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APPENDIX I

N00014-76-C-1160

The South Atlantic as a Geostrategic Theater - I
Geoffrey Kemp

Major Regional Powers in the South Atlantic Area I-A
Nigeria and its Economic Potential
Robert West

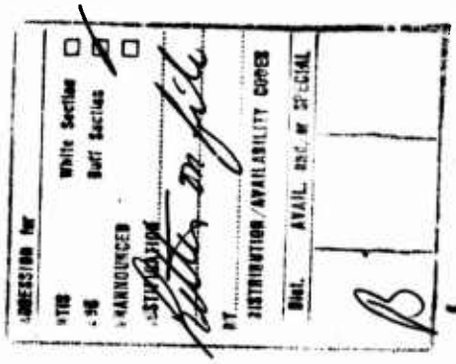
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THE SOUTH ATLANTIC AS A STRATEGIC THEATER

by Geoffrey Kemp

1. Introduction

Over the next decade and probably beyond the South Atlantic will be of increasing strategic importance in both a global and regional context. Presently its importance is indirect and relates to its geographic proximity to other vital theaters, namely the North Atlantic and the Indian Ocean-Persian Gulf area. Over time, however, the indigenous resources of the South Atlantic region and the potential economic and military growth of several of the local countries, especially Brazil, Argentina, South Africa and Nigeria, point to a growing role for the region in the world context.

The purpose of this paper is to provide an overview of the contemporary and possibly future issues which should be taken into account when assessing the course and direction of U.S. policy, especially maritime policy. Three main topics will be covered: first, a brief description of the main geographical features of the South Atlantic region which qualify it to be called a "theater"; second, the ongoing debate concerning the nature and extent of U.S. strategic interests in the South Atlantic, especially in the context of U.S.-Soviet rivalry and the emerging crises in sub-Saharan Africa; third, a longer-term perspective concerning the local environment, especially the role that the major countries in the region may come to play in the future.

2. The South Atlantic Theater

The South Atlantic theater can be said to fall within an area bounded to the north by a line stretching approximately from a line connecting the northern boundary of Brazil to Guinea in West Africa and to the south by the Antarctic region itself. On the western parameters would be the eastern seaboard of South America; and the eastern parameters, the western seaboard of Africa south of Guinea. In understanding the historical, present and future importance of the region it is necessary to appreciate its geography in the context of both the North Atlantic and Indian Ocean which, in spatial terms, are extensions of the same open body of water. This connection between on the one hand the Southern Seas and on the other hand the North and South Atlantic is a major characteristic of the region which makes it so relevant in a strategic context.

During World War II the South Atlantic was the scene of major Allied wartime activity. The primary mission of the Allied navies was to prevent Germany and Japan from establishing a major maritime presence along the littorals of Africa and South America and the islands of the Indian Ocean and South Atlantic. Had the Axis forces had major control of these areas they would have been able to threaten the vital Allied sea lines of communication from the Indian Ocean-Middle East region to Europe and North America and the sea lines from North America to Europe and North Africa.

A cursory review of maritime activity during World War II in the Southern Seas region reveals the strategic importance to the Allies of port facilities and airfields and other infrastructure in Brazil, West Africa, South Africa and some of the British and French islands in the Atlantic and Indian Oceans, such as Ascension and Reunion.[1]

However, perhaps the most important lesson of World War II for the South Atlantic was the growing importance of the Middle East oil as a vital material for modern warfare and the need to insure access to oil supplies and to protect sea lines of communication in both peace and wartime conditions. During the postwar years the growing dependence on the Middle East oil coincided with increasing conflict in the region itself and the series of events which led to first the British withdrawal from the Suez Canal zone, the Arab-Israeli wars of 1956, 1967 and 1973 and the withdrawal of British forces from the Persian Gulf in the 1970s has resulted in diminishing Western presence at the very time that dependencies are growing.[2]

---

[1]During World War II the Cape of Good Hope became a key point of naval strategy. By 1940 the Cape seaway was a main supply route for allied operations and by 1942 South Africa was the European outpost facing Japan's westward expansion. The amount of activity in that area was intense, both in terms of Allied and Axis patrols and encounters and is reflected in the large clusters of sinkings of merchant ships and warships in the general area of the South Seas. L.F.C. Turner et al, War in the Southern Oceans (New York: Oxford University Press, 1966).

[2]Immediately following World War II American war plans reflected the enhanced importance of the Middle East. The United States was concerned that in event of a major war with the Soviet Union lasting beyond six months it would not be able to provide fuel for an Allied effort from its own continental sources, thus increasing significance attached to access to the Middle East oilfields in the early days of a war. This remained a major priority, especially for the United States Navy, until

The present relationship with the Cape Route to the South Atlantic and Middle East oil is important in the context of the basic strategic issues which should influence contemporary Western policy. Although the Suez Canal was reopened in 1975 and is presently taking more and more traffic, the Canal remains on the front line of probably the most volatile region of the world today. The odds in favor of another Arab-Israeli war are probably greater than in any other major region and in event of a new war involving Egypt, the Suez Canal would almost certainly be closed again, possibly for many months or even years.[3]

Within the South Atlantic itself the resources of the region, especially oil, fish and minerals are of considerable economic value and therefore of potential strategic importance to the West though at present they cannot be compared to the importance of Middle East oil. Over time, however, the economic potential of the South Atlantic region is enormous and this, in turn, may generate greater interest in the subtle, low-keyed but, nevertheless, important relationship between economic development, political affiliations and ultimate strategic interests.

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2 (cont.)
the late 1940s when the shift of emphasis to the European theater and then to the Pacific together with the gradual introduction of nuclear weapons into the inventory and the downgrading of the protracted war concept to the short war concept reduced emphasis upon this contingency. However, given the present importance of the Middle East such plans might need to be resurrected in event of a protracted war which may be more possible in the era of nuclear parity than in the 1950s and 1960s when the United States enjoyed strategic nuclear superiority.

[3]The Su-Med pipeline is due to open sometime in 1977 with a capacity for 80 million tons of oil a year. Tests were made in March of 1977. It is not yet known whether the pipeline will be competitive with the Very Large Crude Carriers (VLCCs) presently transporting oil around the Cape to the Mediterranean or the small carriers that currently use the Suez Canal. Large scale interest from Western Europe and American investors indicate the probable viability of the pipeline. However, it will be as vulnerable, if not more so, than the Canal in event of another Arab-Israeli war.

3. U.S. Strategic Interests in the South Atlantic

The South Atlantic has become a region of increasing strategic importance to the United States because of its geographical position vis-á-vis the North Atlantic and the Middle East. The United States also has interests in the mineral wealth of the region and faces dilemmas with respect to its military policy, including arms sales, to Latin American and African countries and the possibility of U.S. military intervention in event of crises in the region, especially Southern Africa.

Given these two somewhat separate sets of interests, U.S. policy options need to be analyzed both in the context of global strategy and military activities in Latin American and sub-Saharan Africa.

a. The South Atlantic and U.S. Global Strategy

In event of a major war with the Soviet Union, Latin America and Africa, south of the Sahara, have geographical importance in two ways. First, Soviet control or access to ports, airfields and support facilities along the eastern seaboard of South America or the bulge of West Africa (and in the Horn of Africa) would pose immediate threats to the sea lines of communication across the North Atlantic and to and from the Persian Gulf via the Suez Canal. Second, Soviet control or access to major facilities in southern Africa, especially South Africa, would pose threats to sea lines of communication which use the Cape Route. Such a possibility would pose direct military threats to the West and would also be important in crisis situations as a route for maritime commerce. Thirdly, access to strategic material mineral resources of the region could not be guaranteed were hostile powers to have major presence in these areas. For that reason the concern about political activity in the context of minerals clearly has strategic implications.

These geographic interests suggest that the preferred U.S. or Western goal is not so much to physically control the South Atlantic region, although this would have obvious benefits in wartime, but rather to deny the Soviet Union such control.

However, to assess the relative importance of the South Atlantic in the overall U.S.-Soviet military equation, reference must be made to the change in context of the international strategic environment which, in turn, is bound to have an effect on the relative relationship between the South Atlantic and other regions. Recent changes in the international environment resulted

in what can only be described as a new strategic map.[4] The new strategic map is made up of four components: the diffusion of political, economic and military power to the non-industrial world; the increasing importance of resource interdependency for the Western industrial world, the communist countries and the non-industrial countries; the changing patterns of western Soviet basing rights and access throughout the world, in particular in the Indo-Pacific region and the Mediterranean; and finally, the new maritime regime which is altering the map of the world's oceans, seaways and choke-points.

One effect of the new strategic map is to highlight the role of the Southern Seas in Western strategy since, as alluded to earlier the South Atlantic or Indian Ocean cannot be looked at in isolation from their relationship -a) to each other and -b) to the North Atlantic. Thus in looking at this region the area from the Persian Gulf to the Caribbean becomes part of a continuum in which the vast bulk of the West's oil to Europe and North American flows and in which numerous sources for conflict and major military rearmament programs are taking place. So long as the oil remains vital to the West, threats to its security from whatever source must be taken seriously. Current projections are that the oil will remain vital for at least the next ten years and to that extent the Indian Ocean and South Atlantic will have to be considered in the context of Western wartime planning in a way they have not been in the more recent past. Coinciding with this growing strategic interest are, of course, the parallel concerns about the growth of Soviet military power and in particular its potential for exercising maritime presence in this region.

Unfortunately, the simplistic model of Western dependency and the Soviet threat, although in itself a telling and important new feature of the overall U.S. balance, can be oversimplified and exaggerated by both those who claim it is the overwhelming problem the West faces and those who dismiss it as wishful thinking.

In order to come to grips with the relationship between assets, such as oil and sea routes, and threats, such as the Soviet Navy, it is necessary to go into some detail in outlining both factors. The need to do this is no better demonstrated than in the debate about the importance of the Cape Route and southern African minerals for Western interests. The Cape Route will first be discussed, followed by a consideration of the mineral importance of the region.

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[4]Geoffrey Kemp, "The New Strategic Map," Survival, March/April 1977.

4. How Important is the Cape Route?

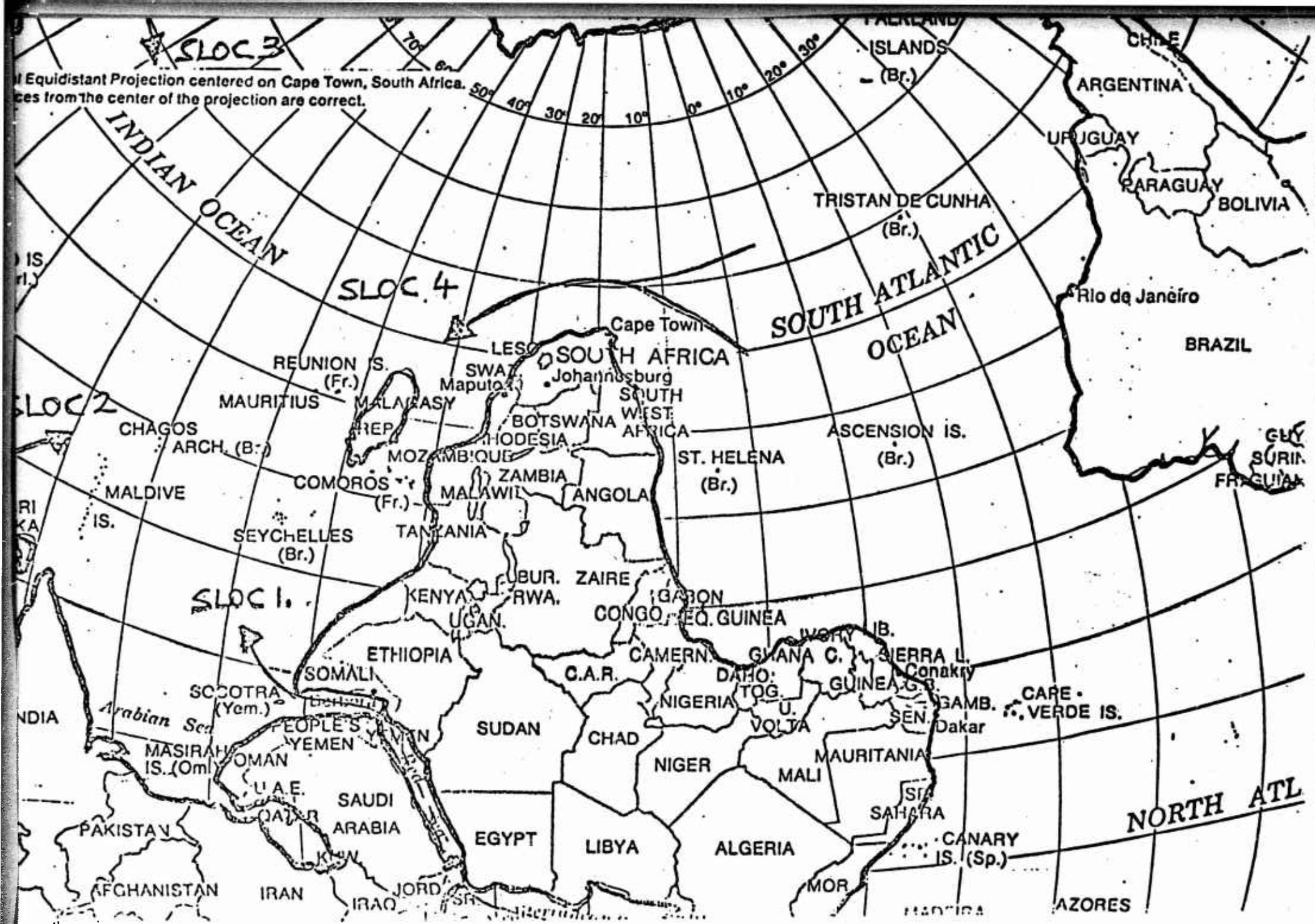
Although much has been said about the importance of "the Cape Route," there have been very few attempts to analyze the meaning of the term in any detail. Yet a clear understanding of what the Cape Route actually consists of is essential if its strategic significance is to be fully appreciated. The Cape Route is, in reality, made up of many diversified routes which link seaborne traffic in both an east-west and west-east direction from diverse origins and destinations. The only common feature of the routes is the fact that at some stage they pass close by the Cape of Good Hope. Therefore in analyzing the traffic around the Cape, one needs to distinguish both the direction in which the traffic is moving and the origin and destination of the ships and the products that they carry. Furthermore, it is important to distinguish between those ships that need to make use of the port facilities of southern Africa on a systematic basis and those that use them for convenience. Another distinction which is relevant in the strategic context is to examine the importance of the Cape Route in both a "peacetime" and "wartime" situation. A basic argument in this paper is that in stressing the importance of the Cape Route too much attention has been paid to one wartime contingency focusing Soviet threats to the oil sea lines and not enough attention to the crisis scenarios in which U.S. or Western maritime forces may need to deploy into the Indian Ocean from the South Atlantic in order to protect oil supplies at sources and the economic commercial traffic around the Cape and their sensitivities to changes in the strategic environment in peacetime.[5]

a. The Economics of the Cape Route

Every day more than sixty or seventy ships pass the Cape of Good Hope in both directions carrying commercial products

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[5]The arguments that the Cape is a "vital sea route" for the West and therefore South Africa is an important ally of the West is to be found in many recent writings. Although the supporters of this thesis make a good point in drawing attention to the potential vulnerability of the Cape Route much of the analysis is often one-sided in that it does not take into account alternatives which, in strategic terms, would almost certainly be found in event of a serious crisis.


