Consulatative Parties", are encouraged to sign the Treaty. If the acceding country is "adjudged to perform 'substantial research activity' in Antarctica", it may be granted "consultative" status.[26] Only those nations with consultative status may participate in the decisionmaking processes of the Antarctic Treaty System. Consultative meetings, which have evolved to being held every two years, address issues related to "governing the activities of states in Antarctica, including its use for peaceful purposes only, the undertaking to facilitate scientific research and international cooperation in the process of studying the continent", as well as other pertinent issues.[27] A unique aspect of consultative meetings is that any substantive recommendation made must be approved by *all* parties. As previously stated, though the Antarctic

[26] Peter J. Beck, "A New Polar Factor in International Relations," World Today, April 1989, p. 66.
[27] Yuri M. Rybakov, "Juridical Nature of the 1959 Treaty System," Antarctic Treaty System: An Assessment, pp. 38-39.

Treaty is a short treaty, it is one which has proven to be longlasting and farsighted.

3. Conventions to the Treaty

While remarkably flexible and prescient in many ways, the Treaty did require additional clarification and/or elaboration on several issues in the years following its ratification. Conventions to the Treaty proved to be crucial components in the resolution of these issues. With regard to the legal status of conventions,

> As L. Oppenheim pointed out, 'International compacts which take the form of written contracts are sometimes termed not only agreements or treaties, but acts, conventions, declarations, protocols, and the like. But there is no essential difference between them, and their binding force upon the contracting parties is the same, whatever be their name.'[28]

Three conventions have entered into force since ratification of the Treaty. The first of these was the "Agreed Measures for the Conservation of Antarctic Fauna and Flora", a innocuous measure designed to supplement the Treaty's Article IX's "preservation and conservation of living resources in Antarctica." This was followed by the "Convention for the Conservation of Antarctic Seals" which entered into force on 11 March 1978, six years after its adoption by ATS members in 1972. Its "basic aim was to guard against any depletion of [seal] stocks through over-

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[28]Lassa Oppenheim, International Law: A Treatise, vol. 1, 8th ed., edited by H. Lauterpacht (London: Longmans, Green and Co., 1955), p. 898.

exploitation in case commercial sealing resumed."[29] The final convention which entered into force 7 April 1982, was the convention on the "Conservation of Antarctic Marine Living Resources" (CAMLR). Adopted in Canberra, Australia, 1980, CAMLR was precipitated by concern for krill (a small shrimp-like crustacean) near the bottom of the Antarctic ecosystem. The result of this concern was an ecosystem approach to conservation, i.e. preservation of all living resources, not any particular one. A fourth convention was negotiated but has thus far failed to be ratified. This is the controversial "Convention on the Regulation of Antarctic Mineral Resource Activity" (CRAMRA). Initiated with high hopes, CRAMRA sought to regulate mining activities in Antarctica. Unexpected opposition to the Convention has apparently killed it "at least for the foreseeable future."[30] These Conventions have directly contributed to the longevity of the Treaty.

4. Current Membership

Antarctic Treaty membership is currently composed of 21[31] consultative parties and 17 acceding nations (Table 1).

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[29]Peter Beck, The International Politics of Antarctica (New York: St. Martin's Press, 1986), p. 220.
[30]Philip Shabecoff, "U.S. Seeks Ban on the Exploration of Minerals and Oil in Antarctica," New York Times, 14 November 1990, p. A1.

Table 1. Antarctic Treaty nations[32]

Original Treaty Members

Argentina	New Zealand
Australia	Norway
Belgium	South Africa
Chile	Soviet Union
France	United Kingdom
Japan	United States

Later consultative parties

Poland (1977)	FRG (1981)
Brazil (1983)	India (1983)
PRC (1985)	Uruguay (1985)
GDR (1987)	Italy (1987)
Spain (1988)	Sweden (1988)

Acceding nations

Poland (1961)	Czechoslovakia (1962)
Denmark (1965)	Netherlands (1967)
Romania (1971)	GDR (1974)
Brazil (1975)	Bulgaria (1978)
FRG (1979)	Uruguay (1980)
Papua New Guinea (1981)	Italy (1981)
Peru (1981)	Spain (1982)
PRC (1983)	India (1983)
Hungary (1984)	Finland (1984)
Sweden (1984)	Cuba (1984)
Republic of Korea (1986)	North Korea (1987)
Greece (1987)	Austria (1987)
Ecuador (1987)	Canada (1988)
Columbia (1989)	

As indicated by the dates of accession, 18 countries have joined the ATS within the past decade, a veritable rush as compared with nine accessions over the previous 20 years. Various explanations for the increasing interest in

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[31] Consultative party membership was reduced from 22 to 21 when the German Democratic Republic and the Federal Republic of Germany unified.

[32] "The Austral Crescent," Antarctic Journal, December 1988, p. 8, and author's research.

Antarctica have been offered. Some countries are finally financially able to fund Antarctic research, which is a prerequisite for consultative status. Others recognize the approaching 30 year deadline of the Treaty, and want to be involved if the Treaty is reviewed or renegotiated. Whatever the motivation, the growing number of countries within the Antarctic Treaty System has both positive and negative consequences. On the positive side, the nations currently involved cut across all economic and political spheres, putting to rest the old argument that the ATS was an exclusive club. The flip side of the increased numbers involved in Antarctic decision-making, is that consensus, the way all substantive issues are decided, has become increasingly difficult to achieve. This is readily apparent from the recent difficulty in which the CRAMRA foundered. The composition of the ATS membership must quite obviously be taken into account in developing any negotiation strategy. This issue of ATS membership and those nations and non-governmental agencies or parties outside the ATS will be examined more closely in Chapter IV, after several crucial issues, which will affect any negotiation process, are addressed in Chapter III.

III. ISSUES AFFECTING ANTARCTICA

The Antarctic Treaty has proven remarkably effective since its ratification in June 1961. There remain, however, several issues which were difficult to address during negotiations in 1959, and were for all intents and purposes "frozen" at that time, as well as new issues which have emerged as the products of technological and scientific advances over the past three decades, which must be resolved. This chapter will address three of the most pressing, and potentially explosive issues currently facing the Antarctic Treaty System: the questions of sovereignty, conservation of mineral resources, and rising ecological/environmental concerns. These three issues are built, one upon the other. Without first establishing "sovereignty", the question of who owns the rights to mineral resources cannot be answered and, while not the entire problem, with the absence of mining or prospecting for minerals or oil, the possibility of ecological damage is greatly lessened. In any event, sovereignty is, as it is in the field of international law, the linchpin from which the following issues evolve.

A. SOVEREIGNTY

The establishment of sovereignty is the very backbone of international law and consequently, internationa relations.

International law, as defined by Lassa Oppenheim, is "the name for the body of customary and treaty rules which are considered legally binding by States in their intercourse with each other."[32] Oppenheim added further the definition of "state" territory, which is "that...portion of the surface of the globe which is subjected to the sovereignty of the State,"[33] and is crucial to the understanding of "sovereignty" in Antarctica. He later wrote, "The importance of State territory lies in the fact that it is the space within which the State exercises its supreme authority,"[34] or sovereignty. Therefore sovereignty over territory is one of the most basic prerequisites of a nation state. There are several ways by which territorial sovereignty can be established. Oppenheim names five: cession, occupation, accretion, subjugation, and prescription,[35] while Louis Henkin, a Columbia University Law Professor, adds several others such as "conquest, consolidation, contiguity, and discovery."[36] Argentina provides examples of five separate aspects of international law with regard to its territorial claims in Antarctica. First, "under the principle of *uti possidetis, ita*

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[32] Oppenheim, International Law, pp. 4-5.
[33] Ibid., p. 451.
[34] Ibid., p. 452.
[35] Ibid., p. 546.
[36] Louis Henkin and others, International Law: Cases and Materials, 2nd ed. (St. Paul, Minnesota: West Publishing Co., 1987), p. 1508.

possideatis, as you possessed, so may you possess, Argentina is the legal heir of the possessions of the king of Spain...."[37] This aspect goes back to the 15th century when Spain and Portugal, the "superpowers" of that century, divided the world between themselves.[38] Later, when Argentina finally achieved independence in 1810, and was the "legal heir of the possessions of the king of Spain" in the Western Hemisphere, portions of Antarctica became possessions of Argentina. "Discovery" and "exploration" are two additional bases for claims of sovereignty, as are geographical proximity and geographical continuity.[39] In addition to these five legal bases, Argentines have also occupied Antarctica since 1904, by far the longest continuous occupation of Antarctica by any country,[40] and as such provides an additional basis for its territorial claims.

On the other hand, the United States and the U.S.S.R. argue that Antarctica cannot be "occupied" in the true sense of the word. U.S. Secretary of State Hughes expressed this argument when in 1924, in a note to the Norwegian Minister, he wrote:

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[37] Jack Child, Antarctica and South American Geopolitics: Frozen Lebensraum (New York: Praeger Publishers, 1988), p. 68.
[38] Ibid., p. 68.
[39] It is argued that the Antarctic Antartandes are related to the South American Andes.
[40] Child, Antarctica and South American Geopolitics, p. 69.

> In my opinion rights similar to those which in earlier centuries were based upon the acts of a discoverer, followed by occupation or settlement consummated at long and uncertain periods thereafter, are not capable of being acquired at the present time. Today, if an explorer is able to ascertain the existence of lands still unknown to civilization, his act of so-called discovery, coupled with a formal taking of possession, would have no significance, save as he might herald the advent of the settler; and where for climatic or other reason actual settlement would be an impossibility, as in the case of the Polar regions, such conduct on his part would afford frail support for a reasonable claim of sovereignty.[41]

The Soviet Union also argued that sightings and claims established by its nationals, Bellingshausen and Lazarev, in the early 19th century would give the U.S.S.R. a basis for territorial claims, if it chose to exert such claims. The United States, while standing by its position of making no territorial claims, nor recognizing the claims of other nations, did make provisions to support a sovereignty claim, in the event that move proved advantageous or necessary. These provisions were usually made surreptitiously. For example in 1938, when Lincoln Ellsworth, a U.S. citizen, mounted a private expedition to Antarctica, he was asked "in strict confidence...to assert claims in the name of the United States...regardless of whether or not it lies within a sector or sphere of influence already claimed by any other country."[42] The reason for the secrecy surrounding this request is obvious as the United States did not want to

[41] Department of State, Foreign Relations of the United States, 1924, vol. 2, (Washington, D.C.: Government Printing Office, 1939), p. 519.
[42] State, Foreign Relations 1938, vol. 1, p. 972.

alarm nations which had previously established territorial claims in Antarctica.[43]

Disputes between several of the original 12 signatories with regard to overlapping territorial claims was one of the most difficult issues presented during the original negotiations. With Chile, Argentina, and the United Kingdom asserting claims to portions of the same territory, the stage was set for conflict. However, in keeping with the mandate that "it is in the interest of all mankind that Antarctica shall continue to be used exclusively for peaceful purposes and shall not become the scene or object of international discord" and as noted in Article IV, by signing the Treaty, the *status quo* with regard to territorial claims would be maintained for the life of the Treaty. In other words, no additional claims to Antarctica could be made, and those claims already in force would remain so.[44] Thus the sovereignty issue was put on hold for 30 years.

The issue has become no less contentious with the passage of time. During the negotiations of the Conventions subsequent to the Antarctic Treaty, sovereignty remained the crucial stumbling block to be overcome. As Secretary of State Muskie noted in his letter of submittal on the

[43] Department of State, Foreign Relations of the United States, 1939, vol. 2 (Washington, D.C.: Government Printing Office, 1956), p. 13.
[44] TIAS 4780.