SLOC 3
l Equidistant Projection centered on Cape Town, South Africa.
ces from the center of the projection are correct.
INDIAN OCEAN
SLOC 4
SLOC 2
SLOC 1
SOUTH ATLANTIC OCEAN
NORTH ATL
Cape Town
SOUTH AFRICA
Johannesburg
Maputo
LESO
SWAZ
SOUTH WEST AFRICA
BOTSWANA
RHODESIA
MOZAMBIQUE
ZAMBIA
MALAWI
ANGOLA
TANZANIA
ZAIRE
KENYA
RWA.
UGAN.
CONGO
GABON
EQ. GUINEA
CAMERN.
C.A.R.
NIGERIA
CHAD
SUDAN
ETHIOPIA
SOMALI
SOCOTRA (Yem.)
Arabian Sea
PEOPLE'S YEMEN
YEMEN
OMAN
MASIRAH IS. (Om.)
U.A.E.
SAUDI ARABIA
QATAR
KUWAIT
PAKISTAN
AFGHANISTAN
IRAN
IRAQ
JORD
EGYPT
LIBYA
ALGERIA
NIGER
MALI
MAURITANIA
SAHARA
MOR
CANARY IS. (Sp.)
AZORES
MADEIRA
SENEGAL
GAMB.
GUINEA B.
GUINEA
SIERRA L.
Conakry
LIBERIA
IVORY
GHANA
DAHO.
TOG.
U. VOLTA
CAPE VERDE IS.
Dakar
REUNION IS. (Fr.)
MAURITIUS
MALAGASY REP.
CHAGOS ARCH. (Br.)
COMOROS (Fr.)
MALDIVE IS.
SEYCHELLES (Br.)
ASCENSION IS. (Br.)
ST. HELENA (Br.)
TRISTAN DE CUNHA (Br.)
FALKLAND ISLANDS (Br.)
CHILE
ARGENTINA
URUGUAY
PARAGUAY
BOLIVIA
Rio de Janeiro
BRAZIL
GUY
SURIN.
FR. GUIANA
INDIA

from the far corners of the globe to various destinations. In addition, numerous ships leave from South African ports destined for the Far East, North America and Europe. Many contain mineral ores not only from South Africa but from Namibia, Zambia and Zaire.[6]

Whereas few would disagree that from the West's perspective oil is the most important product carried around the Cape, the importance of the route for trade between Europe and the Far East and the intra-African trade which uses South African facilities cannot be ignored. Although it is possible to provide aggregate data on the volume and value of the cargo that traverses the Cape, these figures alone are not particularly good indicators of the importance of the Cape Route since they do not reflect the costs of alternative routes and therefore the extent to which the Cape Route is merely a convenience, as distinct from a necessity, in the transshipment of many cargoes. In the case of oil, for instance, the growth in traffic around the Cape coincided with the closure of the Suez Canal between 1967 and 1975, the burgeoning demand for oil in North America, Europe, and Latin America, and the technology of supertankers. These three factors account for the enormous amount of oil that is still carried around the Cape even though the Suez Canal is now open and is absorbing more of the oil traffic, especially to southern Europe. The point is that, over time, the size of the oil sea lines of communication are themselves sensitive to cost and preference rather than to geograhic necessity. There are alternative ways in which oil can be transshipped from the Persian Gulf to North America and Europe without using the Cape Route even if the Suez Canal were to be closed again. In event that the Canal is closed, one can still transship through the Indonesian Straits or, in a last resort, around Australia and Cape Horn or through the Panama Canal to Europe and North America. These alternative routes undoubtedly have costs attached to them but if one is considering a wartime or major crisis situation the marginal increments in cost might well be considered insignificant. Furthermore, so long as the Suez Canal remains open, which implies relative stability in the Middle East, and plans for developing the Su-Med Pipeline and deepening the waterway are likely to continue thus increasing the relative, quantities of oil will go through the Canal rather than the Cape. Thus to argue that the Cape Route is essential for the transshipment of oil to the Western Alliance tends to overstate the case.

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[6]For instance, at the time of writing, most of Zaire's copper is exported through South African ports due to the closure of the Benguela Railroad and the congestion on the Tanzan railroad and at Dar Es Salaam.

However, just as there is a tendency to exaggerate the strategic commercial importance of the Cape Route, at the other extreme one cannot disregard the consequences that would result were the facilities of the Cape Route, i.e., South Africa, to be effectively denied to maritime commerce on a routine basis. In 1976 over 4,000 ships made "non-authorized" use of the facilities of Cape Town. (That is to say, without coming to port, they received from shore facilities equipment, new crews, mail, fuel and other necessities which speeded and assisted their passage from origin to destination.) Without "ports of refuge" such as Durban and Cape Town, which a sea captain knows he can make use of in event of engine failure or other serious mishap, the risks of sailing on the high seas at certain times of the year are increased, which in turn can raise insurance rates, which can influence the overall cost of freight between distant places. The overall impact upon price can only be calculated on a case-by-case basis but it could have a very serious impact upon certain marginal products and the balance of payments considerations.[7]

South African ports are uniquely qualified to give this service to ships that otherwise would not call at African ports. Although there are some facilities in the black African ports of Mombasa, Dar es Salaam, Mauputo and Lobito, they do not compare it the South African services either in terms of what is available or efficiency. In fact, since the change of power in Angola and Mozambique, the relative quality of their port facilities has fallen and, ironically, it is only as a result of South African expertise that the port logistics of Mauputo remain open to shipping. Insurance agents who know anything about the conditions of the African ports would not underwrite products going through them given the delays and pilferage that would probably occur. Thus until such time as the black African countries can develop facilities at least as good as South Africa, there is no fallback were South African facilities to be denied.

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[7]A good example of the utility of "ports of refuge" is illustrated by the numbers of breakdowns that occur in supertankers traveling from the Gulf to Europe, especially when they have to go around the Cape during the Cape winter. If the ship has engine or generator trouble when passing through the Mozambique Strait the captain can signal ahead to Durban. A helicopter can often be sent out from Durban to pick up the defective piece of equipment while the ship passes Durban. It can then be refurbished or exchanged either in Durban or Cape Town and the ship can then proceed around the second stage of the journey with confidence of safe arrival at destination.

Under what circumstances could these facilities be denied? It does not require the Soviet Army to occupy Cape Town in order to achieve this result. During the troubles in Soweto in 1976, some shipping companies were fearful that such activity had spread to Durban and were reluctant to put in there without up-to-date reports from their agents. Although the riots of 1976 had no impact whatsoever upon disruption in Durban, the psychological impact was worldwide due to modern communication systems and the fact that, in comparison to most African countries, South Africa still has a relatively free press. However, were the internal situation to deteriorate in South Africa to the point where free communications were curtailed or restricted and labor disputes and strikes began to seriously affect the operational efficiency of the docks, the risks of putting into South African ports might be more problematic and South Africa might be considered a risky country for foreign shipping to rely on.

The point is that South Africa's infrastructure and facilities have particular relevance in the context of the mineral debate and are unique in Africa and they probably will remain so for many years to come. Furthermore, were the situation ever to arise where both the Suez Canal and the South African facilities were effectively denied to maritime commerce, severe disruptions in international commerce with concomitant increases in cost would almost be inevitable.[8] This could contribute to inflationary spirals and economic problems in Europe and Japan and North America, which, under certain circumstances, might be very serious indeed. However, to be precise about the nature of disruption and exact impact on cost would require more data than one currently has available.

b) The Military Importance of the Cape Route

From the perspective of the United States Navy, the Cape Route is important as a way of entry into the Indian Ocean from the South Atlantic and vice versa. Although the U.S. Navy has maintained a minimal presence in the Indian Ocean over the years of two escorts operating out of Bahrein (MIDEASTFOR), it has taken to deploying a carrier task force into the area about three times a year. A prime reason for this relates to the Persian Gulf region and the need for the United States to deploy into that region in a crisis when there would almost certainly be a premium

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[8] The point here is that Southern Africa and the Middle East are two of the most volatile areas of the world. Thus the chances that the Suez Canal would be closed in event of another Middle East war are very high and if that were to occur in the next ten years there is a good chance that it would coincide with a major crisis in southern Africa, although they need not necesarily be related.

upon reaction time. In looking at a Persian Gulf contingency where time was an important constraint, there are basically four sea lines of communication the United States could use to reach the approaches to the Gulf: first, from the Mediterranean via the Suez Canal, Red Sea and Bab el Mandeb Strait into the Arabian Sea; second, from the South and East China Seas and the Western Pacific through the Indonesian Strait into the Indian Ocean; third, from the Western Pacific and South China Seas around southern Australia through the Bass Strait into the Indian Ocean; and fourth, from the North Atlantic and possibly from the eastern Pacific via Cape Horn and/or the Panama Canal through the South Atlantic around the Cape of Good Hope into the Indian Ocean. The first two routes are the most convenient in terms of distance and, therefore, time. However, they are also the most vulnerable in military and political terms. As mentioned earlier, the Suez Canal was blocked between 1967 and 1975 and the Bab el Mandeb and Jubal Straits were blockaded for periods during the 1973 Arab-Israeli war. Even if no blockade or obstructions were present, deploying a task force through such narrow waters against potentially hostile powers is a dangerous risk especially with the new shore-based munitions which could threaten ships in such confined spaces. Given the degree of uncertainty along the Red Sea and Horn of Africa littoral, no U.S. planner would want to rely on this route, especially if the arena for deployment was the Gulf itself or the crisis were related to renewed Arab-Israeli hostilities.

The second route through the Indonesian Strait of Malacca, although probably less risky than Suez and Bab el Mandeb, could also pose difficulties in the future. Whereas in 1971 the United States deployed a nuclear task force through the Malacca Strait into the Bay of Bengal in daylight, this was opposed by many of the littoral states and since that time there has been greater talk, and therefore incentives, to pose such constraints in the future, again especially if the contingency were the sensitive Middle East area where the basic issues of the Arab-Israeli dispute might influence the local politics of U.S. access rights. Thus, irrespective of whether the United States maintains its presence in Subic Bay and Clark Field in the Philippines, to rely on the Indonesian Strait for a major contingency might again be a risky proposition.[9]

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[9]For more details on the logistical constraints in the Pacific see Geoffrey Kemp, S. Ritterbush, F.C. Smith, "Geo-Logistic Constraints on U.S. Mobility in the Indo-Western Pacific Theater," a paper prepared for the Conference on U.S. Naval Strategy in the Pacific-Indian Ocean Area 1985-1995, Naval War College, March 1977.

The third route around Australia from the Pacific, although not subject to such political and military constraints as the first two routes, poses difficulties in terms of distance, and therefore time. Without good facilities in Australia, the route becomes almost untenable. With good facilities in Australia and the base in Diego Garcia, a task force certainly could get to the Gulf from Subic Bay without risk of serious obstruction. Whether it would arrive in time is, of course, another matter. Furthermore if, as some have called for, the United States diminishes its presence in the Pacific, the chances of having enough ships in that area to deploy into the Indian Ocean and yet maintain the minimal presence required for the contingencies in the West Pacific itself, remains an open question.

This leaves the Cape Route which, although suffering from many of the disadvantages of the route around Australia, has the advantage of being closer to areas where the United States is likely, in any case, to have major deployments over the next ten years and therefore being a slightly shorter route.

Even if the Cape Route is used to get into the Indian Ocean from the Atlantic and sustain operations there, the fleet would require major support facilities in the Gulf area itself. Frequent use would have to be made of oil for refueling the non-nuclear ships of the U.S. fleets. The fuel supply problem can be met in four ways. A nuclear-powered carrier task force can eliminate some of the requirements. Foreign bunkering services can be used. Fleet oilers can go along with the ships to support them in transit. Finally, pre-positioned U.S. oil supplies in forward bases can be used.

The "ideal" solution is the first (although a nuclear-powered task force still needs aviation gas and ordnance) but the costs of building nuclear ships are astronomical, and given the lead-time required, the number of nuclear-surface ships cannot grow very much over the timeframe of this study. The most convenient option is the second, namely, to use local oil <u>en route</u>. However, it is not always the most secure, as was discovered during the 1973 Arab-Israeli war when the Saudi Arabian government put pressure on commercial suppliers not to sell to the U.S. Navy. In the context of the Cape Route to the Indian Ocean, the traditional fuel stops from the North Atlantic and Mediterranean have included Bermuda, Caribbean, Recife, Dakar, Luanda, Lourenco Marques (Maputo) and Mombasa. A normal steam-powered destroyer needs to refuel about every three days if it is traveling in

excess of 20 knots. If the black African facilities are denied and it were decided not to use South African ports, it is not possible to deploy into the Indian Ocean without the use of oilers. New U.S. oilers (AOEs or fast combat-support ships as they are sometimes called) make it possible to sail into the Indian Ocean without using indigenous facilities and without seriously hampering the speed of transit. In short, the oilers can get the fleet there. Problems begin to arise, however, once the fleet is on station and is required to participate in maneuvers or, if necessary, military actions. In this case, the oilers themselves need to be replenished and although this is possible by making use of the many tankers available to the Navy and by chartering civilian merchant tankers, the costs go up greatly if local oil is not available.

In fact, it would be difficult to imagine the U.S. Navy operating at high tempo for any period of time in the Indian Ocean area unless it had major fuel supplies at bases such as Diego Garcia, or alternatively, could buy oil from the littoral states. One of the least publicized changes in the American defense posture that has occurred since Vietnam is the oil factor. During the height of the Vietnam war, the U.S. forces used billions of gallons of oil for land, sea and air operations without seriously having to worry about the security or cost of supplies. A similar type of military operation in, say, the Gulf area would now be infinitely more constrained and disruptive upon U.S. domestic oil supply and prices.

7. Strategic Minerals and the South Atlantic

Just as there are divergent views as to the importance of the Cape Route to the West, so there is equal, if not more, disagreement on the question of strategic materials, especially minerals, that are located in this theater and may be used as political pawns in the years ahead. While there can be no doubt that the total reserves of minerals in Africa and Latin America, especially Brazil and Argentina, are enormous even by world standards, it is less clear how easy it would be for foreign powers to interfere with the flow of these minerals to the West, or alternatively, how difficult it would be to continue access were there to be a change in political regimes. The problem here is that whereas oil is a fairly simple product requiring straightforward extraction capabilities, the mineral wealth of the South Atlantic is based on as varied items as industrial diamonds to iron ore. The ease of extraction and marketability of each project varies from place to place. For instance, by far the most important mineral in this region in economic terms is presently gold. Yet to judge the strategic importance of gold

in the context of the U.S.-Soviet or Western-Soviet rivalry invariably becomes complicated by the nuances of the international monetary market and the relationship of the market to the gold supply, which in turn is related to the fact that the Soviet Union is the world's second largest producer of gold. Thus the problems relating to access to gold are likely to be somewhat different than problems relating to access to chrome or vanadium and other precious metals found in the area.

Similarly, questions concerning uranium supplies, which are to be found in large quantities in southern Africa and to a lesser extent in Brazil, are tied to the overall debate on the future of nuclear energy and the percentage of power plants which in the future will be fed with fast breeder reactors.

Before discussing some of these complicated points, a few basic facts and figures are in order:

Table 1

Cape Route Traffic Since 1967/1968 (Merchant Ships)

	Ships Normally Calling at RSA Ports	Ships Calling Because Suez Closed	Ships By-Passing RSA Ports	TOTAL
1967/68	9349	3352	?	?
1968/69	8702	3573	13890	26165
1969/70	9242	2876	14600	26718
1970/71	9474	3054	11472	24000
1971/72	9351	2670	12315	24235
1972/73	11469	—	12108	23577
1973/74	11593	—	11600	23193
1974/75	9476	—	10801	20277

SOURCE: U.S. Embassy Pretoria. Based on estimates by Naval Intelligence Centre, S.A. Navy.

The crude figures on mineral production and reserves can be misleading if attention is not also given to the equally important "back-end" aspects of mineral extraction, namely, the infrastructure and logistics and marketing required to carry the crude material from source to final destination. It is in this context that the relatively underdeveloped mineral regions of black Africa and Brazil have to be compared to the relatively advanced infrastructure in South Africa. The point is that whereas it may be very important over the long term to point to the mineral potential of black Africa, Brazil or the seabed of the South Atlantic or even Antarctica, this potential has to be translated into products which can be extracted and marketed at a reasonable cost. Since it takes years to develop such facilities even if there is capital and skilled labor to implement such programs, for the short-term future at least, an important distinction must therefore be made between minerals which can be marketed at reasonable price and minerals in the ground which, for one reason or another, are not presently extractable.

Similarly one must distinguish between those minerals which are in short supply in the West and are not available in any other place than the South Atlantic region -- these might be termed critical materials -- and those which although important to the economies of the West have either been stockpiled in large quantities or have substitutes or alternate sources. Thus, rather like discussing the Cape Route and the products carried along it, one must be precise about the potential effects of disruption in mineral supplies and identify whether one is concerned with economic implications or strictly military implications. In a protracted military conflict where "wartime" rules of economics apply, enormous changes in the domestic supply and demand schedules can be implemented without seriously jeopardizing overall military potential; e.g., petroleum consumption can be controlled by rationing and sufficient quantities made available to the armed forces. However, in a peacetime crisis situation and where there are clear political tradeoffs between shifting supply-and-demand schedules for minerals and oil and relaxing the vigilance on strategic requirements, the preferred course of action is not obvious. Again, rather like the argument on freight rates around the Cape, marginal changes in mineral supply may have a very serious effect upon a peacetime "boom" economy but virtually no effect in a wartime economy where priority was being given to the pursuit of military activities.

In short, there is confusion about the relevance of the minerals, as distinct from oil, to Western strategic interests over the next ten years. This is partly due to obfuscation concerning the relationship between strategic and economic warfare and welfare. Nevertheless, it also reflects the inherent complexity of the subject and the need for careful analysis on a mineral-by-mineral and country-by-country basis.

8. Threats to Western Interests

Having outlined the basic strategic stakes that the West has in the South Atlantic and Southern Seas region, it is appropriate to address with more precision some of the threats to those interests that may emerge in the years ahead and which may require some form of strategic response. Three general categories of threats seem appropriate for analysis: first, a direct military threat by the Soviet Union to Western interests in this region; second, direct military threat from other powers; and third, indirect threats stemming either from Soviet or non-Soviet activity.

There is considerable disagreement amongst scholars and analysts as to the nature of the Soviet threat in the South Atlantic-Southern Seas region. At one extreme there are those who believe that Soviet strategy in Africa and the South Atlantic is part of a long-term blueprint for Soviet domination of theaters vital to the West, including Latin America and the Middle East. At the other extreme, there are those who argue that Soviet activity must still be seen in primarily defensive and reactive terms and that their penetration of Africa has yet to be proven successful, as recent events in the Horn region demonstrate, and that, in any case the West still has the predominant military advantage. Between these two extremes are those who believe that while the Soviet Union has undoubtedly increased its military potential in the region and is clearly aware of the vulnerability of the West to certain forms of military-economic pressure, the time has not yet come when Soviet activities require the type of response considered necessary in regions adjacent to the Soviet Union, such as Central Europe and the Northern Flank or the Middle East and the Far East.

Perhaps the most graphic way to illustrate the pitfalls in assessing the Soviet threat is to consider the security of oil supplies. The question has sometimes been posed that the growing dependence of the West on the Cape Sea Route for oil, in parallel to the Soviet build-up of naval forces in the South Atlantic and Indian Ocean, may lead to a situation in the future when the Soviet Union could "interdict" or "interrupt" these oil supplies. Opponents of this point of view argue that for the Soviet Union to challenge the West at its Achilles heel would be tantamount to declaring war on the Western world. The Soviet leadership would therefore not do so except in a general war situation, in which case the question of oil supplies would be a less important military factor than the likelihood of a nuclear escalation and resupply in Europe and the Far East. Furthermore, if the Soviet Union were intent on interdicting oil

supplies, the most obvious target areas would be the Persian Gulf itself or the terminal facilities in Europe and North America. The most difficult point on the sea line to interdict the oil would be off the Cape. At that point, the Soviet Union's submarines would be thousands of miles from their bases and would not be able to support themselves except for very short periods of time. Were South Africa to fall into Soviet hands, a major military presence on the Cape would certainly change the operational situation. However, again one would have to ask under what circumstances would the Soviet Union be tempted to make such a rash move?

A more subtle, and therefore perhaps a more worrying scenario is one where the Soviet Union would use its military power and presence to "protect" Middle East oil from Western "aggression!" A scenario whereby the Soviet Union was "invited in" by Iraq to protect a "radical" regime in Saudi Arabia from Western imperialism is not absurd given some of the Western writings calling for such an invasion and the precedent of Arab monarchies eventually being replaced by anti-Western regimes. Soviet control, as distinct from destruction, of Middle East oil would have the huge political advantage of dividing the Western alliance. So long as Europe and Japan could be assured of oil supplies, perhaps even at lower prices, it is unlikely that they would urge the United States to launch a nuclear attack on the Soviet Union. It can therefore be argued that the vulnerability of the sea lines of communication would seem to be more relevant in the context of a political-economic threat rather than in the context of a direct military attack. However, in event of a direct military threat, the most important area to protect is the Gulf itself and the sea lines across the North Atlantic. A telling indicator of this is that countries such as Brazil, who are as vulnerable, if not more so, to interruption of oil supplies, themselves point to the Persian Gulf -- as distinct from the South Atlantic -- as the arena where the preferred Western response should be made.

In terms of direct threats to Western interests in the region from other powers, an analysis of the capabilities of black African or Latin American countries potentially hostile to the West reveals that their ability to be anything more than a nuisance in a military context is likely to remain at least for the decade. The largest armed forces in black Africa are those of Nigeria. At least in the near term they will not be able to seriously interfere with sea traffic or even pose a threat to southern Africa with their current configuration of force structures and equipment. In time, their capabilities might improve, but by then the West itself may be much stronger or, alternatively,

be less reliant on some of the targets which countries such as Nigeria might threaten. The direct military threats posed by countries other than the Soviet Union are primarily of political and psychological value in that they could contribute to the overall deterioration of the strategic situation in the South Atlantic, which in turn could have indirect costs for the West.

In terms of indirect threats, perhaps the most serious relate to anarchy and the economic chaos that might result were a situation to deteriorate in southern Africa to the point where law and order, and therefore normal commercial activity, were seriously curtailed. Such a situation could curb Western access to minerals and other markets and might have some influence on oil supplies from countries along the West African coast or even the coast of Latin America. While such events might have major economic effects upon the West, in terms of strategic interests such threats would not be as important as any of the more direct threats or other major contingencies in Europe, the Middle East and Asia.

9. The South Atlantic in the Long-Term Timeframe

Beyond a ten-year period one must examine the potential of the South Atlantic region itself becoming of more importance irrespective of the activities of the Soviet Union and the United States and their rivalry. In a longer-term timeframe, one can envisage the emergence of Brazil and Nigeria as regional actors and possibly Argentina and South Africa provided that they can solve their domestic problems; growing interest in the Antarctic region with its mineral wealth and fish resources; and the possibility for large-scale oil finds off the Latin American coast. In speculating about the regional powers, the future of Brazil is perhaps the most interesting question given its remarkable economic growth over the past decade, its geographical situation, its large population and its mineral wealth.

Can Brazil become a major regional power? There can be no doubt that of all the countries of Latin America Brazil probably has the greatest potential for development into world power status. Whether this will happen in this century or not, however, is a different matter. Until 1973 there was great confidence that Brazil was well on the way to becoming an advanced, developed society, at least in aggregate terms. However, the quadrupling of oil prices in 1973 had a debilitating effect on Brazil's economic development for, despite its rich endowment with most natural resources, Brazil is deficient in fossil fuels. It has not discovered major oil, although it is exploring with increasing fervor its offshore shelf region. As a consequence, energy, more than any other single factor, dominates the thinking of

Brazil's long-term planners, both civilian and military. The need to overcome the oil shortage is, of course, one reason why Brazil is actively negotiating with West Germany for the supply of a nuclear fuel cycle and is building enormous hydro-electric facilities along its extensive river network, especially in the south at Itaipu.[10]

Given Brazil's preoccupation with economic development, the role of military forces is primarily concerned with internal matters, especially since it is the Brazilian army rather than the navy or air force which has power. There is some speculation that Brazil's relationships with Argentina may deteriorate as the geopolitics of the River Plate Basin become more involved, but it remains to be seen whether present "maneuvering" will, in fact, lead to more overt threats of force.

In terms of other military contingencies, the Brazilians themselves presently do not feel they have a major role to play in the South Atlantic in the near term except in the context of hemispheric defense. The argument is blunt: they believe that they are still covered by articles of the Rio Treaty with the United States so that in event of any major (i.e., Soviet) threat to South America the United States will protect them. They believe that they are capable of protecting their own seaboard from incursions by local states but as regards their vital strategic interests in the Persian Gulf they know they have no military capability to influence events there, or even in Africa for that matter. Thus their military programs are presently low-keyed and absorb a small portion of the GNP.

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[10]Brazil's energy requirements for the rest of the century would change radically were oil to be discovered or improved technologies for the superconductivity of electricity be perfected. More efficient conductivity would mean that the hydroelectric potential of the Amazon, which is almost limitless, could be used as energy for the industrial areas of Brazil in the south and southeast. The United States is doing advanced research on this technology.

However, over the longer timeframe, this situation could change. Brazil, more than any country in Latin America, believes in its manifest destiny. To that extent, Brazilians see a parallel to the United States in the nineteenth century, which was a vast, underdeveloped continental country with enormous potential in population and resources. The basic question in Brazil is how long the development process will take. Some believe it will take until the twenty-first century to develop the central highlands of the country (Matto Grosso) let alone the Amazon Basin, although all development programs could be rapidly accelerated were major oil discoveries to be located on land. Overseas, Brazil sees its interests in West Africa growing for economic, political and cultural reasons. By the 1990s, the lines of communication between Brazil and the western seaboard of Africa could have increased and this may lead to more serious consideration of independent strategic requirements that go beyond the covenants of the Rio Treaty.

In this timeframe, speculation about a Brazilian nuclear weapons program cannot be disregarded. Brazilians are acutely conscious of the prestige factor, and were the proliferation of nuclear weapons to continue, Brazil will probably regard a nuclear option an essential ingredient in its diplomatic arsenal. In this regard, it can be speculated that Brazilian nationalism transcends the particular form of government in power at the moment. Thus, although there is considerable displeasure with the current military regime in Brasilia, it has been successful in winning support amongst the elite in opposing United States' pressure on the issue of nuclear power, but less so on the issue of human rights.