Convention on the Conservation of Antarctic Marine Living Resources, "Because the claimant states consider that jurisdiction over marine resources derives from territorial sovereignty, the participants in the negotiation had to deal with their basic differences of view over the existence and nature of maritime jurisdiction in the Convention areas."[45] These differences were overcome by Article IV of the Convention, which again affirms, as in the Antarctic Treaty, territorial status would remain *status quo*.

In addition to disputes between Treaty signatories, sovereignty in Antarctica faces challenges on several other fronts. First, the United Nations seeks to establish its legitimacy with regard to Antarctic affairs. Antarctica first appeared on the UN agenda in 1983, and has since appeared each year, accompanied by debates and resolutions. In 1987, two resolutions were adopted which "reaffirmed demands...for wider [UN] participation in the minerals negotiations, the involvement of the UN Secretary General in Antarctic Treaty System's operations, and the exclusion of South Africa [an original signatory member] from treaty meetings."[46] To date, the Antarctic Treaty Parties have withstood pressure to accede to UN demands, and as the

[45]Congress, Senate, Committee on Foreign Relations, Convention on the Conservation of Antarctic Marine Living Resources, 96th Cong., 2d sess., 1980, p. viii and 8.
[46]Peter J. Beck, "Antarctica at the UN 1988: Seeking a Bridge of Understanding," Polar Record, October 1989, p. 329.

number of Antarctic Treaty members grows (as with China and India), the probability of UN intervention is decreased.

The UN Law of the Sea Convention, signed 10 December 1982, in Jamaica, focuses a slightly different light on sovereignty claims in Antarctica. Article VI of the Antarctic Treaty states: "The provisions of the present Treaty shall apply to the area south of 60 degrees South Latitude, including all ice shelves, but *nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area* [author's italics]."[47] In effect, provisions of the 1982 UN Convention on the Law of the Sea (UNCLOS) apply to Antarctic seas. This opens the way for legal disputes as to "territorial waters" or "exclusive economic zones", not only between the claimants to Antarctic territory, but also between territorial claimants and others because the ocean borders of the Antarctic land mass are open to question due to the composition of the Antarctic continent with its vast ice cover.

Sovereignty is the very essence of statehood. As such, questions associated around this issue will be contentious, controversial, and vigorously debated. If the Antarctic

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[47] TIAS 4780.

Treaty is brought up for review, it will be extremely difficult for a satisfactory solution to be found.

B. MINERAL RESOURCES

The question of whether or not mineral resources exist in Antarctica, as well as the exploitation of such potential resources has been an especially troublesome issue for the Antarctic Treaty System. Antarctica is seen by some to contain "...fabulous deposits of iron, molybdenum, copper, silver, gold, manganese and possibly uranium...."[48] Another statement, expressing similar sentiments was made by Malaysia's Prime Minister Mahathir when he said, "'I have heard the South Pole is made of gold and I want my piece of it.'"[49] The United States has made its share of similar conjectures with regard to Antarctic riches. In 1975, a Navy Captain was quoted as saying "...that a potential 45 billion barrels of oil may be under the ice of Antarctica."[50] This inaccurate statement was quickly clarified by the U.S. Office of Energy Resources.[51] These are but a few examples of the myths which surround Antarctic resources, and which only serve to fuel interest in

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[48]Roberto Remo Bissio, ed. Third World Guide (Rio de Janeiro: Editora Terceiro Mundo, 1986), p. 500.
[49]The Guardian, 26 November 1988, quoted in Peter J. Beck, "A New Polar Factor in International Relations," World Today, April 1989, p. 65.
[50]"Antarctic Oil is Estimated as Enormous," Washington Post, 3 March 1975.
[51]"Estimating the Antarctic Oil Resources," Washington Post, 12 March 1975.

prospecting and development. As was noted by an Australian national during a workshop in Antarctica,

> Many exaggerated notions of the resource wealth of Antarctica have been expressed. The reality is that most of the information available is speculative and based largely on geological hypothesis.[52]

Thus based on conjecture, probability and incomplete information, Antarctica again becomes the focus of diplomatic conflict.

Unlike the "preservation and conservation of living resources" which was specifically addressed in Article IX of the Antarctic Treaty, mineral resources did not receive the same conservatory guarantees. This omission was based on reasons similar to those which affected the decision to effectively table the sovereignty issue. However, instead of "freezing" the issue as was done with sovereignty disputes, the issue of mineral resources was completely sidestepped.[53] This omission received renewed attention during the 1970s, for several reasons, among them "the dramatic rise in oil prices...and scientific drilling in the Ross Sea [which] stimulated further commercial

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[52]Richard A. Woolcott, "The Interaction Between the Antarctic Treaty System and the United Nations System," in Antarctic Treaty System: An Assessment. Proceedings of a Workshop Held at Beardmore South Field Camp, Antarctica, January 7-13, 1985 (Washington, D.C.: National Academy Press, 1986), pp. 386-387.

[53]Congress, Senate, Committee on Foreign Relations, Subcommittee on Oceans and International Environment, U.S. Antarctic Policy, 94th Cong., 1st sess., 1975, p. 5.

interest."[54] U.S. policy, during the 1970s, was one of "opposing actions by any nation with the purpose of commercial exploitation and exploration of Antarctic mineral resources and urging other nations to join the United States in such an interim policy...."[55] At the same time, the U.S. opposed a moratorium proposed by other nations.

The Antarctic Treaty Parties began negotiations in 1982 on the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), or the "Wellington Convention", so-called because the Convention was "...opened for signature at Wellington, [New Zealand] on 25 November 1988."[56] Designed to "...manage mineral resource activity"[57] in Antarctica to include prospecting, exploration, and development, the Convention also prohibited mineral resource activity outside its purview (Article 3). Six years in negotiation, ratification of CRAMRA has met with unexpected resistance from environmental and conservation groups, as well as from the Australian, French,

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[54] Congress, Office of Technology Assessment, Polar Prospects: A Minerals Treaty for Antarctica (Washington, D.C.: Government Printing Office, 1989), p. 9.

[55] Congress, Senate, Committee on Foreign Relations, U.S. Antarctic Policy, p. 6.

[56] "SCAR Bulletin No. 94, July 1989: Final Act of the Fourth Special Antarctic Treaty Consultative Meeting on Antarctic Mineral Resources," Polar Record, July 1989, p. 263.

[57] Peter J. Beck, "Convention on the Regulation of Antarctic Mineral Resource Activities: A Major Addition to the Antarctic Treaty System," Polar Record, January 1989, p. 21.

and New Zealand governments which have reversed their original positions of support for the Convention. Opponents of the Convention view any discussion of mining in Antarctica an anathema, and instead advocate turning Antarctica into an international peace park or wilderness preserve.[58]

An interesting side note to the debate on the use of mineral resources is the fact that Antarctica's most abundant natural resource, ice, is specifically excluded from consideration in CRAMRA.[59] The possibility of utilizing Antarctic ice as a fresh water source has been examined at one time or another over the past several decades. In 1973 at the request of the National Science Foundation, the Rand Corporation prepared a report which was "intended to provide background knowledge for potential users and suppliers of Antarctic icebergs, and for governments or agencies concerned with the development, regulation, or control of these valuable ice resources."[60] The study concluded that: 1) Antarctic icebergs could provide fresh water to "areas close to deep seawater access routes" at a cost in energy and money less than that used in

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[58] "Fighting for Antarctica," Europe, September 1989, pp. 7-8.

[59] SCAR Bulletin No. 94, July 1989, Polar Record, July 1989, p. 263.

[60] J. L. Hult and N. C. Ostrander, Antarctic Icebergs As A Global Fresh Water Resource, R-1255-NSF (Santa Monica, California: The Rand Corporation, 1973), p. iii.

desalinization projects, water reclamation operations, or "interbasin water transfers of a few hundred miles"; 2) further research with regard to "potential societal and environmental impacts" would be required before large-scale harvesting of Antarctic icebergs was begun.[61] The Global 2000 Report to the President, a project commissioned by President Carter in 1977, "to study the 'probable changes in the world's population, natural resources, and environment through the end of the century'", noted the potential scarcity of fresh water and subsequent effects on the international community.[62] More recently, Soviet scientists reportedly "worked out a project of shipping Antarctica's icebergs to the shores of the Arabian peninsula...." by using satellites to spot the icebergs and tugboats to tow them.[63] The issue of Antarctic ice will appear on the agenda of the XVIth Consultative Meeting, scheduled for 1991.[64] This comes at an opportune time for the U.S. as Dr. Michael Hudlow, director of the National Oceanic and Atmospheric Administration's Office of

[61] Ibid., p. vii.
[62] U.S. Council on Environmental Quality and the Department of State, The Global 200 Report to the President: Entering the Twenty-First Century, vol. 1 (Washington, D.C.: Government Printing Office, 1980).
[63] "Antarctic Icebergs Moved," Moscow World Service, 10 January 1988, as cited in FBIS-SOV-88-016, 26 January 1988, p. 77.
[64] "SCAR Bulletin No. 97, April 1990: Recommendations Adopted by the XVth Antarctic Treaty Consultative Meeting Paris, 19-20 October 1990," Polar Record, April 1990, p. 180.

Hydrology, in a recent press conference noted, "As we [U.S.] move toward the 21st century, short supplies of clean water could rival expensive oil as one of the nation's most serious concerns...."[65] Clearly the issue of using Antarctic icebergs as a fresh water source has the potential to become as contentious as developing Antarctic mineral resources.

C. ECOLOGICAL AND ENVIRONMENTAL CONCERNS

"Ecological and environmental" issues encompass a number of issues and have grown increasingly important in the world as a whole, and in Antarctica in particular. These issues are important not only for their obvious environmental impact, but also because of the way in which consultative members view these issues and the way these perceptions affect the ATS as a whole. Recent discussions of global warming have focused attention on Antarctica and raised public awareness to the effects of all types of pollution. In addition, environmental watchgroups, such as Greenpeace, have forced governments to defend their environmental actions which in some cases have been detrimental to Antarctica's ecosystem. These two issues, meteorological studies and manmade pollution are two potent issues on the Antarctic agenda.

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[65]"U.S. Faces Acute Water Shortage in 90's, Government Expert Says," New York Times, 23 November 1990, p. C8.

1. Meteorological Studies

As the result of a 1974 report by two researchers, M. J. Molina and F. S. Rowland, the late 1970s saw a rise in concern over fluorocarbons and their effect in the atmosphere. Subsequent scientific analysis and observations supported the Molina-Rowland thesis, which stated that chemical reactions caused by fluorocarbons in the atmosphere were depleting the ozone layer, and that the catalyst agent, the fluorocarbons had an extremely long lifetime. Little progress in addressing this issue resulted from the study until 1984, when the jolting discovery was made of a huge hole in the ozone layer over Antarctica. With this discovery, Antarctic research and the necessity of maintaining Antarctica's relatively pollution-free environment received renewed interest from around the world. With public fears regarding the ozone, came renewed interest in "global warming" and the greenhouse effect. This interest spilled over into a movement for even greater control in Antarctica so that the scientific "baseline" its environment provided could be protected.

As with any environmental issue, some nations are more concerned than others. Those in the Southern Hemisphere are noticeably more interested in Antarctica's effects on weather as these nations experience any deviations to a greater degree than those in the Northern Hemisphere. Also,

Southern Hemispheric countries recognize the limited information available with regard to the Antarctic effect on the ocean currents which affect their economies directly through the fishing industry, as well as indirectly through severe weather changes. As one Brazilian official pointed out in underscoring his nation's interest in Antarctica:

> No scientific expertise is needed to understand that the climatic phenomena that powerfully interfere with the economy of the center-south regions of Brazil have their origin in Antarctica. It is also easy to see the importance of antarctic waters in ocean processes along Brazilian coast....[66]

Results of the relatively recent meteorological studies which are conducted in Antarctica have much to offer the international community. The need to maintain the "pollution-free laboratory" of Antarctica, however, continues to receive different priority among those nations in the decision-making process.

2. **Manmade Pollution**

As stated in Chapter I, Man has been coming to Antarctica since the 1700s. And since that time, has been leaving a legacy of trash, wreckage, and garbage. As Dr. Peter Wilkniss, Division Director of Polar Programs, National Science Foundation[67] (NSF) testified before Congress:

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[66] L. F. Macedo de Soares Guimaraes, "The Antarctic Treaty System from the Perspective of a New Consultative Party," Antarctic Treaty System: An Assessment, p. 338.

[67] The United States' scientific organization in Antarctica.

> In examining environmental problems caused by increasing human activity in the Antarctic, the following observations apply: Any human intrusion and accompanying means of life support alter the pristine nature of the local environment....The dry, cold desert climate of the Antarctic preserves debris of human physical occupation for centuries. The Antarctic terrestrial environment is virtually devoid of microbial activity. Decomposition of degradable organic waste is slow, or virtually absent, and entrapment in ice or snow of waste matter significantly increases the persistence, over time, of discarded matter.[68]

In such an environment, and with little oversight, many environmentally unsound principles have been practiced over the years. The ATP did include as an agenda item at their biennial meetings, "Man's impact on the Antarctic environment." However, until environmental groups such as Greenpeace and the Environmental Defense Fund publicized the extent of manmade pollution in Antarctica--such as "pouring raw sewage into the sea," toxic chemical wastes, and leaking fuel tanks--cleanup efforts were marginal.[69] "The waters right off...[the United States' McMurdo Station] are reportedly more polluted with substances such as heavy metals and PCBs than any similar stretch of water in the U.S."[70] As one National Science Foundation member noted, "'The negative press made us accelerate our cleanup'", and

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[68]Congress, Senate, Committee on Commerce, Science and Transportation, Subcommittee on Science, Technology, and Space, Protecting Antarctica's Environment, 101st Cong., 1st sess., 1989, p. 44,

[69]Michael Tobias, "On Leaving It Alone: The Case for an Untainted Antarctica," Greenpeace, 1988, Vol. 13, No. 1, p. 8.

[70]Michael D. Lemonick, "Antarctica," Time, 15 January 1990, p. 61.

the NSF hopes "to correct sins of the past."[71] ATP concern has not been with environmental cleanup, but rather with a broad mandate to "refrain from activities having an inherent tendency to modify the Antarctic environment unless appropriate steps have been taken to foresee the probable modifications and to exercise appropriate controls with respect to harmful environmental effects;...[as well as] continue to monitor the Antarctic environment and to exercise their responsibility for informing the world community of any significant changes in the Antarctic Treaty Area caused by man's activities."[72] Until non-governmental agencies were able to finance expeditions to Antarctica, there were no unbiased observers in Antarctica to determine if in fact the ATP were notifying the world community of the environmental effects of their presence in the region.

D. CONCLUSIONS

The issues which have been examined each have the potential to disrupt the Treaty System. The intensity by which each issue is viewed by a particular nation varies greatly, but none of the issues is without controversy. The manner in which they may finally be resolved is at the

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[71] "The World's Frozen Clean Room," Business Week, 22 January 1990.

[72] SCAR Bulletin No. 58, January 1978, "Report of the Ninth Antarctic Treaty Consultative Meeting, London, 1977," Polar Record, January 1978, p. 93.

center of preparation for an Antarctic Treaty review. It is not a question "If" these issues will come up again, it is "When", and will the U.S. have a well-defined position from which to negotiate?

IV. NEGOTIATING POSITIONS OF PARTICIPANTS

Negotiation can be described as "the use of information and power to affect behavior within a 'web of tension'".[73] There are three crucial elements in any negotiation--time, power, and information.[74] The ability to determine negotiating positions is not an easy task in any situation. If an adversary's position could be easily learned, the negotiating process would proceed rapidly, as the final position to be taken would already be known. In a sense, the negotiating process could be dismissed and the "bottom lines" of each party either accepted or rejected. Determining the negotiating positions of Antarctic Treaty Parties is even more difficult, as most of their meetings are conducted in private (therefore, information is limited), and only the final reports of the meetings are published. Information for this chapter was found in newspaper and magazine articles and interviews, government publications, and significant works by authors actively involved in the political process represented by the ATS. The positions of the consultative parties must provide the initial point of view to be examined as their positions most directly affect the outcome of any negotiation. Non-

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[73] Herb Cohen, You Can Negotiate Anything (New York: Bantam Books, 1980), p. 15.
[74] Ibid., p. 50.

consultative parties, as well as countries not involved in the ATS, too, have roles to play in any future negotiations and also require analysis. The positions of nongovernmental agencies is another factor which must also be considered as a U.S. negotiating position is formulated. Consultative parties provide the beginning point.

A. CONSULTATIVE PARTIES

Consultative parties to the Antarctic Treaty include the original 12 signatories, as well as an additional nine countries which have "conducted significant scientific research in Antarctica", and have been voted (unanimously) into the ATS. These positions will be briefly examined, beginning with the original 12 (less the U.S. which will appear later in this section).

1. Argentina

Argentina has a long and extensive history in Antarctica and has been, along with its South American neighbor, Chile, one of the most vocal Treaty members. The Argentine "official" claim to portions of Antarctica was made 15 July 1939, and has been continually bolstered over the years by every means available. Small colonies have been established, babies have been born in "Argentine Antarctica", sovereignty exercised, all to further solidify Argentina's claims in the Antarctic. "Geopolitics" is an important concept in South American literature, and its

effects are evident in Argentina's (as well as Chile's) policies in Antarctica. Scholar Jack Child wrote that in examining "Southern Cone Antarctic geopolitics", one must "stress that geopolitics is really the relationship between power politics and geography....Thus, we would have to add factors of national power (including military ones) and a strong dose of patriotism and even chauvinism."[75] This aspect must be evaluated in any discussion of Treaty changes.

An additional factor which was relevant during initial treaty negotiations in the case of Argentina, as well as other Southern Hemispheric nations such as Chile, Australia, New Zealand, and South Africa, was the fear that the Soviet Union would establish military bases in Antarctica--bases from which missiles could be fired, reaching points in the Southern Hemisphere. This fear has been overtaken by technology, as deployed Soviet nuclear submarines can now launch missiles which are capable of reaching any point in the world. South Hemispheric countries may not want Soviet (or any other) military bases in Antarctica, but the reason can no longer be attributed to fear of nuclear missile bases.

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[75]Jack Child, Antarctica and South American Geopolitics: Frozen Lebensraum (New York: Praeger Publishers, 1988), p. 22.

2. Australia

As one of Great Britain's former colonies, Australia has understandably supported many of Great Britain's positions with regard to Antarctic matters. In recent years, however, Australia has increasingly taken a different point of view from that of Great Britain or the U.S. The recent discussion of the minerals convention provides insights into the Australian position toward Antarctica. In 1988 Australia's Foreign Minister Evans noted that in evaluating the proposed minerals convention, "the government...would take into account its principal Antarctic objectives, which include keeping the region free from strategic and political confrontation, preserving Australia's sovereignty over the Australian Antarctic territory, protecting the Antarctic environment, and taking advantage of the special opportunities offered for scientific research."[76] The Australian government's initial position taken in 1988, has not softened since that time. It has instead taken an even harsher stance against the minerals convention, to the dismay of many who had already signed the Wellington Convention, such as New Zealand, the United States, Britain, Argentina, Chile, and

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[76]"Australia in No Hurry to Sign," Hong Kong AFP, 25 November 1988, as cited in FBIS-EAS-88-228, 28 November 1988, p. 1.

Norway.[77] Subsequent reports and news articles chronicled the Convention's debate in Australia, among its conservationists, government, and neighbors, as well as between the signatories themselves. At one point, a U.S. State Department official said that Australia would "cave in and sign the convention...."; Australia's Prime Minister Hawke made it very clear that this would not be the case, and instead expressed optimism that Australia's proposed "wilderness park plan" would be accepted by the ATS.[78] The significance of this issue with regard to the Antarctic Treaty is that Australia has taken a very pro-environmental position against any type of mining, in direct opposition to the U.S. position. Some see the "disunity" within the ATS, as created by debate over CRAMRA, as having significant implications for "the Antarctic Treaty system as a whole in the 1990s..." in that it is likely to "herald a review of the Antarctic Treaty in the period after 1991."[79]

3. **Belgium**

While not a territorial claimant, Belgium considered its early explorations of Antarctica ample enough reason for

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[77] "Australia Asked Not to Veto Antarctic Accord," Melbourne Overseas Service, 23 May 1989, as cited in FBIS-EAS-89-100, 25 May 1989, p. 60.

[78] "Hawke Wants Antarctic Declared Wilderness Park," Hong Kong AFP, 13 September 1989, as cited in FBIS-EA89-177, 14 September 1989, p. 67.

[79] S. K. N. Blay and B. M. Tsamenyi, "Australia and the Convention for the Regulation of Antarctic Mineral Resource Activities (CRAMRA)," Polar Record, July 1990, p. 201.

it to be included in the original negotiations of the Antarctic Treaty.[80] Eventually the U.S. agreed, as Belgium was actively involved in the IGY in Antarctica, and Belgium was among the 11 nations invited to participate in Antarctic Treaty negotiations. Though Belgium is a small nation with limited international influence, it has taken a strong stand against mining in Antarctica, describing "CRAMRA as 'dangerous and inappropriate'", while also passing legislation which "stop[s] any Belgian national or corporation from mining or prospecting in Antarctic."[81] It can be charged that the Belgium government can take the "high moral" ground in Antarctica's case, as Belgium has not been involved in any significant Antarctic research for some time, primarily due to lack of funds.[82] Nevertheless, its status as an original signatory give it a certain power which countries acceding to the Treaty do not enjoy.

4. Chile

Chile bases its claims to Antarctic territory on the same principles as Argentina--discovery, occupation, possession, and proximity. A recent meeting of Chile's Antarctic Policy Council provided an opportunity for Chile to "...reiterate the three traditional guidelines of the Chilean Antarctic policy: to defend Chile's sovereign

[80] State, Foreign Relations 1948, vol. 1, p. 1010.
[81] Hobart Mercury, 7 July 1989, as cited in "Australia and the Convention...," Polar Record, p. 195.
[82] Beck, International Politics, p. 193.

rights, to defend the Antarctic Treaty and the system it created. and to protect the environment and the ecosystems."[83] As the "first South American country to make an Antarctic claim,"[84] Chile defines its jurisdiction in Antarctica on the basis of a study completed by the Chilean Antarctic Commission (CAT) in 1940.[85] Portions of Antarctic territory claimed by Chile are also claimed by Argentina, an issue exacerbated by a history of past territorial disagreements.[86] The two nations have, on occasion, shelved the differences between themselves to present a united front against threats from outside their region. Both countries espouse similar policies toward Antarctica, evident during a recent Chilean Antarctic Policy Council meeting, at which the participants "reiterate[d] the three traditional guidelines of the Chilean Antarctic policy: to defend Chile's sovereign rights, to defend the Antarctic Treaty and the system it has created, and to protect the environment and the ecosystems."[87] Chile

[83] Francisco Eterovic, "Antarctic Policy Council Meets at Marsh Base," El Mercurio 20 January 1990, as cited in FBIS-LAT-90-028, 9 February 1990, p. 42.
[84] Philip Kelly and Jack Child, eds. Geopolitics of the Southern Cone and Antarctica (Boulder, Colorado and London: Lynne Rienner Publishers, 1988), p. 176.
[85] Luis H. Merico, Antarctica: Chile's Claim (Washington, D.C.: National Defense University, 1987), p. 93.
[86] See Howard T. Pittman's description of the Beagle Channel dispute in "Applied Geopolitics in Chile," Kelly and Child, eds., Geopolitics of the Southern Cone.
[87] "Antarctic Policy Council Meets at Marsh Base," El Mercurio, 20 January 1990, as cited in FBIS-LAT-90-028, 9 February 1990, p. 42.

continues to see itself as a prominent player in Antarctic politics.