In other strategic area, Brazil will undoubtedly assert more authority in the future over its sea area. This would be especially so if oil were discovered offshore. Thus, two missions the Brazilian navy feels it will have to worry about in the next twenty years are maritime surveillance and offshore constabulary activity. This requires the type of force structure which they are already investing in and the future would require more investment in airborne and reconnaissance capabilities.[11]

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[11]Brazil's current maritime surveillance capabilities are very limited and are build around the antiquated P-2 Neptune aircraft. Ideally, the Brazilians would like to buy planes similar to the British Nimrod or the French Atlantique or possibly the U.S. P-3. Some Brazilian strategists have talked about an Allied chain of islands stretching from Tristan da Cunha through Ascension and Fernanda de Noronha as a forward arc for maritime surveillance in the South Atlantic.

Argentina is more of an enigma than Brazil primarily because of the political chaos that has bedeviled the country since World War II. It has great geographical and resource advantages and it may well be the first Latin American country, aside from Venezuela, to discover large oil deposits if the reports on the exploration of the continental shelf between Argentina and the Falklands prove correct. Given its oil and agricultural potential Argentina could be a serious power in the timeframe between now and the twenty-first century. It has a sophisticated population and it could develop a nuclear program if it wanted to. It may however run into conflict with Chile over access to the Atlantic since there have been incidents even though the Beagle Channel question has been resolved.

Argentina does not have Brazil's sense of manifest destiny but on the other hand would probably react in a hostile manner to overt Brazilian hegemony, especially in the critical River Plate Basin region. Argentina is presently far more interested in a South Atlantic Treaty Organization arrangement with South Africa and the West than is Brazil. Argentina feels less bound to the politics of black power than Brazil and to that extent is benefiting from a closer trading relationship with South Africa. However, the probabilities of any meaningful relationship between these countries getting underway without American participation is slender except at the level of consultation and reciprocal visitation rights.

South Africa, Nigeria and Zaire are all potentially very rich countries but, in their own way, all three countries are bedeviled with domestic problems of tribalism, racism and lack of foreign capital and it would be difficult to speculate as to the probabilities that any of these three countries could become a fully fledged regional power by the turn of the century. If South Africa were ever to solve its race problems, its growth potential is virtually unlimited. However, in event of continuing chaos, this potential may well turn into a net decline in economic activity with concomitant hardships for all races and likelihood of increased repression of the black population by the white minority and the immigration of many of the whites, especially English-speaking whites.

Finally, a word must be said about Antarctic. This is one of the few last frontiers available for multi-national exploration and exploitation. It seems unlikely in the timeframe of this study that it will ever be economically viable to exploit the mineral wealth which undoubtedly lies underneath the icepack. However, the importance of the fish resources (krill) could lead not only to their further exploitation but to anticipation

that at some time in the twenty-first century technologies may be available to exploit the minerals. This could lead to more pre-emptive political activity designed to carve spheres of influence in the Antarctic in a similar manner to which countries are now demarcating areas of the sea irrespective of their ability to exploit its proven or unproven wealth. Thus any study of the South Atlantic which ignores the Antarctic in the legal, economic, political and strategic context would be seriously in error.

Conclusions

The South Atlantic theater is important but not of vital strategic importance to the West. Over the years it may assume strategic significance for the regional powers irrespective of external power interests. Its primary importance at present is geographic, as a crossroads between two more important theaters. Until such time as Western dependency upon Middle East oil has been dminished, there will always be latent fear of Soviet threats to southern Africa and, thereby, the Cape Route. However, a general analysis of the strategic theater points to the relative unlikelihood of direct Soviet military threats and the much greater possibility of indirect threats that lead to disruption of economic markets.

In terms of U.S. policy interests, the area poses many dilemmas in both the short and long run. In strategic terms it can be argued that the natural allies of the United States in this region are Brazil and South Africa, with Argentina and Nigeria running a close second. However, in reality, such simple choices are never possible given, in particular, the complications of the political situation in southern Africa. The U.S. dilemmas relate not merely to the ideological issue of black versus white but also to the equally complicated question as to whether or not to supply arms to black regimes north of the Zambize. Similarly, in the case of Latin America, the tradeoffs between the support for authoritarian governments in Brazil, Argentina and Chile and the human rights issue has to be seen in a wider, more universal, context.

What seems clear from the above analysis is that the South Atlantic really cannot be decoupled either from the North Atlantic or from the Indian Ocean. This could have important implications for the U.S. Navy's jurisdiction over its Pacific and Atlantic fleets and could lead to a reorganization of the U.S. Navy's administrative responsibilities. This would be a first step to a more rational approach to strategic planning. For instance, what might be involved would be to assign responsibility for the South Atlantic, Caribbean, Persian Gulf and West Indian Ocean to CINCLANT, with the CINCPAC retaining

need not necessarily result in greater deployments into the South Atlantic area, although occasional safaris into the South Atlantic with task forces might have political utility, especially if Soviet activity in Angola and the Horn of Africa continues.

If the Soviet Union were to increase its hold on southern Africa, then indeed the whole arena could become more polarized and the role of military force in protecting mercantile interests will have to be taken more seriously. On the other hand, if the Soviet threat dwindles or withers away, the primary focus will be on the political problems of southern Africa and the dilemmas this will pose for the Western Alliance. A more likely outcome will be a combination of increased but not necessarily successful Soviet meddling and protracted conflict in southern Africa. For this reason, the United States should ensure that its leadership has a clear understanding of the overall strategic stakes and therefore avoid both overplaying and underplaying its hand.

MAJOR REGIONAL POWERS IN THE SOUTH ATLANTIC AREA:

NIGERIA AND ITS ECONOMIC POTENTIAL

by Robert L. West

In this paper we hope to identify the salient economic features of the nations bordering the South Atlantic Ocean in order (1) to describe the key economic links between the nations of this area and the rest of the world, (2) to assess the present importance and future prospects of commercial relations among the South Atlantic economies, and (3) to evaluate the role Nigeria is likely to play in the economic evolution of the area from now to 1990.

This constitutes an inquiry into the international economic relations of the South Atlantic area. But we will find it useful to devote more than conventional attention to the geography of the region and the resource base of its national economies in order to establish a foundation for speculating about emergent trends in the international relations of the area. Contemporary study of international economics is generally more concerned with man-made phenomena: the administration of regulatory activities, the interaction of national development policies and international commercial transactions, and the like. For our present purposes, however, we are compelled to emphasize less transient and more fundamental things.

Reflecting on the evolution of international economic relations in the South Atlantic region, one finds striking the persistent influence of geography and resource endowment. The overland trade of Africa with the commercial centers of the Mediterranean is of ancient standing, but seaborne transport on the South Atlantic -- which conveys the great bulk of the region's international economic intercourse today -- had its beginnings in the technical improvements in shipbuilding and the arts of seamanship 500 years ago. Concern with security of the sea lanes of communication and the consequences of their interdiction was intertwined with advances in marine technology at the outset of the Age of Exploration. Indeed, the origins of the voyages of exploration in the South Atlantic (and beyond) is attributable to the insecurity of the more direct trade routes between Europe and some of its distant suppliers; and the sea-carriage technology of that era required concentration on high unit-value cargos: rare oils, exotic and storable foodstuffs, and precious metals. In the intervening centuries the passage through the

South Atlantic of these cargos from the Near East, and from the littoral of the Caribbean and South Atlantic, was supplemented by a triangular trade similarly founded on the relative resource endowments of the region -- the trade in slaves, rum, and timber. This cross-flow of Atlantic trade persisted until its interdiction by naval squadrons 100 years ago.

It might be argued that little has changed in the foundations of international economic relations in the South Atlantic except the scale of transport permitted by advances in marine technology. In 1974, the base year employed in this study to describe the present economic structure of the region, we will identify as the central elements in the international economic transactions of the region the flow of some 300 million metric tons of petroleum and about 100 million metric tons (metal content) of ores and concentrates, almost all of which was transported to distant markets by sea. But the passage of these cargos on the South Atlantic is secondary -- in value and in concern with security of the sea lanes -- to the transit traffic of some 460 million metric tons of crude oil and petroleum products from the Middle East to Europe and North America. The pattern of key economic links between the nations of this area and the rest of the world, we will find, is shaped by facts of geography and resource endowment that have historic resonance. And the balance of our inquiry, in this study, consists of assessing trends in the last quarter of the twentieth century that may permit emergence of a supplementary cross-flow of relations among the Latin American and African South Atlantic nations, to replace the commercial ties interrupted by the Anti-Slave Trade enforcement of the nineteenth century.[1]

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[1]For the purposes of this study, the Latin American South Atlantic nations (LASA) consist of Venezuela, Brazil, Argentina; the Mineral Exporters: Guyana and Surinam; and the Other Agricultural Exporters: French Guiana and Uruguay.

The African South Atlantic Nations (AFSA) consist of Nigeria; the Mineral Exporters: Liberia, Gabon, and Zaire; and the Agricultural Exporters: Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Ivory Coast, Ghana, Togo, Benin, Cameroon, Congo Republic, and Angola.

The South Atlantic Area consists of the LASA nations, the AFSA nations, and the South African Customs Union (South Africa and Namibia).

Scale and Distribution of Economic Activity

The South Atlantic area contains eight percent of the world population and produces two percent of the world total goods and services. In terms both of people and product, however, it is growing more rapidly than most other regions of the world. These conventional measurements of size, and their distribution within the area, are shown in Table 1.[2]

Brazil, of course, is the giant of the region. In goods and services produced, it is the equivalent of all other nations in the South Atlantic area other than South Africa, and in population it accounts for at least one-third of the area total. In terms of economic product, Venezuela and Argentina -- although, taken together, only two-thirds the size of Brazil -- are the equivalent of all 17 African nations bordering the South Atlantic (including the South African Customs Union). Measured by market size, two-thirds of the South Atlantic region is on the South American continent. But measured by population, 55% of the region is in Africa. Per capita product and income among the LASA nations is five times the average of the AFSA nations. Argentina and Uruguay, at least, can only be considered less developed countries by geogrpahic convention and the per capita income-level of Venezuela is equal to that of Spain and Greece. On the African continent, only the dual economy of South Africa, with its high-income white sector, is conventionally omitted from the list of less developed countries.

Within West Africa, among the AFSA nations of this study, Nigeria occupies a position of predominance. It is about the size, in population and in gross national product, of

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[2]To help visualize the size of this region in relation to the rest of the world, a reader may find useful the attached Charts 1.1, 1.2, and 2.1 showing the relative size of nations in 1968 by reference to physical area, population, and G.N.P. Chart 3 shows the relations of G.N.P. for 1974 among the nations of the South Atlantic area.

the other 15 AFSA nations combined.[3] Moreover, similar to the case of Brazil in its region of Latin America, Nigerian production has been growing much more rapidly over the past decade than the output of its neighbors.

As shown in Table 1, the nations of the South Atlantic area have exhibited widely different growth rates from the middle 1960s through the period of the international commodity boom of 1972-74. Adjustment to the end of the commodity boom, and the new relative price of energy materials, has affected this distribution of growth rates in different ways among the major economies of the region. Argentina and South Africa grew at relatively modest rates from 1965 to 1973, and growth rates are now declining further. Brazil exhibited a very high growth rate until 1973, but it has now fallen. Venezuela had a relatively low growth rate, but it is now rising. Nigeria has enjoyed a very high rate of growth since the middle 1960s, and it is continuing to rise.

Table 2 shows that there are not only very great differences in the absolute size of the national economies, but also that different kinds of economic activity characterize various economies within the region. Among the primary and secondary industries, manufacturing predominates in the LASA countries and

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[3]The population of Nigeria cannot be stated with confidence. Three censuses, in 1963, 1964, and 1974, have become enmeshed in considerations of political balance among regions of the country and the results are believed to overstate the total population of Nigeria. Following the 1974 census, the Nigerian government adopted estimates derived from the 1964 count, expanded at an annual growth rate of 2-1/2%. These estimates (including the figure of 73 million in 1974, as shown in Table 1) are adopted in this study, except for the discussion of the economically active population of Nigeria, for which we follow the FAO estimate that the Nigerian population in 1970 was about 55.1 million (the equivalent to a 1974 population of about 61 million). The measurement of Gross National Product of the South Atlantic nations employed in this study is that of the World Bank, which utilizes a three-year average of prices and exchange rates to facilitate inter-country and inter-temporal comparisons. Since the 1974 G.N.P. data are based on the average of prices in 1972, 1973, and 1974, the real output of oil-producing countries such as Venezuela and Nigeria is valued at price-averages in which the sharply higher unit-values of petroleum enter only for the year 1974. If real output had been valued at 1974 prices, the Gross National Product of Venezuela would appear in Table 1 as $25,280 million and Nigeria as $23,030 million. Of course, many other prices were also higher in 1974 than the 1972-74 average, and most other G.N.P. estimates in Table 1 would also be higher than shown, but much less sharply increased.

in South Africa, by contrast, less than ten percent of output in the AFSA countries is attributable to manufacturing. Mining and the production of primary energy materials are dominant in Venezuela and the group of mineral-exporting countries of both Africa and Latin America. But for the AFSA countries as a whole, and including Nigeria, agriculture is the major activity and the most important source of domestic product.

These patterns of economic activity are changing. Both in Africa and Latin America, for the past decade and a half, secondary activities have grown much more rapidly than agriculture and these differences in sectoral growth rates show no indication of convergence. Studies of the United Nations Statistical Office show that both in Africa and in the Latin American and Caribbean countries manufacturing has grown at an annual rate of about 7-1/2%, doubling each ten years. The value of real output by all industrial sectors -- including mining, energy production, and utilities, as well as manufacturing -- expanded at an annual rate of 6.9% in Latin America. Over the same period, real output of agriculture in Africa grew at only 2.0% annually and at an annual rate of 3.7% in Latin America. The large agricultural sector of the African nations has steadily fallen behind the growth of population; in Latin America, the relatively smaller agricultural sector has produced about a one percent increase in real per capita output, substantially less than the growth of domestic demand for agricultural products resulting from higher income levels.