5. France

The French territorial claim is based on the discovery of, what has come to be known as, "Adelie Land", in 1840, by the French explorer, Dumont d'Urville. Subsequently, action was taken to formalize the claim through possession.[88] France has not been one of the more active ATS members. Its territorial claim is the smallest of those made, and it maintains only one year-round research station. However, the reversal of its original position of support for CRAMRA has brought its Antarctic policies into the spotlight. In a joint statement made with Australia in June 1989, it was noted that the two countries' agreement on Antarctica was "part of an initiative being discussed...to launch a comprehensive campaign to help protect the world environment."[89] France's stated position of protecting the Antarctic environment has been regarded with suspicion by some environmental groups, which note that France's construction of an airstrip at its Adelie Land base is unnecessary and extremely disruptive to the natural

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[88] State, Foreign Relations 1939, vol. 2, p. 4.
[89] "Mitterrand, Australia's Hawke on Antarctic Mining," Melbourne Overseas Service, 20 June 1989, as cited in FBIS-WEU-89-118, 21 June 1989, p. 8.

environment.[90] The "independent" nature of French politics makes it difficult to predict their position if the Treaty were reviewed.

6. Japan

Japan was forced to renounce all territorial claims in Antarctica as a result of the Treaty of Peace, signed in September 1951. It has however, maintained an active role in Antarctic affairs, established by its participation in the Third International Geophysical Year. Economically, Japan is extensively involved in whaling and fishing in the southern oceans, as is the Soviet Union. Japan's intensive whaling in Antarctic waters has been, on occasion, a sensitive issue between the U.S. and Japan with sanctions threatened by the U.S. against the Japanese fishing fleet.[91] Japan's interest in Antarctica is evidenced by its extensive research activity. Japan does, however, appear to maintain a subdued profile in regard to public statements concerning Antarctic resources. It could be inferred from a recent article written by Japanese Prime Minister Kaifu, in which he reiterated his "goals of the new international order", that the continued enforcement of the

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[90] Greenpeace International, "Report on a visit to Dumont d'Urville, Antarctica," Polar Record, January 1990, pp. 51-53.

[91] "U.S. Urged To Reconsider Whaling Sanctions," Tokyo KYODO, 20 February 1988, as cited in FBIS-EAS-88-034, 22 February 1988, p. 3.

Antarctic Treaty would actively support and enhance those goals.[92]

7. **New Zealand**

New Zealand's territorial claims came about as the result of annexation of portions of territory claimed by Great Britain. New Zealand has provided the last stopping off place for U.S. expeditions for at least 50 years, and as such is quite significant in U.S. Antarctic policy. The continuation of New Zealand's support is important for U.S. Antarctic operations, as there are few alternatives, namely Chile or Argentina. With regard to New Zealand's position on mineral resources in Antarctica, as it was the depository for CRAMRA, New Zealand was initially quite distressed when its neighbor, Australia, indicated its unwillingness to sign the Convention. Since that time, "the New Zealand Government has decided to put aside consideration of ratification of the Antarctic Minerals Convention, and focus on creative ways of breaking the impasse which currently exists over mining in Antarctica and the development of an environmental protection regime for the Antarctic environment."[93] This policy was announced in February 1990 by New Zealand's Prime Minister Palmer.

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[92] Toshiki Kaifu, "Japan's Vision," Foreign Policy, Fall 1990, p. 31.

[93] "Antarctic Update," New Zealand External Relations Review, January-March 1990, p. 19.

8. **Norway**

Norway's territorial claim was established in 1939, on the basis of past explorations. Norwegians had for years been whaling in Antarctic waters, and it was the Norwegian Roald Amundsen who "discovered" the South Pole. Author Peter Beck contends that Norway's actions in Antarctica are tempered by its fear of Soviet actions in the Arctic, "on account of the long-standing tendency to interpret legal and other inter-connections between the two polar regions."[94] This implied if the Soviets were allowed to establish military bases in Antarctica, they could do the same in the Arctic, much too close for Norwegian comfort. If this is an accurate assessment, recent changes in the international environment should ease Norwegian fears.

9. **South Africa**

South Africa regards Antarctica as *terra nullius* and therefore, makes no claim, nor recognizes the claims of others in Antarctica. As with Belgium and the U.S.S.R., which were excluded from preliminary discussions of Antarctica because they had not advanced claims to Antarctica, South Africa made known its interest in participating in "any organization or machinery which may be devised to control and administer the Antarctic Continent."[95] In the final invitation issued by President

[94] Beck, International Politics, p. 40.
[95] State, Foreign Relations 1948, vol. 1, p. 1009.

Eisenhower in 1958, South Africa was included as a participant, and become one of the original signatories. In 1959, South African membership presented few problems, but in the 1980s, the issue of apartheid made its participation difficult in some cases. In particular, South African participation within the ATS has provided opponents of the Antarctic Treaty fuel to challenge the system as a whole. In 1986, opponents of the Treaty sponsored three resolutions in the UN with regard to Antarctic Treaty System, one of these "indicated concern about the continuing participation of South Africa as an ATCP and urged other ATCPs to exclude it at the earliest possible date."[96]

10. Soviet Union

During initial discussions of Antarctica, a driving point of U.S. policy thinking was to keep the Soviet Union from being involved in any way. As Acting Secretary of State Lovett wrote to the British Ambassador in 1948, "...no occasion should be given to the Soviet Union to participate in an Antarctic settlement or administration."[97] The U.S.S.R. however, was not to be so summarily excluded. In February 1949, the All-Union Geographic Society of the U.S.S.R. "passed a resolution stating that any decision affecting the Antarctic regime without Soviet participation

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[96] P. J. Beck, "The United Nations and Antarctica 1986," Polar Record, September 1987, p. 687.

[97] State, Foreign Relations 1948, vol. 1, p. 974.

would lack legal force and the USSR had every justification not to recognize such decisions."[98] The Soviet Union established its right to participate in discussions regarding the Antarctic based on "discovery" in 1819-21, by Russian navigators, Bellingshausen and Lazarev, and was also interested because of its whaling industry.[99] The Soviet Union took the position, similar to that of the United States, that it could make territorial claims if it chose to do so, while at the same time, it did not recognize the territorial claims of others. During Antarctic Treaty negotiations the Soviets were accused of being "intransigent" on several issues, such as rules of procedure, topics, and participation. The Soviets were the only delegation which "argued strongly for full participation, even in the preparatory talks, of all countries that expressed interest."[100] The Soviet delegation also supported "unanimity" in voting procedures, instead of the "majority" which the U.S. and United Kingdom advocated.[101] The "unanimous", consensus rule was adopted in Article X11. On a more recent note, there have been calls in the Soviet press for a "Change of Policy on Antarctica." The author argues that by signing CRAMRA, the

[98] State, Foreign Relations 1949, vol 1., p. 794. Bush, Antarctica and International Law, vol. 3, p. 207.
[99] State, Foreign Relations 1950, vol. 1, p. 912.
[100] Peter J. Beck, Preparatory Meetings for the Antarctic Treaty 1958-59," Polar Record, September 1985, p. 657.
[101] Ibid., p. 662.

Soviet Union is taking a short view of a long-term problem. He advocates joining France and Australia's stand against mining and prospecting.[102] This view is in contrast to the perhaps more realistic view taken by another Soviet when discussing the mining in Antarctica.

> 'Expensive? Very! And there would also be the transportation of minerals to, for example, Japan, which is almost devoid of natural resources. But who know how much that same ton of coal will cost on the world market in a hundred years?!'[103]

The Soviet position, as in the past, proves difficult to anticipate.

11. United Kingdom

Britain has been one of the most active participants in Antarctic exploration, research, and "presence" since Cook's discovery in the late 1700s. The United Kingdom was the primary party with which the U.S. established Antarctic policy, usually to the detriment of the two other major players, Chile and Argentina. In addition to the standing territorial disputes between Chile, Argentina, and Great Britain, the British government expressed concern, in 1948, "that on strategic grounds it would not be desirable that

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[102] A. Bovin, "Political Observer's Opinion: The Antarctic Must Be Saved!", Moscow IZVESTIYA, 8 December 1989, as cited in FBIS-SOV-89-238, p. 12.

[103] O. Popov, "Zachem Lyudyam Antarktida? (Why Do People Need Antarctica?)," Sotsialisticheskaya Industriya (Socialist Industry), 14 August 1977, p. 4, as cited in Soviet Perceptions of the South Pacific and Antarctic Regions: An Examination of Unclassified Soviet Sources, Defense Intelligence Agency, January 1980, p. 76.

countries like Argentina and Chile, in the light of their record in World War Two, control islands which could dominate the open water passage south of Cape Horn."[104] The U.S. did not concur with this evaluation, but did maintain closer ties regarding Antarctica with the British, than either of its two hemispheric neighbors. The U.S. and Great Britain have worked closely together in the past on most Antarctic issues, and there is no reason to assume that relationship will change.

12. Other Consultative Parties' Positions

There are an additional nine nations which have gained consultative status and have thus, earned the right to vote on Antarctic Treaty matters. These nations are Poland, Brazil, China, India, unified Germany, Spain, Sweden, Italy and Uruguay. With the exception of Poland, which was granted consultative status in 1977, these nations were accorded consultative status within the past ten years, five of them within the last five years. In many cases, their positions on Antarctica are difficult to ascertain, as the historical perspective is limited. As with the positions of the original signatories, newspaper and magazine interviews, public statements by government officials, as well as works by Antarctic experts, provide

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[104] State, Foreign Relations 1948, vol. 1, p. 963.

the basis from which to formulate and articulate these countries' current positions on Antarctica and the ATS.

Poland had wanted to be included as one of the original signatories but was forced, instead to accede to the Treaty in June 1961. Poland was eventually able to fulfill the requirement of establishing and maintaining a year-round research station in Antarctica, and became a consultative party in 1977. The Federal Republic of Germany became the next consultative party in 1981, followed in 1983 by two leaders in the developing world, India and Brazil. The addition of these two nations greatly affected Treaty critics, which had previously viewed the ATS as a system of the "haves" keeping out the "have nots". From 1985 through 1988, six other countries attained consultative status: the People's Republic of China, Uruguay, the German Democratic Republic, Italy, Spain and Sweden. Only one consultative meeting, which was held in Paris in October 1989, has been conducted under this particular set of members, therefore again, little historical data is available. On the other hand, as the possibility of review approaches with the 1991 deadline, numerous articles have been written, some of which provide insights into these countries' positions on Antarctica. Wei-Chin Lee, a Chinese scholar has, despite "The secrecy of the minerals regime negotiations and the scarce publicity concerning Chinese Antarctic activities

[which] make a reliable examination of the Chinese position difficult....", nevertheless determined that with regard to Antarctica, the "PRC maintains a fairly internationalist line and favors U.N. involvement."[105] China is not the only consultative party to take an "internationalist line". India has also indicated its "global perspective" with its support of the "world park" concept advocated by Australia and France. Italy, too, has indicated its support of the "wilderness reserve" concept,[106] a concept compatible with statements made when Italy became a consultative member in 1987. At that time, Italy indicated its admission into the ATS was a "'gratifying but well deserved recognition of the high level of research in various scientific fields Italy conducts in the Antarctic.'...which aims at the protection of the ecosystem of an environment fundamental for life on the planet."[107] Brazilian geopoliticians, on the other hand support their South American neighbors' positions when they "speak of a three-pronged national interest in Antarctica: security, ecology, and economics."[108] This appears to be the more pragmatic

[105]Wei-Chin Lee, "China and Antarctica: So Far and Yet So Near," Asian Survey, June 1990, p. 583.
[106]"Italy To Endorse Antarctic Wilderness Plan," Rome ANSA, 11 October 1989, as cited in FBIS-WEU-89-197, 13 October 1989, p. 1.
[107]"Italy Takes Part in Antarctic Treaty Meeting," Rome ANSA, 8 October 1987, as cited in FBIS-WEU-87-197, 13 October 1987, p. 14.
[108]Kelly and Child, South American Geopolitics and Antarctica, p. 199.

view, which leaves all options open for Brazilian politicians and statesmen.

B. ACCEDING PARTIES

Acceding nations are, not unexpectedly, less vocal in their positions on Antarctic issues. Unable to vote, and only recently permitted to attend consultative meetings as observers,[109] acceding nations' remarks are tempered by the knowledge that they can only become "consultative parties" if, after conducting substantive scientific research in Antarctica, they are unanimously approved by the current consultative party membership. The incentive to "conform" is considerable.

C. "THE OUTSIDERS"

Countries outside the Antarctic Treaty System have been extremely vocal in criticizing the Treaty. The UN has provided the most accessible forum for this criticism. Peter J. Beck has written extensively on the relationship between the U.N. and the Antarctic Treaty Parties since 1983, when "The Question of Antarctica" appeared on the U.N. agenda. As Beck noted, "Since 1983 the international community has moved from dialogue on the 'Question of Antarctica' towards polarization, because of the contrasting views of the Antarctic Treaty Consultative Parties (ATCPs)

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[109] SCAR Bulletin, "Fifth Special Antarctic Treaty Consultative Meeting, Canberra, 1983," Polar Record, January 1984, pp. 102-103.

and other governments on the future management of the area, the conduct of the minerals regime negotiations, and South African participation in the ATS."[110] This situation has not significantly changed.

D. U.S. POSITION

1. Past

U.S. policy in Antarctica has vacillated over the past century. As with all policy issues, changes in the Administration brought changes in Antarctic policy. W.M. Bush identifies

> "four official attitudes this century by the United States to claims [the sovereignty issue]: the period up to 1924 when it seemed to have no formulated policy; from 1924 to the mid 1930's when it came close to denying the possibility of claims by any country to Antratica [sic]; from the mid 1930's to the beginning of the International Geophysical Year in 1957-58 when it encouraged its nationals to claim territory on its behalf and lastly from the International Geophysical Year to the present when it has set its face against making a claim and instead has given full support to an international regime of co-operation and a moratorium of claims and bases of claims."[111]

In the late 1940s, when Antarctica was becoming more of an issue, the U.S. evaluated Antarctica's "value". Secretary of Defense Forrestal and the Joint Chiefs of Staff thought it was of "little apparent strategic value to the United States now....however,...its future strategic value

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[110] Peter J. Beck, "Another Sterile Annual Ritual? The United Nations and Antarctica 1987," Polar Record, July 1988, p. 207.

[111] Bush, Antarctica and International Law, vol. 3, p. 420.

(including natural resources) to the United States or to our [U.S.] most probable enemies cannot be accurately predicted at this time."[112] Secretary Forrestal continued that "from a military standpoint, two factors appear to be of paramount importance in determining United States policy with respect to the Antarctic."[113] These two factors were Antarctica's proximity to likely U.S. allies, such as Australia, New Zealand, South Africa, Argentina and Chile, if a war broke out. And second, control of Cape Horn, which would become critical if the Panama Canal were closed. In a later memo, the Joint Chiefs of Staff noted their main concern was that Antarctica be controlled by friendly powers and exclude from control any probable enemies.[114] Based on these and other assessments, the U.S. sought to have international control established over Antarctica. This, as has been previously stated, met with marked resistance from most countries with territorial claims in Antarctica.

2. Present

U.S. goals in Antarctica have remained basically the same since the Treaty was signed. These are "to maintain the Antarctic Treaty, to ensure that the continent continues to be used only for peaceful purposes, to foster cooperative research contributing to the solution of regional and world-

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[112] State, Foreign Relations 1948, vol. 1, p. 971-72.
[113] Ibid., p. 972.
[114] Ibid., p. 991.

wide problems, and to ensure the equitable and wise use of living and nonliving resources."[115] On a more "capitalistic" list, the goals are to maintain the region as a zone of peace, preserve freedom of scientific research and the Antarctic environment, and to provide "an opportunity for U.S. private industry to exploit Antarctic resources if and when it becomes feasible and appropriate."[116] Hence, the U.S. support of CRAMRA, which the U.S. signed but was not able to ratify.[117]

3. Future

For the foreseeable future, the United States wants Antarctica to remain *status quo*. Until or unless, a major oil field, or some equally significant resource, is discovered, it is in the U.S. best interests that the Treaty remain in effect, as it has been a remarkably strong stabilizing factor in international politics. If, however, a review is called for in 1991, the U.S. should be prepared to address the following issues. First, the question of sovereignty may be blown wide open. If it appears that the current consensus cannot be maintained and that those countries with territorial claims intend to operate outside the ATS, the U.S. must establish its territorial claims, for

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[115] Senate, Protecting Antarctica's Environment, p. 47.
[116] Office of Technology Assessment, Polar Prospects: A Minerals Treaty for Antarctica (Washington, D.C.: Government Printing Office, 1989), p. 8.
[117] Shabecoff, "U.S. Seeks Ban," p. A4.

which the foundations were laid in the 1930s and 1940s. This step is to "shock" ATCPs into taking a second look at the consequences of abandoning the current system. The U.S. can always suspend its claims if a consensus can be reached. Second, the U.S. should reevaluate the position of the UN in Antarctic matters. Although not supportive of the "Heritage of Mankind" concept, the U.S. may find that, in light of the potential disintegration of the ATS, that the UN position may be the most advantageous in the long run. If conflict could be avoided in Antarctica, the price of UN involvement might be worth paying. These two options, establishing territorial claims and/or allowing UN participation, are in the event of the worst case scenario, the Treaty fails. If however, in 1991 the Treaty is extended, but certain provisions are added or changed, the U.S. should consider the following issues, keeping in mind the three crucial components of negotiation--time, power, knowledge. First, the U.S. suffers under time constraints, only in that another country may, during "scientific research", discover mineral resources in quantities significant enough for the world market. The feasibility of mining and transporting cost-effective quantities of minerals remains unlikely for the next several decades at least. The U.S. "power" component has somewhat diminished since negotiations in 1958-59, as the number of countries interested and capable

of participating in Antarctica has grown. This aspect requires a certain sensitivity to developing and newly developing countries' concerns. Knowledge of Antarctica is an aspect in which the U.S. excels, as do Japan, the U.S.S.R., and Great Britain. These countries have the most extensive Antarctic research facilities and the funds and technology to support scientific research. Perhaps if those critics of the ATS had the opportunity to participate with ATCPs in research, they might better accept the current system. Fear and distrust are often products of limited or inaccurate information, and the U.S. is in the position to actively dispel some of the misconceptions held by those outside the ATS.

Overall, it is in the U.S. best interests for the Antarctic Treaty to remain in effect. While the U.S. maintains that its interests are primarily concerned with scientific research, when resources that the U.S. wants or needs become apparent, its "interests" will change. Freezing the *status quo* for another 30 years might be the best course to pursue, while the technology develops which will make Antarctic resources more accessible.

V. IMPLICATIONS FOR THE U.S. NAVY

How might a review, or renegotiation, of the Antarctic Treaty affect the U.S. Navy? Should the Navy be concerned with the review? One can postulate two alternatives in the event of a Treaty review--the *status quo* continues with no significant changes for the Navy, or the Treaty breaks down and Antarctica comes open for territorial disputes. In the event of the latter, due to lack of proximate land bases, the U.S. Navy would be the most likely candidate to be used if military force were required. This possibility is reinforced by the depth of the U.S. Navy's continuing involvement over 40 years in support of Antarctic operations.

In the first case, naval planners might want to take the opportunity to reevaluate the Navy's role in Antarctic support. Does another service or civilian organization potentially offer better or more practical support than the Navy? How could the Navy more effectively support the National Science Foundation? Basically, reexamine why the Navy is the primary U.S. support service in Antarctica, potential alternatives, and whether it is to the Navy's advantage to continue in this role? In the case of the second scenario, the Navy would definitely be involved. Sealift, blockade or quarantine, and sea control, (especially emphasizing antisubmarine warfare), are representative naval missions which might be required if

U.S. military action were contemplated in Antarctica. What factors would affect the Navy's ability to fulfill these missions raises a question which will be answered in the following pages. First, however, a brief history of past naval activities in Antarctica is necessary.

A. PAST

The U.S. Navy has an extensive history of Antarctic operations. Operation HIGHJUMP, "...the code name for the U.S. Naval Antarctic Developments Project of 1946-47, [was] the single most massive assault on Antarctica undertaken by any nation before or since...." and included 4,700 U.S. servicemen.[118] Ostensibly designed to map Antarctic terrain and practice cold weather fighting tactics, it also gave the military "something to do" and thus "solve[d] the problem of postwar demobilization."[119] This operation was followed in 1947-48 by Operation WINDMILL, a "task force of two ships", assigned to determine "the exact geographical location of certain mountains, capes, and other landmarks that could be used to 'tie in' with the aerial photographs"[120] taken during Operation HIGHJUMP. Operation DEEP FREEZE, undertaken in 1955-56, was the next significant Antarctic operation. Assigned to support the upcoming International Geophysical Year scheduled for 1957-58, "3 icebreakers, 3 cargo vessels, an oil tanker, and 2

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118 Shapley, The Seventh Continent, p. 51.
119 Ibid.
120 Paul W. Frazier, Antarctic Assault (New York: Dodd, Mead & Company, 1958), p. 3.

oil barges" sailed to Antarctica, with the goal of constructing two bases, one the Little America Station at Kainan Bay on the Ross Ice Shelf, the other, the naval air facility for logistics support at Hut Point, Ross Island, in McMurdo Sound.[121] The following year saw Operation DEEP FREEZE II. The primary difference between DEEP FREEZE I and II was "the magnitude of the second operation."[122] This time, "5 cargo ships, 4 icebreakers, 1 tanker, 1 transport for personnel, and 1 destroyer-escort which served as picket ship during airlift operations" voyaged to Antarctica, where five new bases were successfully constructed.[123] As a consequence of its ability to successfully prepare Antarctica for the influx of scientists and support personnel during the Third IGY, the Navy established its preeminence in Antarctic support.