It is by inspecting the trends and relationships among these sectors, and their implications for international trade, that we may hope to find a basis for speculating about the future international economic relations of the South Atlantic area. We will inspect the resource-bases and trends in resource use in the sectors of agriculture, energy production, mining, and manufacturing. We will then survey the direction and composition of international trade of the South Atlantic area, project the changes in relative size of the national economies likely to occur by 1990, and conclude with a review of some particular factors affecting the role of Nigeria in the South Atlantic area.

Agriculture in the South Atlantic Area

The underlying resources of agriculture are land, water, and climate. The availability of adequately-watered land to be worked by each economically active member of the population in agriculture varies greatly among the countries of the South Atlantic area. On the average among the LASA nations, each person in agriculture has four and a half hectares under crops and an additional 19 hectares of permanent meadows. Among the AFSA nations,

the corresponding areas are less than two hectares under crops and about four hectares of permanent meadows. As shown in Table 3, agriculture in the LASA countries and in South Africa is generally land extensive. In the AFSA nations, where agriculture constitutes the predominant economic activity, the resources used by each cultivator are much less extensive -- substantially under the world average for less developed countries.

On both continents, extension of agriculture into additional land areas is possible, including expansion into new areas capable of sustaining high-yield agriculture. But these prospects are much less favorable than might first appear from inspection of the present land use shown in Table 3. A very large part of presently uncultivated land in the AFSA countries and, notably, in Venezuela and Brazil, is in the humid tropics. The technology for converting these land areas to high-yield agriculture does not now exist and is quite unlikely to be available for extensive application before the end of this century. Much of the available new land, and more intensive use of large areas presently cultivated, will require irrigation. This is a highly capital and energy intensive innovation -- and serves to introduce a fourth underlying resource, commercial forms of energy, used in very limited applications in the present agriculture technology of the South Atlantic area.

We should note that Nigeria, with the relatively greatest dependence on its agricultural sector of the countries shown in Table 2, has the least favorable land/man ratio shown in Table 3. The implications with respect to agricultural productivity in Nigeria as compared with other countries of the South Atlantic area are confirmed by other evidence on a scale of productivity per worker[4] by which agriculture in the United States measured about one hundred, for the period 1968-1972, productivity in Argentina was 86.9 (or 43.0 if cattle-raising is excluded), Brazil was 12.9, Zaire was 5.9, and Nigeria was 3.4 -- at the low end of the range for Asian agriculture. Output per agricultural worker in most of the AFSA countries for which such observations are available seems to lie in the range between Nigeria and Zaire, about one-third to one-half the output per worker in Brazilian agriculture. These productivity levels, in turn, are a very small fraction of those in the temperate-zone cropping

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[4]The index of productivity is the average annual production of a male agricultural worker expressed in millions of net direct calories. See Paul Bairoch, The Economic Development of the Third World Since 1900, Transalted by Cynthia Postan, (Berkeley and Los Angeles: University of California Press, 1975), pp. 22-45.

and livestock areas, such as those of Argentina, South Africa, Uruguay and in the Northern Hemisphere.

Agriculture in the AFSA countries and in the tropical zone of Latin America is only beginning to experience the introduction of high-yield and high productivity technologies. We observe that their adoption is likely to accelerate in the coming fifteen years, but the extent and the rate of adoption is quite uncertain. Among other important factors, the same as for irrigation, high-yield technologies now available are much more energy-intensive than present farming practices and are only partially adapted to the crops and growing conditions of the South Atlantic tropical zone.

Meantime, agriculture in the South Atlantic area is losing ground -- not least by the relative shift of population out of agriculture and out of rural areas. This has been occuring for at least the last fifteen years, and appears to be accelerating. As may be seen in Table 4, there is an absolute flight from agriculture in most of the LASA nations -- where farming occupied only 36% of the active population in 1970 -- and there is a similar relative movement out of agriculture in the AFSA nations, were 70% of the labor force was still engaged in farming in 1970. The conjunction of different population sizes and different rates of rural-urban migration among the South Atlantic nations had the effect that nearly half of the increase in the agricultural labor force of the area between 1960 and 1970 was by Nigerians. Very high rates of migration to urban centers were evident at the end of the civil war period in Nigeria, and have continued in the 1970s, both attracted by the rapid rise of urban-based incomes and driven by the unfavorable resources and stagnant poverty of Nigerian agriculture.

A final key feature of agriculture in the South Atlantic area is its relative concentration, particularly in the tropical zone, on export crops. These notably include those crops on the list of "core commodities" for which reformed marketing arrangements are under discussion. The South Atlantic countries are the source of nearly one-quarter of the world exports -- nearly thirty percent of the exports by less developed countries -- of the eight agricultural commodities proposed by UNCTAD and the Group of 77 for primary attention in seeking international agreement to stabilize (and raise) commodity prices. These eight export crops, as shown in Table 5, represent more than one-fifth of AFSA merchandise exports and a slightly smaller proportion of LASA exports -- but half of the LASA total is Brazilian coffee. In the production of these commodities, Nigeria is a relatively minor participant. But this may be the brightest prospect of of South Atlantic agriculture: the likelihood of being among the major beneficiaries of such international commodity agreements as may be adopted.

The least encouraging prospect is the outlook for the part of the agricultural sector supplying domestic nutritional needs. Growth rates of domestically-consumed-food production have evidently been very low, at least since 1960. This record appears to be shared by all countries of the area. The present status of this industry varies among countries. Brazil is now just about in balance -- just capable of meeting its domestic food needs, with food exports (other than the export-oriented crops of sugar, coffee, and cocoa) approximately matched by food imports. Argentina is a substantial net exporter, notably of meat and cereals; South Africa is a net exporter of fruit, vegetables and cereals. But the rest of the area, (although not every country), aside from the export-oriented "core commodities," is now a food deficit region with Venezuela accounting for about half of the $600 million net food imports in 1974. With low productivity, flight from the industry, and both high capital and high energy requirements to improve resource use in the food-producing industry, the agriculture sector threatens to serve as a drag on growth of at least the tropical zone in the South Atlantic area. Nigerian agriculture shares all of these characteristics, in acute degree.

Energy Production in the South Atlantic Area

The South Atlantic region as a whole is a substantial energy surplus area. As shown in Table 6, petroleum production in the South Atlantic is about one-fourth the world total outside the Middle East and the Communist countries; it produces more than half the oil output of the less developed countries outside the Middle East. For Europe and North America, it is an important supplier, an alternative to dependence on the Middle East. Without this source of supply, backed up by nearly ten percent of the non-Communist proved reserves of oil and nearly eight percent of proved natural gas reserves, the leisurely debate over energy policy in the industrial world could not proceed and concern about security of energy supply would be far more urgent.

Of course, not all South Atlantic countries share in the surplus. Brazil is a very important exception. Uruguay is another energy-deficit nation, and so are the African agricultural-exporting nations West and North of the Gulf of Benin. South Africa has no petroleum, but as may be seen in Table 7, it has substantial production of coal, hydro-power, and domestically-fueled nuclear power installations. Only Brazil is a significant energy-material importer and heavily burdened by the higher cost of imported fuels, with South Africa relatively less dependent on imported fuel and less substantially burdened.

As a source of international supply, Venezuela and Nigeria are likely to continue as the predominant exporters until 1990. Their circumstances, however, are quite different. Venezuela's petroleum production is from giant fields likely to approach exhaustion within this time period; major additions to known reserves of light oil are considered unlikely and production controls are expected to reduce lifting rates. The technology to lift the Venezuelan heavy oils may appear at the end of the 1980s, but very large new coal fields are now being tested to produce an alternative, exportable energy supply. By contrast, Nigeria has no very large fields but the prospects of adding to known reserves are considered sufficiently favorable, by Nigerian authorities at least, that liftings are scheduled to rise at an average rate of seven percent annually until the middle 1980s. The low-sulpher Nigerian crude is judged to have favorable marketing prospects. Both Nigeria and Venezuela have major natural gas resources and plans for their utilization.

To help visualize the relationships among oil-producers of Africa and Latin America, Chart 4 shows petroleum production in 1974. Charts 5 and 6 show proved oil and gas reserves, with the areas of the circles on all three charts at about equivalent scale. To provide a broader perspective, Chart 7 shows the South Atlantic oil production in relation to world output in 1974, and Chart 8 shows South Atlantic proved reserves in relation to world proved reserves of oil. On both charts, the cross-hatched area of the "world" figure represents production or reserves of the Communist countries.

For the coming decade and a half, the energy sector is likely to be the source of serious balance of payments concern for Brazil, and possibly a security-of-supply concern for South Africa. It will continue to provide the engine of growth and serve as the chief source of foreign exchange for both Venezuela and Nigeria, but at a declining rate for the former and of growing importance for the latter. About ten of the other countries in the region are secondary net exporters or substantially self-sufficient in energy materials, while the rest are likely to remain net fuel importers at a cost of about ten percent of their export earnings.

Minerals Production in the South Atlantic Area

The South Atlantic nations are a major source of supply for the minerals requirements of Europe and North America. The major non-fuel minerals produced in the area are shown in Tables 8 and 9. Nations of this region are important suppliers of two (manganese and bauxite) and secondary suppliers of three (iron ore, copper, tin) of the five minerals on the UNCTAD-Group of 77

list for international negotiation of price stabilization (and price-raising) agreements. Europe is a net importer of all five of these minerals (indeed, of all the minerals shown in Table 9), while the United States is dependent on imports for 100% of domestic consumption of manganese (also, cobalt and chrome), 88% of bauxite, 84% of tin, 20% of copper, and 17% of iron ore.

The complementarity of rising industrial-country appetite for minerals which must be imported and the distribution of minerals with high-grade deposits in the South Atlantic is such that the marketing prospects for the mining sector of the region appears secure for the coming two decades. The known mineral resources, among the Latin American and African nations in the region, can readily support planned rates of industrialization; future additions to reserves are likely, as very substantial areas have not yet been adequately covered by geological surveys. There is also substantial room for further expansion of metals processing and other stages of downstream operations of the mining-metals sector of the region.

Most nations of the region share to some degree in the production and in the export of non-fuel minerals but the distribution of mining activity is, of course, much more highly concentrated than agriculture. South Africa and Zaire are major world suppliers; Brazil, Gabon, and Liberia also have quite sizeable mining sectors -- and bauxite mining is dominant in the economies of Guyana and Surinam. South Africa is among the chief minerals producers on a world scale; there are located in South Africa and Namibia 26 of the world's 479 large open pits and 72 of the world's 610 large underground mines.[5] The range of minerals produced in South Africa is a second distinguishing feature; of the 17 minerals shown in Table 9, South Africa and Namibia are among the region's principal producers of 13 and the largest producer of ten. But the most important factor distinguishing South Africa from all other countries in the area is that it has an installed metallurgical industry. Large-scale ore production, range of minerals, dominant-supplier position, and associated metallurgical facilities all place South Africa in a separate category from other nations in the region -- among the world's five most important non-fuel minerals producers.

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[5]These 1,089 large mines (producing each more than 150,000 tons of ore per year) plus the 37 large alluvial operations accounted for 90% of world ore production, other than coal, in 1975; China and Comecon countries are not included in these data. See "International Mining Survey," Mining Magazine, September, 1976, pp. 233-247.

At the same time, it should be seen in the perspective of the larger region in which it is located -- which constitutes, apart from South Africa, a major minerals supply area of the world. Alternative sources of supply for South African and the South Atlantic area production are shown in Table 9; other than for gold, diamonds, and platinum, alternative sources of primary production and secondary recovery are located elsewhere in the world, The location of large-scale mining operations, it should be added, is very importantly a matter of industry discretion. South African and other South Atlantic mineral production is important to the rest of the world, but the security of supply is not critical in a sense that there are alternatives lacking.

In general, the growth of the mining industry in the South Atlantic area is difficult to forecast confidently, not because of the likelihood of physical exhaustion as in the case of petroleum, but because there are unresolved questions about how the issue of ownership of mining facilities will be resolved in this area and uncertainty about the adequate availability of management resources to maintain and expand large-scale ore production and processing. These uncertainties are not more acute than elsewhere in the less developed world; but make it diffucult to judge the probable rate of mining growth in the less developed and more highly developed areas.

Among the major nations of the area, Argentina and Nigeria are relatively poorly endowed with non-fuel mineral resources. Mining production is relatively limited in Nigeria and it is unlikely to share in an important way in the growth of this industry over the coming fifteen years.

Manufacturing in the South Atlantic Area.

As we have already seen in surveying the distribution of economic activities, shown in Table 2, the value of production in manufactuing substantially exceeds the combined output of agriculture, energy, and mining in the LASA nations -- with the notable exception of Venezuela -- but is very limited in the AFSA nations. Manufacturing,including value added by the metallurgical industry, is nearly one-fourth of South African gross production. On both continents, growth rates of manufacturing production have been high for the past decade and a half and most countries continue policies that are likely to encourage future high growth rates. The policies have the effect of mobilizing resources from other sectors -- including manpower from agriculture and foreign-exchange earnings from mining and fuels production -- and the concentration of these resources in expansion of processing and manufacturing activities. Venezuela and Nigeria, both with quite limited manufacturing

sectors now, are pursuing plans to channel oil earnings very substantially into expansion of manufacturing capacity -- to anticipate growth of domestic demand, "catch up" with the import substitution for manufactures presently purchased abroad, and penetrate foreign markets in their own neighborhoods and (if appropriate preferences and other terms of access are available) in Europe and North America. This does no more than replicate the goals that animated growth of manufactures over the past two decades in the early-starter, notably in Brazil and Argentina.