B. PRESENT

Subsequent to the IGY, was the negotiation, signing, and ratification of the Antarctic Treaty. A measure of the importance placed on nonmilitarization of Antarctica appears in the Treaty's first Article, which strictly forbids "any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of

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[121] Congress, House, International Geophysical Year, p. 127.
[122] Frazier, Antarctic Assault, p. 149.
[123] Congress, House, International Geophysical Year, pp. 127-128.

weapons."[124] Article I does, however, allow for "the use of military personnel or equipment for scientific research or for any other peaceful purpose."[125] This stipulation allows the Navy to continue in its support role, established almost four decades ago. The support group currently functions from the west coast (Port Hueneme and Point Mugu in California), having transferred units from the east coast (Davisville and Quonset Point, Rhode Island) and consolidated CONUS-based support operations in the early 1970s. Forward staging of support operations has been from Christchurch, New Zealand.

C. **FUTURE**

Antarctica, as an area to be "used for peaceful purposes only", is, according to the Unified Command Plan, "unassigned" to a specific command.[126] Commander in Chief Pacific (CINCPAC) does provide logistical support to the National Science Foundation on a reimbursable basis, but that is the primary extent of U.S. "military" operations in Antarctica. If a military crisis occurred in Antarctica, the learning curve for military operations would be substantial, but not insurmountable. Evaluation of naval capabilities in the following areas provides some indication of the difficulties which could be expected in Antarctic operations.

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[124] TIAS 4780.
[125] Ibid.
[126] Mexico and Canada are also "unassigned" regions under the Unified Command Plan.

1. Antisubmarine Warfare Capabilities

In discussing problems experienced by Operation HIGHJUMP (1946-47), author Deborah Shapley noted that

> the submarine *Sennet* was sent with the fleet, but it proved to be a disaster in the pack ice; because it dared not submerge, the ice piled up on the sloping bow. When an icebreaker moved alongside to cut the stricken sub free from the ice, it nearly crushed the delicate, low hull. The *Sennet* was towed into open water, and that was the last time anyone seriously considered sending a submarine into the Antarctic pack.[127]

Since that time, quite significant advances have been made in submarine under-ice operations.[128] The Antarctic Treaty has also been signed since Operation HIGHJUMP, a factor which essentially puts waters south of 60 degrees latitude "off limits" to military maneuvers, hence no submarine has operated in Antarctic waters since the *Sennet*.[129] This presents several interesting possibilities. First, in the event of hostilities in Antarctic waters, all participants would commence operations with similar levels of familiarity with Antarctic waters. Countries which have conducted more off-shore "research", such as Japan or the Soviet Union, may have slightly more information regarding the sea bed, but actual submarine operations should be equal--zero.

Some operators assume that ASW in Antarctic waters would be similar to ASW in the Arctic Ocean, after all, they are

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[127] Shapley, The Seventh Continent, pp. 51-52.
[128] Arctic operations are a significant example.
[129] Alfred S. McLaren, "Save the Sturgeons to Study Global Change," U.S. Naval Institute Proceedings, October 1990, p. 108.

both cold places, and the area of each is approximately 5,400,000 square miles. However, the Arctic is an ocean surrounded by land, whereas Antarctica is land surrounded by water, a fact which is sometimes lost in the analogy. In addressing ASW, author Tom Stefanick writes, "There are several essential tasks involved in destroying a submarine: detection, classification, localization to a small area, and destruction."[130] In the event the U.S. were conducting ASW against hostile submarines in Antarctic waters, "detection" would probably prove the most difficult step. In comparing ice cover between the Arctic, a known operating arena, with that of the Antarctic and the unknown, a significant fact is evident.

> In the majority of all years, the ice cover of the arctic waters reaches the maximum size in March, a bit less than twice the minimum of September. In the south-polar regions, the variation in size is much greater. In September the sea ice belt around the continent is about six to eight times as large as the covered area in March.[131]

ASW operations would be conducted most advantageously during Antarctica's spring and summer. During the austral summer, the ice cover recedes with two exceptions: the Filchner Ice Shelf in the Weddell Sea, and the Ross Ice Shelf in the Ross Sea. Each of these ice shelves would provide excellent cover for both friendly and hostile submarines. Key U.S.

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[130] Tom Stefanick, Strategic Antisubmarine Warfare and Naval Strategy (Lexington, Massachusetts: Lexington Books, 1987), p. 4.

[131] Werner Schwerdtfeger, Weather and Climate of the Antarctic (Amsterdam: Elsevier Science Publishers B.V., 1984), p. 227.

stations (McMurdo Station and Little America) are situated on or near the Ross Ice Shelf, a significant fact in local area defense planning.

At the opposite side of the ASW/submarine spectrum, instead of hunting "hostile" submarines in Antarctica, is the issue of their legitimate use there. A recent article by Dr. Alfred S. McLaren, retired Navy captain and associate professor at the University of Colorado (Boulder), advocates using the *Sturgeon*-class nuclear attack submarine as a polar research vehicle.[132] Dr. McLaren notes the increased interest in "Antarctica's influence on atmospheric and oceanic circulation... [an influence] considered crucial by most authorities for understanding processes of global change."[16] His proposal offers two immediate benefits. It puts military defense equipment to a new use, still in "defense" but in a new way, "environmental defense"--a not insignificant idea in the current political environment of budget constraints and environmental concern.[133] At the same time, use of these submarines would allow the U.S. to explore and research an unknown area--the waters surrounding Antarctica--which might prove useful in a future military situation. Some signatories might question Dr. McLaren's

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[132] McLaren, "Save the *Sturgeons*," Proceedings, October 1990, p. 108.

[16] Ibid.

[133] Congress, House, National Defense Authorization Act for Fiscal Year 1991, 101st Cong., 2d sess., H.R. 101-923, 23 October 1990. Also, see speech given by U.S. Senator Sam Nunn, "Strategic Environmental Research Program," 28 June 1990.

assertion that "If the *Sturgeons'* torpedo tubes were rendered inoperational, these nuclear submarines would comply with the provisions of the Antarctic Treaty and should be acceptable as peaceful research vessels."[134] The Norwegians for one (ATS signatory party) might recall the sinking of the Soviet nuclear submarine, ***Komsomolets***, and challenge the U.S. operation of a nuclear submarine in the Antarctica.

2. Logistics

The Navy has provided logistic support for the National Science Foundation since 1957. Of all the U.S. military services, it has the most "corporate memory" to draw on if a crisis occurred in Antarctica. Weather conditions in Antarctica preclude all but emergency operations during March through September. As there are "only two hard runways in Antarctica capable of handling transport aircraft"[135], air operations are somewhat limited. The U.S. relies on Air Force C-141 aircraft and ski-equipped Navy LC-130 aircraft for logistical support. Huey helicopters (UH-1N) provide in-area transportation for research personnel while on the ice. As with most undertakings in Antarctica, the weather (cold and wind) provides the greatest challenge to logistic support. Ship operations face some of the same problems which hamper air

[134] McLaren, "Save the *Sturgeons*," Proceedings, October 1990, p. 109.

[135] Charles Swithinbank, "Antarctic Airways: Antarctica's First Commercial Airline," Polar Record, October 1988, p. 315.

operations. A major problem, though, facing U.S. Navy ships is the ice which surrounds Antarctica. Coupled with the fact that the U.S. has only two icebreakers remaining in its inventory,[136] the U.S. could be greatly disadvantaged by its inability to open a channel to resupply personnel in Antarctica. The Soviets, in comparison, have over 50 icebreakers at their disposal, a significant advantage in either Arctic or Antarctic operations.[137] Also, as was noted in an Antarctic Journal article written after the Argentine supply ship, *Bahia Paraiso*, ran aground and sank in early 1989:

> Although today's ice-strengthened ships and icebreakers and improvements in technology for navigation and ice-sensing have reduced the hazards of operating in antarctic waters, the need for caution has not been eliminated....[in addition to the *Bahia Paraiso*], the West German ice-strengthened research ship *Gotland II* sank off the coast of northern Victoria Land, and in January 1986 the private expedition ship *Southern Quest* sank near McMurdo Station. Unlike *Bahia Paraiso*, both these ships were crushed by the pack ice and sank in deep waters.[138]

This observation would be particularly applicable in times of crises, pointedly keeping in mind these accidents "occurred during the summer, the most benign season in Antarctica."[139] The Military Sealift Command currently

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[136] James F. Story, "Only Two Polar Icebreakers Left!", U.S. Naval Institute Proceedings, October 1989, p. 85.

[137] The Naval Institute Guide to Combat Fleets of the World 1990/1991: Their Ships, Aircraft, and Armament, ed. Bernard Prezelin (Annapolis, Maryland: Naval Institute Press, 1990), pp. 685-689.

[138] "Argentine Ship Sinks Near Palmer Station," Antarctic Journal of the United States, June 1989, p. 7.

[139] Congress, House, Protecting Antarctica's Environment, pp. 106-107.

schedules resupply ships for Antarctic operations from either its fleet or by charter from private companies. Demand for ice-strengthened ships could easily exceed the supply available.

Antarctic logistics are difficult under the best of circumstances. Commander, U.S. Naval Support Force, Antarctica, has decades of operational expertise in Antarctica, but in the event of hostilities, the Command would be hard pressed with available, specialized assets to support a force of significant size.

3. Miscellaneous Factors

Logistical support and ASW are just two of the many factors which would challenge military operations in Antarctica. Numerous other factors would also come into play. As previously stated, surviving in the Antarctic environment would require as much planning and preparation as surviving a hostile attack. The number of U.S. personnel currently supported in Antarctica ranges between 700 to 1,200 in the summer months.[140] During the wintering over period, the population drops to between 100 and 200. As author Deborah Shapley noted, Operation HIGHJUMP (1946-47) was, and remains, the largest "assault" on Antarctica with 4,700 personnel.[141] Any ground conflict in Antarctica would necessarily be limited by the operational environment.

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[140] Population figures are derived from annual reports issued by Commander, U.S. Naval Support Force, Antarctica, 1972-1985.

[141] Shapley, The Seventh Continent, p. 51.

Communication is another element of consideration in Antarctic operations. Sudden Ionospheric Disturbances (SIDs) occur which block out high frequency communications from hours to days. Potable water is also a factor for ground force operational planning. Even with stringent water conservation efforts, rationing is sometimes necessary. This appears to present a dichotomy as indicated by the following description of Antarctica.

> The antarctic plateau is one of the two largest deserts of the world, the other one being, of course, the Sahara....[while] as much as 75% of the total supply of fresh water on Earth exist in the form of ice, with 90% of this 'total available stock' lying in Antarctica.[141]

The point is, if the supply of available water is stressed during normal operations, what would the situation be during abnormal, crisis operations?

D. CONCLUSIONS AND CONCERNS

As with any military operation, there are numerous hazards and factors to be considered. However, in the case of Antarctica, not only must the usual difficulties be overcome, they must be overcome in the most hostile environment on earth.

In the event that military operations were required to support U.S. policy options in Antarctica, the following is an initial list of potential concerns (and unknowns) which would affect operational planning needs, and require further study.

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[141] Schwerdtfeger, Weather and Climate, p. 3. Hult and Ostrander, Antarctic Icebergs, p. 5.

1. **Military Preplanning:** Although presumably both USCINCPAC and USCINCLANT would become involved, no effective provision currently exists in either the Unified Command Plan or JSCP-tasked CINC Operational Plans.

2. **Command, Control, and Communications (C3):** While the extent to which C3 affected British naval operations during the 1982 Falklands War has previously been documented, no follow-on effort known to this researcher has been attempted which examines potential U.S. military operations in the even more remote regions surrounding Antarctica.

3. **Tactical Support Assets:** Lacking both studied research and significant recent military operational experience, it is unclear whether the "footprint" of U.S. space-based tactical support systems would enable them to support naval operations in any manner similar to that in less extreme latitudes.

4. **Remoteness From Land Bases:** The extreme distances involved in Antarctic operations and lack of proximate land based military support options, either operational or logistic, suggest that not only are naval forces the most likely option, but their operations would have to be planned quite differently from those in which periodic land-based support is a "normal" expectation.

5. **Tactical Employment Factors:** Due to all of the above factors, U.S. naval operations in such a "remote" area augur significant differences which, if not considered in preplanning and training exercises, could significantly

alter the effectiveness of such operations, in contrast to "reasonable expectations" in more temperate latitudes.

6. **Shock Effect:** Barring any changes in "normal" attitudes toward the aforementioned factors, the U.S. military could well find itself ill-prepared to deal with incipient problems stemming from military aspects of any dispute over Antarctic resources.

Although presumably any military power would face similar problems, significant advantage would accrue to that force which "gets a head start" on the planning timeline, with consequent effects on the related Indications and Warning equation needed to support prudent military action.

VI. SUMMARY AND CONCLUSIONS

The Antarctic Treaty has turned out to be much more than the "modest and limited attempt at international co-operation serving the...limited needs of Antarctica", that Professor August Miller Jr. wrote about in 1962, as he critiqued Antarctica's role in world affairs.[142] The Antarctic Treaty instead has been cited again and again throughout the international community, as a "model of international cooperation."[143] Or as Dr. Christopher Joyner wrote:

> The Antarctic Treaty is the preeminent international legal instrument embodying the twin processes of nonmilitarization and peaceful uses only. As such, the treaty stands as an exemplar for international cooperation and constructive diplomacy, particularly for promoting the reduction of military activities on a regional basis.[144]

The possibility of the Treaty's dissolution hopefully is remote, but recent international events point to the wisdom of preparing for the unexpected. As a British study group pointed out,

> The Antarctic Treaty was negotiated at a time when circumstances were propitious for concluding an agreement reflecting the delicate balance of interests which was required,...Circumstances now are very different, and there can be no confidence that a similar package, reflecting a similarly acceptable balance of

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[142] August C. Miller, Jr., "Antarctica--White Continent of Promise," U.S. Naval Institute Proceedings, August 1962, p. 57.

[143] Lee, "China and Antarctica," Asian Survey, June 1990, p. 576.

[144] Joyner, "Nonmilitarization of the Antarctic," Naval War College Review, Autumn, 1989, p. 98.

> political, strategic, scientific, and legal elements, could be concluded today.[145]

Circumstances are very different today than when the Antarctica issue was discussed in diplomatic circles of the 1940s and 1950s. Instead of 12 countries struggling to agree, negotiations today would at the very least involve the 21 countries which are consultative parties. At the very worst, the entire issue could be debated by all the Treaty signatories (currently 38 countries), as well as non-governmental agencies and/or all members of the UN. Consensus, the backbone of the Treaty, would be virtually impossible to achieve in any event. In light of the possibility of these circumstances, it behooves the United States to discourage any review of the Antarctic Treaty. The conflicts which would most certainly result from a review would in all probability destroy the ATS. The Convention for the Regulation of Antarctic Mineral Resource Activity is the best example to date of how difficult Antarctic negotiations are becoming. If the entire issue of Antarctica--sovereignty, territorial disputes, resource use--were to be renegotiated, there are too many factors which argue against its success. The sheer number of players, the extremely divergent views on resources and the environment, as well as, the political distrust inherent in the rising nationalism of the Third World. all serve to discourage hope for a "mutually acceptable solution." In the current

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[145] Anthony Parsons, Antarctica: The Next Decade (Cambridge: Cambridge University Press, 1987), p. 14.

international and technological environment, the United States' interests are best served by the present Antarctic Treaty.

Perhaps the most prudent "hedge" against alternative outcomes is to maintain a strong U.S. Navy, whose demonstrable capability might even provide a modicum of leverage, should negotiations come to that state of affairs. But, as noted in the Chapter V section on conclusions and implications, within clear treaty-imposed limitations it remains true that an "ounce" of preplanning prevention is worth a "pound" of operational cure. This reality, coupled with a broader concept of "defense of the environment", should be prime factors which underpin the U.S. negotiating stance to retain the current ATS *status quo*.

APPENDIX A

THE ANTARCTIC TREATY

The Governments of Argentina, Australia, Belgium, Chile, the French Republic, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America,

Recognizing that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Acknowledging the substantial contributions to scientific knowledge resulting from international cooperation in scientific investigation in Antarctica;

Convinced that the establishment of a firm foundation for the continuation and development of such cooperation on the basis of freedom of scientific investigation in Antarctica as applied during the International Geophysical Year accords with the interests of science and the progress of all mankind;

Convinced also that a treaty ensuring the use of Antarctica for peaceful purposes only and the continuance of international harmony in Antarctica will further the purposes and principles embodied in the Charter of the United Nations;

Have agreed as follows:

Article I

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons.

2. The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

Article II

Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

Article III

1. In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

(a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;

(b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;

(c) scientific observations and results from Antarctica shall be exchanged and made freely available.

Article IV

1. Nothing contained in the present Treaty shall be interpreted as:

(a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;

(b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;

(c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.

2. No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.

Article V

1. Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.

2. In the event of the conclusion of international agreements concerning the use of nuclear energy, including

nuclear explosions and the disposal of radioactive waste material, to which all of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties, the rules established under such agreements shall apply in Antarctica.

Article VI

The provisions of the present Treaty shall apply to the area south of 60 degrees South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.

Article VII

1. In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observers shall be nationals of the Contracting Parties which designate them. The names of observers shall be communicated to every other Contracting Party having the right to designate observers, and like notice shall be given of the termination of there appointment.

2. Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have

complete freedom of access at any time to any or all areas of Antarctica.

3. All areas of Antarctica, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated in accordance with paragraph 1 of this Article.

4. Aerial observation may be carried out at any time over any or all areas of Antarctica by any of the Contracting Parties having the right to designate observers.

5. Each Contracting Party shall, at the time when the present Treaty enters into force for it, inform the other Contracting Parties, and thereafter shall give them notice in advance, of

(a) all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory;

(b) all stations in Antarctica occupied by its nationals; and

(c) any military personnel or equipment intended to be introduced by it into Antarctica subject to the conditions prescribed in paragraph 2 of Article I of the present Treaty.

Article VIII

1. In order to facilitate the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under paragraph 1 of Article VII and scientific personnel exchanged under subparagraph 1(b) of Article III of the Treaty, and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting Party of which they are nationals in respect of all acts or omissions occurring while they are in Antarctica for the purposes of exercising their functions.

2. Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of subparagraph 1(e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in Antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.

Article IX

1. Representatives of the Contracting Parties named in the preamble to the present Treaty shall meet at the City of Canberra within two months after the date of entry into force of the Treaty, and thereafter at suitable intervals and places, for the purpose of

exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty, including measures regarding:

(a) use of Antarctica for peaceful purposes only;

(b) facilitation of scientific research in Antarctica;

(c) facilitation of international scientific cooperation in Antarctica;

(d) facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty;

(e) questions relating to the exercise of jurisdiction in Antarctica;

(f) preservation and conservation of living resources in Antarctica.

2. Each Contracting Party which has become a party to the present Treaty by accession under Article XIII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a

scientific station or the despatch of a scientific expedition.

3. Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article.

4. The measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties whose representatives were entitled to participate in the meetings held to consider those measures.

5. Any or all of the rights established in the present Treaty may be exercised as from the date of entry into force of the Treaty whether or not any measures facilitating the exercise of such rights have been proposed, considered or approved as provided in this Article.

Article X

Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty.

Article XI

1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation or

application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice for settlement; but failure to reach agreement on reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any to the various peaceful means referred to in paragraph 1 of this Article.

Article XII

1. (a) The present Treaty may be modified or amended at any time by unanimous agreement of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX. Any such modification or amendment shall enter into force when the depositary Government has received notice from all such Contracting Parties that they have ratified it.

(b) Such modification or amendment shall thereafter enter into force as to any other Contracting Party when notice of ratification by it has been received by the depositary Government. Any such

Contracting Party from which no notice of ratification is received within a period of two years from the date of entry into force of the modification or amendment in accordance with the provisions of subparagraph 1(a) of this Article shall be deemed to have withdrawn from the present Treaty on the date of the expiration of such period.

2. (a) If after the expiration of thirty years from the date of entry into force of the present Treaty, any of the Contracting Parties whose representative are entitled to participate in the meetings provided for under Article IX so requests by a communication addressed to the depositary Government, a Conference of all the Contracting Parties shall be held as soon as practicable to review the operation of the Treaty.

(b) Any modification or amendment to the present Treaty which is approved at such a Conference by a majority of those Contracting Parties there represented, including a majority of those whose representatives are entitled to participate in the meetings provided for under Article IX, shall be communicated by the depositary Government to all the Contracting Parties immediately after the termination of the Conference and shall enter into force in accordance with the provisions of paragraph 1 of the present Article.

(c) If any such modification or amendment has not entered into force in accordance with the provisions of subparagraph 1(a) of this Article within a period of two years after the date of its communication to all the Contracting Parties, any Contracting Party may at any time after the expiration of that period five notice to the depositary Government of its withdrawal from the present Treaty; and such withdrawal shall take effect two years after the receipt of the notice by the depositary Government.

Article XIII

1. The present Treaty shall be subject to ratification by the signatory States. It shall be open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty.

2. Ratification of or accession to the present Treaty shall be effected by each State in accordance with its constitutional processes.

3. Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, hereby designated as the depositary Government.

4. The depositary Government shall inform all signatory and acceding States of the date of each deposit of an instrument of ratification or accession, and the date of entry into force of the Treaty and of any modification or amendment thereto.