The very large domestic markets of Brazil and Argentina attracted this policy orientation in the 1950s. Nearly three-quarters of all manufacturing activity in the South Atlantic area is now located in those two countries, and the degree of import-substitution achieved by expansion of domestic manufacturing capacity is nearly 90% in Argentina and about 75% in Brazil, contrasting with about 58% in Venezuela, 47% in South Africa, and 39% in Nigeria.[6] Among these major economies of the region, only Brazil and South Africa produce substantial manufactures for export; foreign sales are fully 10% of South African manufactures and about 6% of Brazil's output. In view of its balance of payments restraints, Brazil is engaged in a strong manufactures-export promotion effort.

The prospects for future growth of trade in manufactures within the region -- such as Brazilian manufactures to pay for Nigerian oil -- are not self-evidently favorable, as might be suggested by the indifferent success thus far in achieving the goals of establishing customs unions or similar preferential trade areas in South America and West Africa. The national markets are generally small; competition from industrial countries is intense; the rapidly-growing economies such as in Venezuela and Nigeria intend to accelerate their own import-substitution capacity; transport-cost advantage is uneven; and many of the manufactures already established under impetus of the import-substitution strategy remain tenaciously high-cost, often requiring explicit or hidden subsidies to compete in export markets.

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[6]Hard data appropriate for making computations of domestic supply of national markets for manufactures is not available on a basis that will permit accurate international comparisons. These are very rough approximations, for comparison of orders of magnitude. The reference here is to the producers-cost value of domestic manufacturing, less exports, in 1974 as a ratio of total domestic use of manufactures in that year (for consumption, investment, and additions to stocks). The estimates used are from the sources of Tables 2, 13, and 14.

Moreover, the Brazilian experience with its forced-growth expansion of manufacturing seems to illustrate an even less encouraging possibility. There are shown below some very rough estimates of the value added by domestic resources and by imports, including inputs required by the domestic manufacturing enterprises, in relation (as percentage of) to total value of manufactures used domestically and exported by the major economies of the area. After nearly two decades of protection and subsidy to encourage domestic manufacturing, Brazil has nearly completed the process of supplying from its domestic enterprises the demand for consumer-goods manufactures and a very substantial part of the capital goods which can be produced at competitive cost in Brazil, including protection and subsidies. But manufactures are rising in Brazil's imports, in part to supply high-technology inputs of the manufacturing sector itself. Moreover, both fuels and other raw materials for the manufacturing sector are also increasing items in the import bill. Brazil is finding it very difficult to enlarge further its domestic share of total value added, for internal consumption, and incurs high import cost to export manufactures. Recent attention has been focused on the imported-fuels problem for countries such as Brazil (and India, as a similar case), but this may misstate the problem; energy costs are rising for everyone, and a comparative advantage obtains only for countries (including both Venezuela and Nigeria, with respect to use of natural gas) with low opportunity cost of added energy output. The more fundamental problem is the general one of subsidized and protected expansion of manufacturing in lines, and at a scale, conflicting with the nation's comparative advantage.

Sources/Uses of Manufactures, 1974, in percent

	Sources		Sources of Value-Added			
				Imported		
	Domestic	Exports	Domestic	Fuel	Raw Mat.	Manuf.
Argentina	96	4	81	3	6	10
Brazil	94	6	61	6	10	24
Venezuela	98	2	46	..	13	41
S.A.C.U.	90	10	41	5	6	47
Nigeria	100	..	25	2	12	61

For the coming fifteen years there may be an increase of trade in manufactures within the South Atlantic area -- while the rapidly-growing economies such as Venezuela and Nigeria are installing their own manufacturing capacity, and while exporters such as Brazil are able and willing to subsidize exports to these markets within the area as part of a second-best balance of payments strategy. But the longer-term prospects, as Venezuela and

Nigeria (for example) complete their installation of manufactures as one substitute for declining energy-sector production, is that there are likely to be many countries in the South Atlantic confronting variations of Brazil's current problems.

International Trade of the South Atlantic Area

We have already identified many of the features of foreign trade and investment in surveying the sectors of major economic activity. We can summarize briefly the chief characteristics of the direction and composition of international trade of the South Atlantic nations. Direction of trade information appears in Tables 10 and 11; the composition of commodities in the international trade of the South Atlantic countries is shown in Tables 13 and 14.

For all groups of countries in the area, the major trading partners are located in North America and Western Europe. Two-thirds of all South Atlantic imports and about three-quarters of all exports are absorbed in this North-South trade flow. Japan is a significant, but secondary, source of imports for the LASA nations. The Centrally Planned Economies do not constitute important markets or sources of supply for this area. About 11% of LASA imports are from sources in the Western Hemisphere other than the United States and Canada; AFSA countries report only 7% of imports as being of African origin (but unreported imports from South Africa may account for another two or three percent). Chart 9A, with the magnitude of export-flows drawn to scale in the width of the arrows, is intended to help visualize the great predominance of trade with the large, industrial markets of the American and European Developed countries.

AFSA exports show a relatively greater concentration on minerals and fuels (about three-quarters of total value of exports) than for the LASA countries with minerals and fuels accounting for about half the total value of exports). Exports of agricultural products and manufactures are, relatively, twice as important to the LASA countries as are similar exports to the AFSA countries. Minerals predominate in the exports of South Africa. About two-thirds of AFSA imports and half of LASA imports consist of manufactures; Brazilian imports of fuel and of iron and steel plate account for another quarter of the LASA imports.

Trade flows within the South Atlantic area, and of LASA and AFSA nations with other parts of Africa and Latin America, are shown in Table 12. The intra-area trade flows are very small, and the trans-Atlantic trade within the area is extremely limited. The similarities of composition of exports and import

demand, and the limited correspondence of area exports to imports required, makes a dramatic change in the magnitudes of intra-area trade unlikely. We have already considered the prospects for enlarged trade in manufactures. Unless guided by political considerations, there is little likelihood (or advantage) in greatly expanded intra-area trade in petroleum, but natural gas and its products have more favorable possibilities. Expanded intra-area trade in food is a final possibility.

Future cooperation in food production and the prospects of regional or neighborhood food-fuel trade is a highly speculative subject. The poor performance of the food-producing sector, particularly in Africa, has been discussed above. There is growing awareness of the danger, including the prospective drag on national growth, associated with this record, significantly stimulated by advice from abroad. In general, the tentative policy efforts to address this problem have emphasized goals of national self-sufficiency in food production. It is not at all clear that this is the efficient, or even the feasible, scale for confronting the requirements of increased productivity and improved resource use in agriculture of, at least, the AFSA nations of the South Atlantic area. Neighborhood, sub-regional, or area approaches to agricultural resource planning may prove to be advantageous.[7]

We have already stressed the high energy requirements of existing technologies for high-yield and high productivity reforms, or for drawing substantial new resources into food production. In the South Atlantic area, and particularly in the West African neighborhood surrounding Nigeria, the elements are present for a very substantial expansion of food and fuel trade to facilitate and to realize regional planning of increased food production -- if there emerges a political will to proceed in this way. This emphasis on energy requirements should not obscure a similar intra-area prospective trade in other needed agricultural inputs as well.

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[7]This is a subject of current investigation in West Africa by my colleague, Professor Dirck Stryker, conducted in association with West African Rice Development Agency and the Stanford Food Research Institute. It is also a working premise of the world-wide chain of food-production technology research institutes. But demonstration of the advantages will likely have to be clear and convincing to moderate the present trend toward national self-sufficiency policies of many less developed countries.

The South Atlantic Area in 1990

Summarizing our inspection of the resource base underlying the major sectors of economic activity in the South Atlantic area and the distribution of prospects for future growth of these sectors in the nations of the region, we may speculate about the possible size and structure of the area in 1990. A forecast of population and product in 1990 appears in Table 15, which may be compared with similar aggregates for 1974 shown in Table 1. A bloc-map of the South Atlantic nations, showing relative size by gross output in 1990, is given in Chart 9B and may be compared with Chart 3 (areas shown on Chart 9B are drawn at a 1:2 scale as compared with Chart 3: similar areas represent twice the real output in the 1990 map as the 1974 map). The implied annual growth rates of population and real output for the 1974-1990 period are shown in Table 15, and may be compared with the realized growth rates of 1965-1973 shown in Table 3.

If these speculations are even approximately realized, the relative importance of South Africa and Argentina will decline in the coming 15 years, while Brazil may maintain about its present (very great) importance in the South Atlantic area and both Venezuela and Nigeria will show substantial increases. By 1990, real output of Venezuela may equal that of Argentina (although Venezuela's population will be less than two-thirds that of Argentina). Nigerian gross outupt may be greater than that of South Africa and Namibia, and its population two-and-a-half times greater. Together, Nigeria and Venezuela will be approaching the production level of Brazil.[8]

Nigeria's Potential Role in the South Atlantic Area

The forecast of Table 15 envisages the emergence of Nigeria by 1990 as a middle-sized economic power, at a real income level equivalent to the present high-income group of less developed countries (about the present *per capita* income of Turkey or Taiwan), and with a population about the same as that of Brazil today. It is clearly the dominant economy of West Africa. Its economic structure would be very significantly transformed, with manufacturing the source of about 18% of gross national product -- well advanced toward the goal of providing employment for the urban migrants and replacing the dependence on continued oil production. Real output in agriculture would

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[8]The estimates retain the same relatively low value for oil production volume, as described in footnote 3, above.

be 60% greater than in 1974, and about 20% higher per capita than at present. In relation to the South Atlantic area, it would be a major importer of raw materials for processing and manufacturing, and engaged in promoting exports of both fuels and manufactured goods. It seems very likely that its economic weight would be decisive in Black Africa, and that it would exercise very substantial influence in a West African zone of economic hegemony.

Just how likely is this to occur? What are the conditions for this outcome, other than those we have already surveyed in the context of economic trends in the South Atlantic area as a whole?

It should be asked, first, if this forecast is consistent with the intentions and preferences of Nigeria's present leaders and planners. It is for well into the 1980s -- to the limits of the long-term planning announced by the present Nigerian government. Studies which accompanied the Third National Development Plan (1975-1980) project the performance goals of the Nigerian government to 1985.[9] With account taken of likely delays in attaining expenditures targets in the present plan period, the forecast of Table 15 is broadly consistent with announced growth rates and proposed structural changes in the Nigerian economy. We may observe that the Nigerian planned growth is based on several key premises, including: a 7% annual average increase in crude oil production to the end of the 1980s; stable oil export prices at 1974 real levels to 1985; 15% annual growth rate of manufactures and related services; and 3% annual growth rate of agricultural production.

There are factors involved in those premises which are not within Nigerian control: the rate of growth of Nigeria's petroleum market overseas and the unit-value level of petroluem sales are among these. The addition of at least 50% to present proved reserves of petroleum will also be required. To an important degree, this may be subject to Nigerian policy with respect to the role it will permit foreigners to play in exploration and production of petroleum, and the terms at which foreigners are permitted to play that role. Nigeria has continuing need for exploratory and production technology, particularly

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[9] A useful summary of plan goals, review of progress, and discussion of relevant policies is presented annually by the Central Bank of Nigeria. See: Central Bank of Nigeria, Annual Report (for the Year Ended 31 December 1975), Lagos, 1976, esp. pp. 14-22 and passim.

in light of the small size of the presently known fields; the national capabilities are still quite limited and Nigerian policy with respect to foreign participation in its continuing petroleum development is subject to both domestic and international political influences. This is the counterpart, for Nigeria, of uncertainty about the future development of large-scale mining in other nations of the South Atlantic area; it appears to be of more crucial importance to Nigeria, and its prospects of achieving its planned growth, than to most of the mineral exporters of the area.

Related to the uncertainty with respect to organization of the petroleum sector and the role of foreign participation is a broader question of the public-private relationship in the Nigerian economy. Nigerian commercial and industrial development in the past has been emphatically influenced by private endeavor and enterprise; there is a broad business community in Nigeria, chiefly experienced in management of smaller and middle-size organizations. Large scale enterprise experience is not widespread, nor is there an adequate pool of experienced technical talent to support the very high growth rates of modern industrial capacity foreseen in official Nigerian plans. This, and not the harbors or railways, is likely to be the effective limit on Nigerian absorptive capacity in the 1980s. This bottleneck of managerial and technical capacity is not eased, in Nigeria, by a transfer of functions from private to public responsibility; the management capability of public authority and civil service in Nigeria is gravely strained by the present scale of public administration -- and has been diluted further by the increase in number of political divisions and authorities in the country.

Enlarging the number of States has been one aspect of constitutional adjustment of the key political problem in Nigeria: the division between central and decentralized authority. This has been a centerpiece of past political instability in Nigeria, and the basic conflicting claims of communities in Nigeria persist. In general, it appears that the present strategy is to share the economic opportunities of the prospective high growth rate as widely as feasible throughout Nigeria, and in a variety of ways attempt to substitute economic opportunity for the power-rewards of political competition. While it seems very unlikely that, in the foreseeable future, Nigeria will confront the kind of irreconcilable domestic conflict that produced the civil war, or otherwise find assertions of secessionist goals strongly asserted among the communities of the nation, the management of distribution of economic opportunities is a delicate task. How it may be perceived by the civil government, and reactivated political parties that are scheduled to appear by 1979 is entirely unknown.

Finally, it may be asked whether Nigerians are prepared to accept the more active and demanding international role that its forecast emergence as the dominant economic power in West Africa will impose. Past Nigerian governments have not often sought to exercise persisting international influence; national concerns have generally been afforded a much higher priority than international economic or political goals. That success imposes unwanted obligations may be illustrated by the observation that, if Nigeria's national development plans are to be realized, a consequence is that Nigeria will be one of the three major producers in OPEC in the 1980s.

TABLE I. POPULATION, GROSS PRODUCT, AND GROWTH RATES IN THE SOUTH ATLANTIC AREA

	Population 1974 (millions) (1)	Gross National Product 1974(1) ($ billions) (2)	(2)/(1) (dollars) (3)	Annual Growth Rates 1965-73	
				Population (percent) (4)	Real GNP per capita (percent) (5)
Venezuela	11.6	19.8	1,710	3.3	1.3
Mineral Exporters	1.2	.7	610	2.3	1.8
Brazil	104.0	93.2	900	2.9	6.0
Argentina	24.6	46.9	1,900	1.5	2.9
Other Agricultural Exp.	3.1	3.3	1,070	1.2	.2
LASA	144.5	163.9	1,130	2.6	4.3 e
Nigeria	73.0	17.8	240	2.5	8.3
Mineral Exporters	26.1	5.0	190	2.8	3.6
Agricultural Exp.	47.7	15.0	310	2.2 e	2.1 e
AFSA	146.8	37.8	260	2.5 e	5.0 e
South Africa C.U.	24.3	29.2	830	3.2	2.0
South Atlantic Area	315.7	230.9	730	2.7	4.4

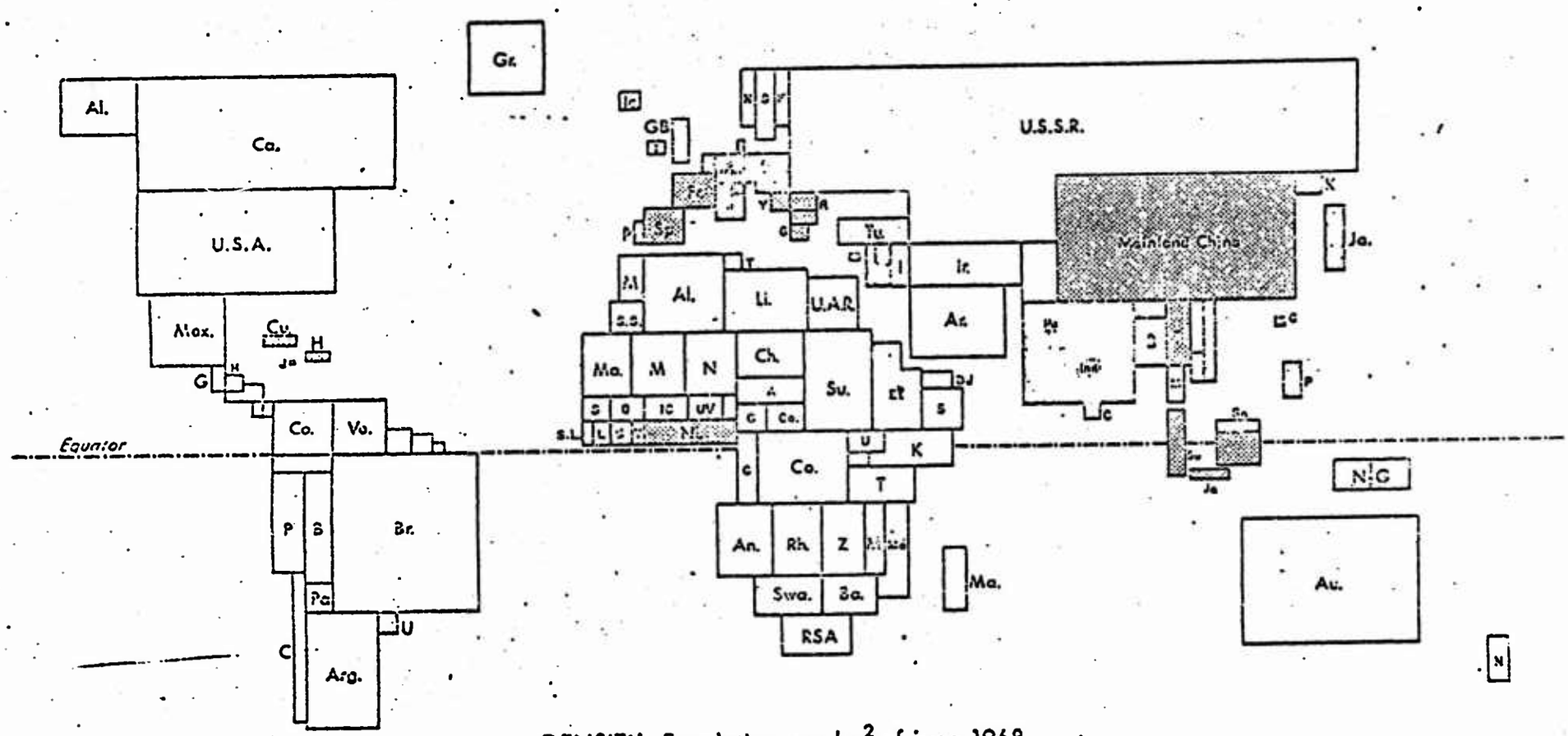
(1) In 1972-74 average prices and exchange rates; this substantially understates the relative weight of oil exporting countries.

Sources: IBRD, World Bank Atlas, 1975.

AREA AND POPULATION DENSITY BY COUNTRY, 1968

Chart 1.1

- COUNTRIES WITH AREAS OF 9,000 KM^2 AND OVER -



AREA

= 1 Million Square Kilometers

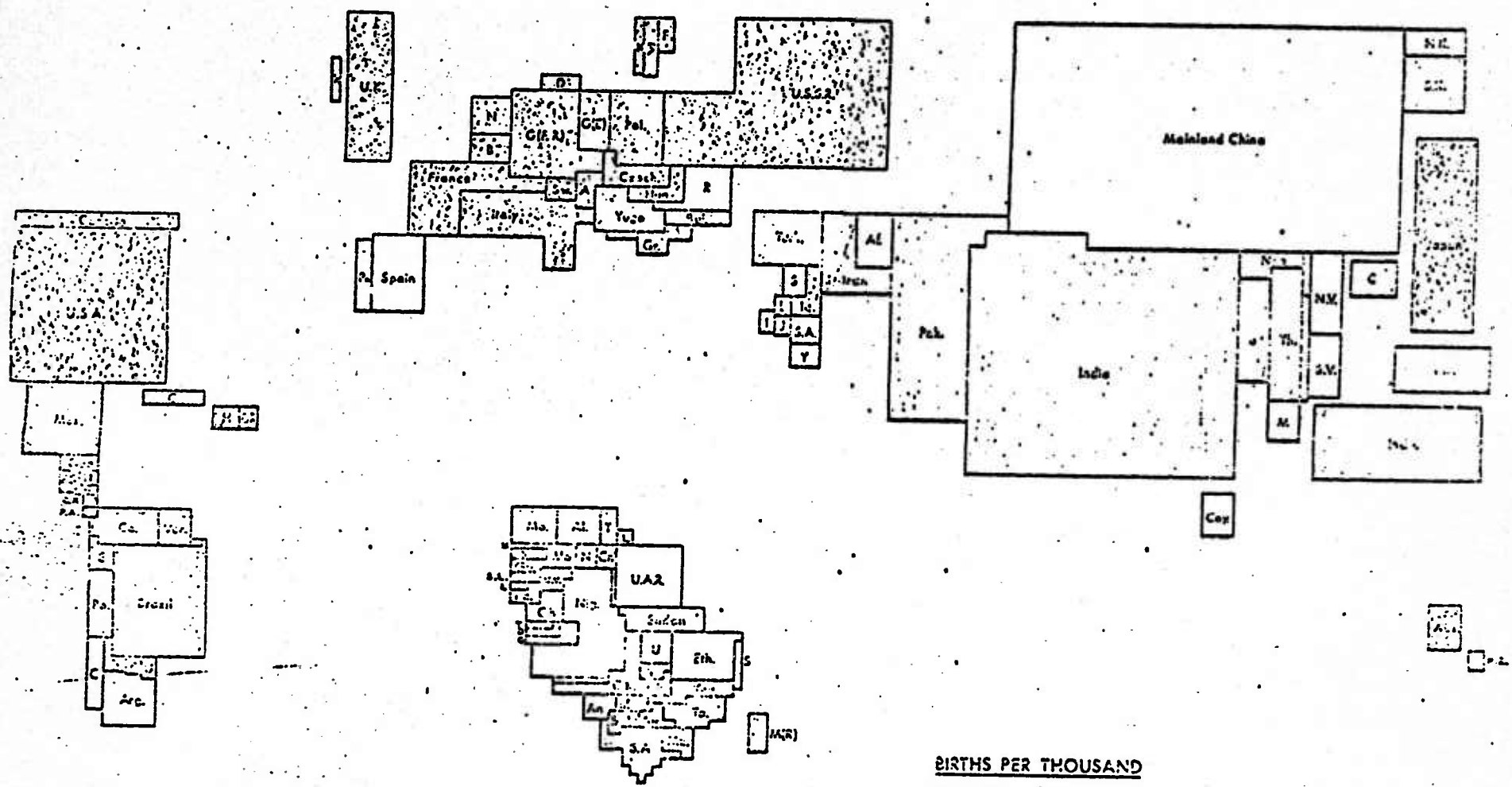
DENSITY: Population per km^2 of area, 1968

- Under 25
- 25 - 49
- 50 - 99
- 100 and over

IBRD

POPULATION AND BIRTH RATES BY COUNTRY, 1970

Chart 1.2



POPULATION (ESTIMATES MID-1970)

▭ = 10 Million Inhabitants

BIRTHS PER THOUSAND

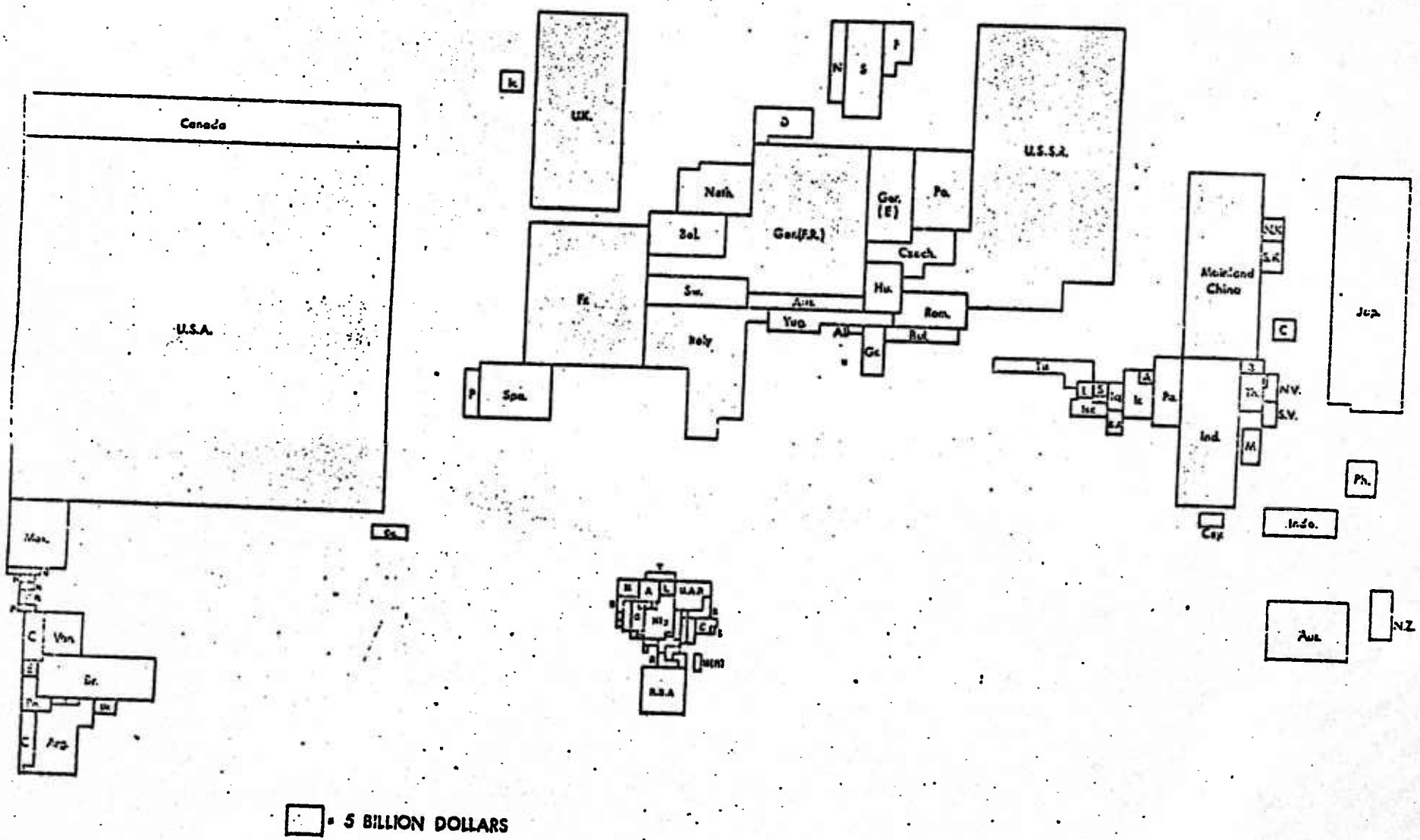
- Figures not available
- Under 20
- 20 - 40
- Over 40

IBRD

GROSS NATIONAL PRODUCT (GNP) BY COUNTRY, 1968

(BILLIONS OF U.S. DOLLARS OF 1964)