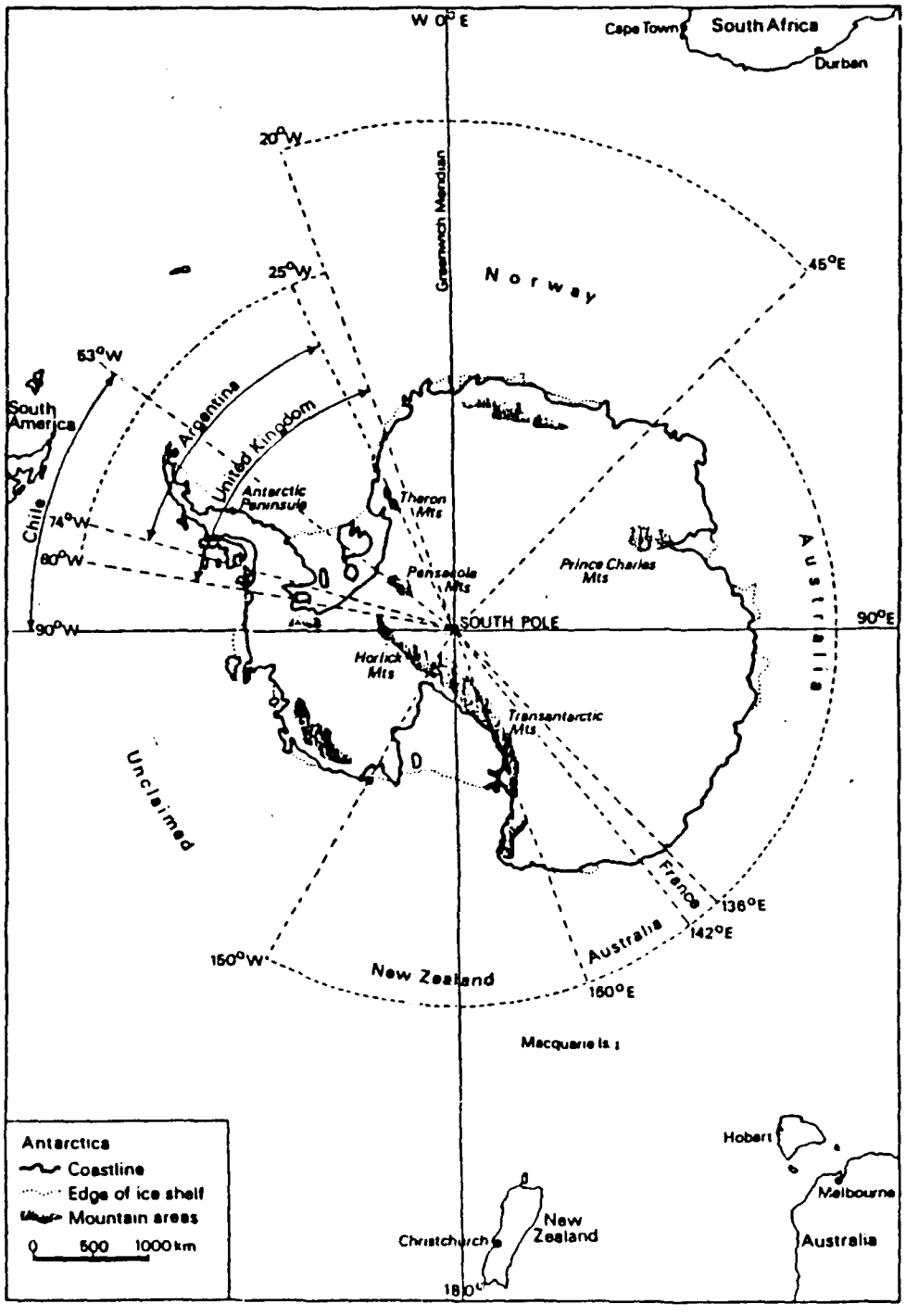
5. Upon the deposit of instruments of ratification by all the signatory States, the present Treaty shall enter into force for those States and for States which have deposited instruments of accession. Thereafter the Treaty shall enter into force for any acceding State upon the deposit of its instrument of accession.

6. The present Treaty shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.

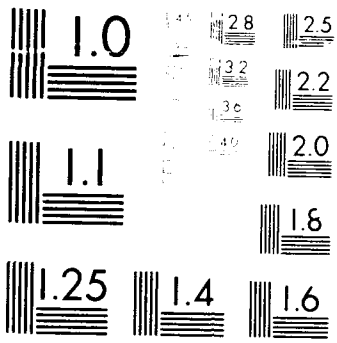
Article XIV

The present Treaty, done in the English, French, Russian and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to the Governments of the signatory and acceding States.

APPENDIX B

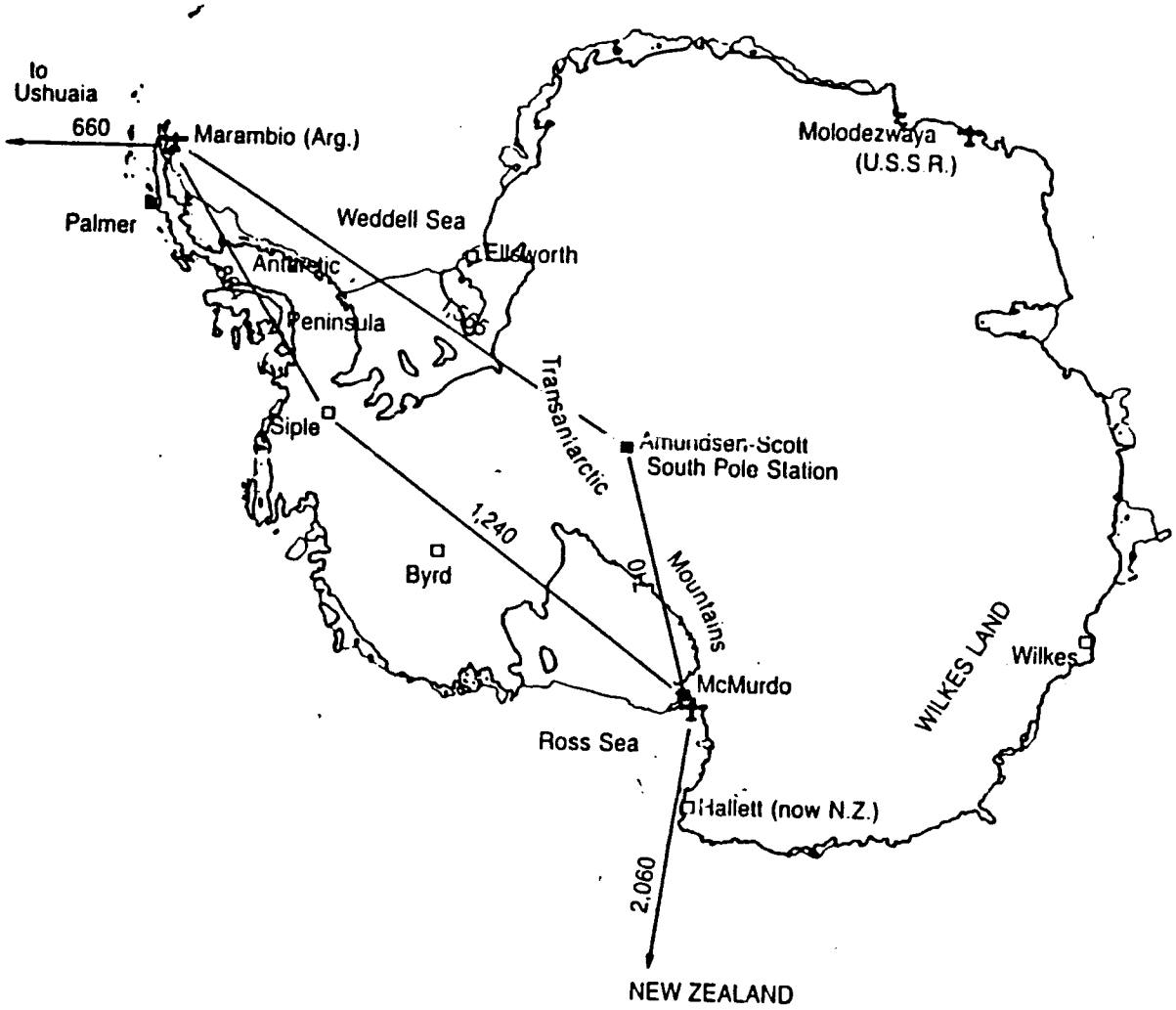


ANTARCTIC TERRITORIAL CLAIMS
Source: Anthony Parsons, Antarctica: The Next Decade (Cambridge: Cambridge University Press, 1987).



The World from Antarctica

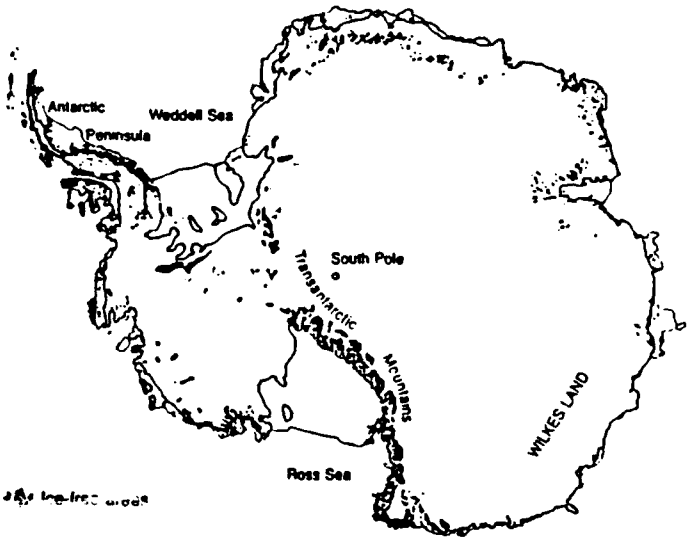
Source: Gerard Chaliand and Jean-Pierre Rageau, A Strategic Atlas: Comparative Geopolitics of the World's Powers, 2d ed. (New York: Harper & Row, Publishers, 1985).



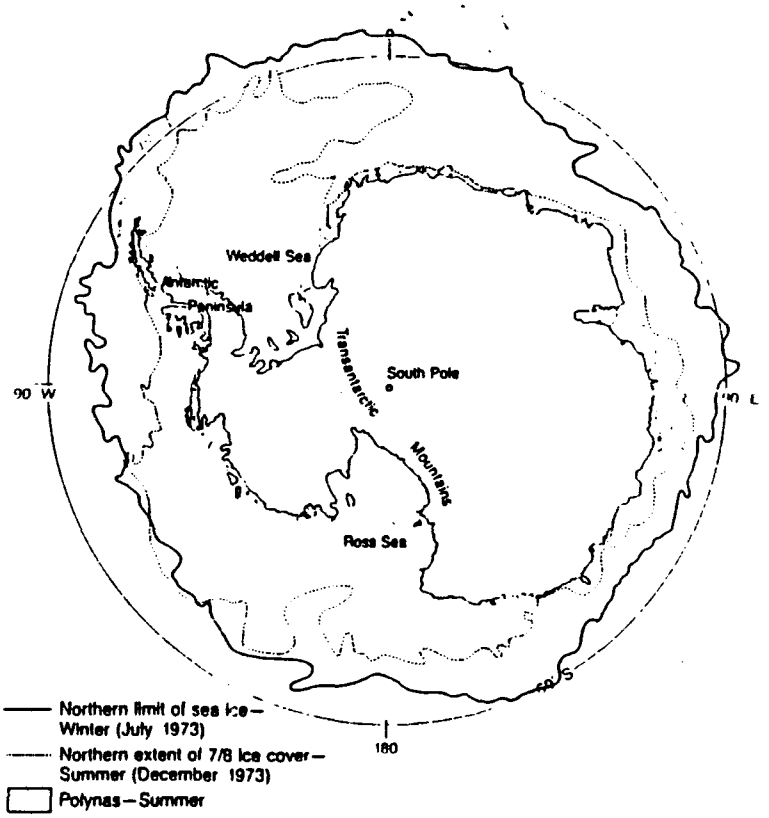
- ■ Currently occupied stations
- □ Formerly occupied stations
- Runway for wheeled aircraft
- —— Principal flight routes, distance in nautical miles

U.S. logistics based at McMurdo include the capability to fly anywhere on the continent. A major activity is the maintenance of the year-round South Pole station.

LOGISTICAL CONSIDERATIONS: Stations, principal air routes
Source: Deborah Shapley, The Seventh Continent: Antarctica in a Resource Age (Washington, D.C.: Resources for the Future, Inc., 1985).



A compilation published in 1983 showed Antarctica to be 97.6 percent covered with ice, and 2.4 percent ice-free.



The extent of the winter and summer sea ice. *Hatched areas* show polynas, or areas of open water in the austral summer.

OPERATIONAL CONSIDERATION: Extent of Ice Cover in Antarctica
Source: Deborah Shapley, The Seventh Continent: Antarctica in a Resource Age (Washington, D.C.: Resources for the Future, Inc., 1985).

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