Chart 2.1



▭ = 5 BILLION DOLLARS

IBRD

CHART 3

GROSS NATIONAL PRODUCT BY COUNTRY 1974

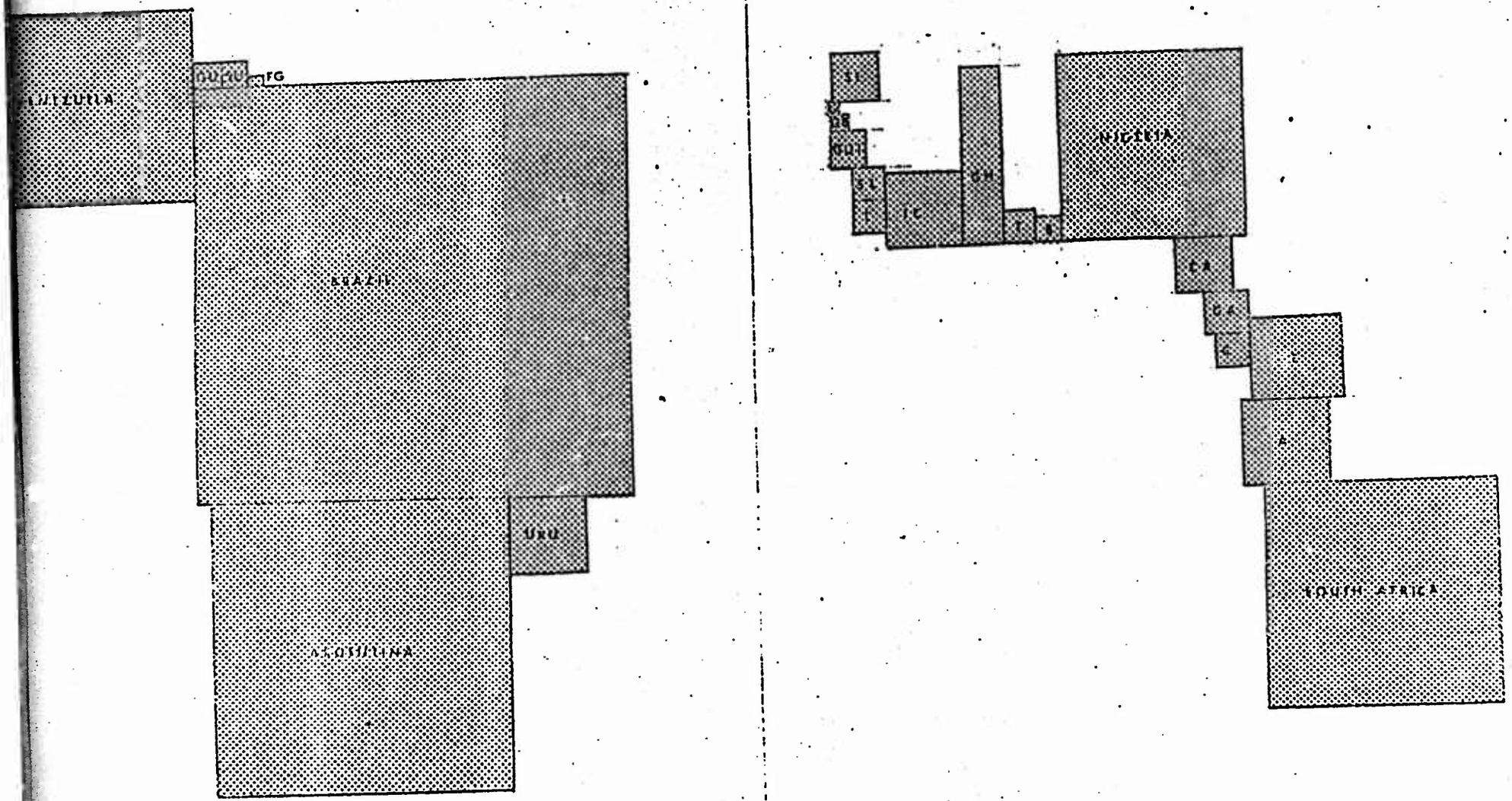


TABLE 2. ESTIMATES OF GROSS PRODUCT BY KIND OF ECONOMIC ACTIVITY

1973/4

	Billions of U. S. Dollars[2]				Percent of Gross Domestic Product[1]				
	Agriculture, Forestry, Fishing	Mining and Energy Production	Manufacturing	All Other Activities	Agriculture, Forestry, Fishing	Mining and Energy Production	Manufacturing	All Other Activities	Total
enezuela	1.21	4.86	3.64	10.12	6	25	18	51	100
ineral Exporters	.12	.14	.09	.38	16	20	12	52	100
razil	13.98	2.80	22.36	54.04	15	3	24	58	100
rgentina	6.57	1.41	16.42	22.51	14	3	35	48	100
ruguay	.61	.06	.77	1.77	19	2	24	55	100
ASA*	22.49	9.27	43.28	88.82	14	6	26	54	100
igeria	6.57	4.32	1.31	5.63	37	24	7	32	100
ineral Exporters	.86	1.33	.40	2.37	17	27	8	48	100
gricultural Exp.	4.99	.61	1.54	7.63	34	4	10	52	100
FSA*	12.42	6.26	3.25	15.63	33	17	9	42	100
outh Africa C. U.	2.34	4.67	6.72	15.48	8	16	23	53	100
outh Atlantic Area*	37.24	20.20	53.25	119.94	16	9	23	52	100

* Excluding French Guiana and Guinea-Bissau.

(1) Gross Domestic Product at producers' values in current prices, for 1973 or most recent year available.

(2) U.S. dollar weights are Gross National Product in 1974 at 1972-74 average prices and exchange rates.

Sources: Cols 5-9, United Nations, Yearbook of National Accounts Statistics, 1975.

TABLE 3. LAND USE IN THE SOUTH ATLANTIC AREA

	Total Area (million hectares)	Under Crops(1) (million hectares)	Permanent Meadows and Pastures (million hectares)	Forests and Woodlands (million hectares)	Area Under Cultivation for Each Member of Economically Active Population in Agriculture			
					Under Crops (hectares)	Permanent Meadows... (hectares)	Total (hectares)	Total Adjusted(2) (hectares)
Venezuela	91.2	5.2	13.8	48.0	6.15	16.33	22.48	10.23
Mineral Exporters	37.8	.9	2.4	29.0	8.46	23.66	32.12	14.37
Brazil	851.2	34.1	107.3	517.9	2.72	8.56	11.28	4.86
Argentina	277.7	26.0	144.9	62.7	19.31	107.53	126.84	46.19
Other Agricultural Exp.	26.9	1.9	13.6	8.6	10.02	73.70	83.71	28.44
ASA	1,284.8	68.0	282.1	666.2	4.53	18.79	23.32	9.23
Nigeria	92.4	21.8	25.0	31.1	1.44	1.66	3.10	1.86
Mineral Exporters	272.4	7.7	30.1	123.6	1.14	4.47	5.62	2.26
Agricultural Exp.	335.5	35.2	84.1	114.6	2.81	6.71	9.52	4.49
FSA	700.3	64.7	139.2	269.3	1.88	4.05	5.93	2.90
South Africa C.U.	204.5	12.7	143.3	14.5	5.85	66.00	71.85	22.35
South Atlantic Area	2,189.6	145.4	564.6	950.0	2.82	10.95	13.77	5.56

1) Arable land (under temporary crops or fallow, including bush fallow) plus land under permanent crops. Data on areas are for 1972 or most recent year; population data for 1970 (see Table 4).

2) Land adjusted by the conventional equivalency: 1 Ha. permanent grass = 1/4 Ha arable land.

Sources: Food and Agriculture Organization of the United Nations, Production Yearbook.

TABLE 4. ECONOMICALLY ACTIVE POPULATION IN 1970

(in thousands and percent.)

	Total 1970	In Agriculture 1970	Percentage In Agriculture 1970	Increase in Economically Active Population 1960-70	
				Total	In Agriculture
Venezuela	3,235	848	26	774	- 15
Mineral Exporters	334	103	31	81	15
Brazil	28,681	12,534	44	6,088	814
Argentina	8,869	1,348	15	959	- 235
Other Agricultural Exp.	1,100	185	17	74	- 27
LASA	42,219	15,018	36	7,9[illegible]	552
Nigeria(1)	22,534	15,098	67	4,011	1,987
Mineral Exporters	8,647	6,736	78	1,148	478
Agricultural Exp.	17,755	12,530	71	2,998	1,198
AFSA	48,936	34,364	70	8,157	3,663
South Africa C. U.	7,111	2,171	31	1,211	208
South Atlantic Area	98,266	51,553	52	17,344	4,423

(1) Total 1970 population stated to be 55.1 million.

Sources: FAO, Production Yearbook.

TABLE 5. SOUTH ATLANTIC AREA AGRICULTURAL EXPORTS: CORE COMMODITIES OF INTEGRATED COMMODITIES PROGRAM

(in millions of U. S. dollars; percentages)

	Coffee	Coca	Sugar	Cotton	Rubber, Jute, Hard Fibers	Tea	Total Eight "Core" Commodities	As Percent of Merchandise Exports
Venezuela	15	6	13	..	..	..	34	1
Mineral Exporters	..	..	47	..	..	..	47	15
Brazil	945	63	353	175	34	4	1,574	39
Argentina	..	..	40	..	..	12	52	3
LASA	960	69	456	175	34	16	1,710	18
Nigeria	3	158	..	11	15	..	188	9
Mineral Exporters	49	3	..	3	40	2	97	8
Agricultural Exp.	386	400	3	44	19	..	852	39
AFSA	438	561	3	58	75	2	1,137	21
South Africa C.U.	..	..	(165)	..	..	..	(165)	6
South Atlantic Area	1,398	630	624	233	109	18	3,012	17
N.B.								
As percent of Developing Market Economy Exports	46	87	27	12	6	3	29	
As percent of World Expts.	46	87	19	8	6	2	24	

Data shown are 1970-74 market shares at 1972 trade values, and percentage of 1972 merchandise exports.

Sources: Author's estimates for UNCTAD commodities study.

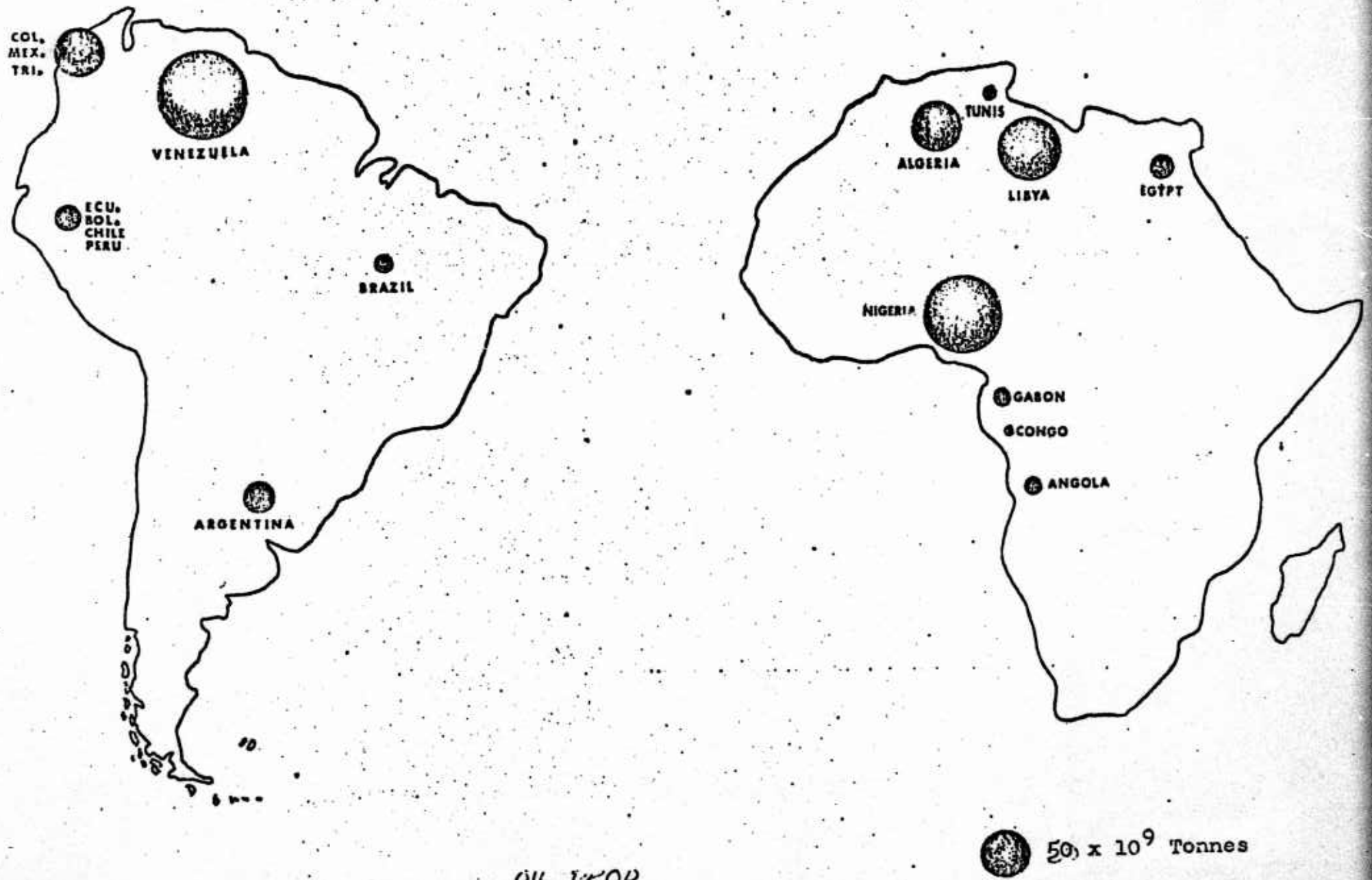
TABLE 6. PETROLEUM PRODUCTION AND RESERVES

(in millions of metric tons)

	Crude Oil Production 1974 (1)	Proved Oil Reserves 1/1/74 (2)	Natural Gas Reserves 1/1/74 (3)	Years of Oil Reserves Life			
				1974 Prod. 1974 Res. (4)	3.5% growth 1974 Res. (5)	7% growth 1974 Res. (6)	7% Growth 2 x 1974 Res. (7)
Venezuela	158.5	1,892	1,189	12	10	9	14
Mineral Exporters	..	..	..	..	..	..	..
Brazil	8.5	108	26	13	11	10	15
Argentina	21.6	338	227	16	13	11	17
LASA	188.6	2,338	1,442	12	10	9	14
Nigeria	112.2	2,703	1,133	24	18	14	21
Mineral Exporters	10.0	203	184	20	15	13	20
Agricultural Exp.	11.4	891	72	78	38	27	46
AFSA	133.5	3,797	1,389	28	20	16	23
South Africa C.U.	..	..	..	..	..	..	..
South Atlantic Area	322.1	6,135	2,831	19	15	13	19
N.B.							
Rest of Africa, LA, Asia	314.6	9,350	8,309				
Middle East	1,083.4	47,118	11,663				
ROW	1,141.5	21,397	33,040				
World Total	2,861.6	84,000	55,843	29	20	17	24

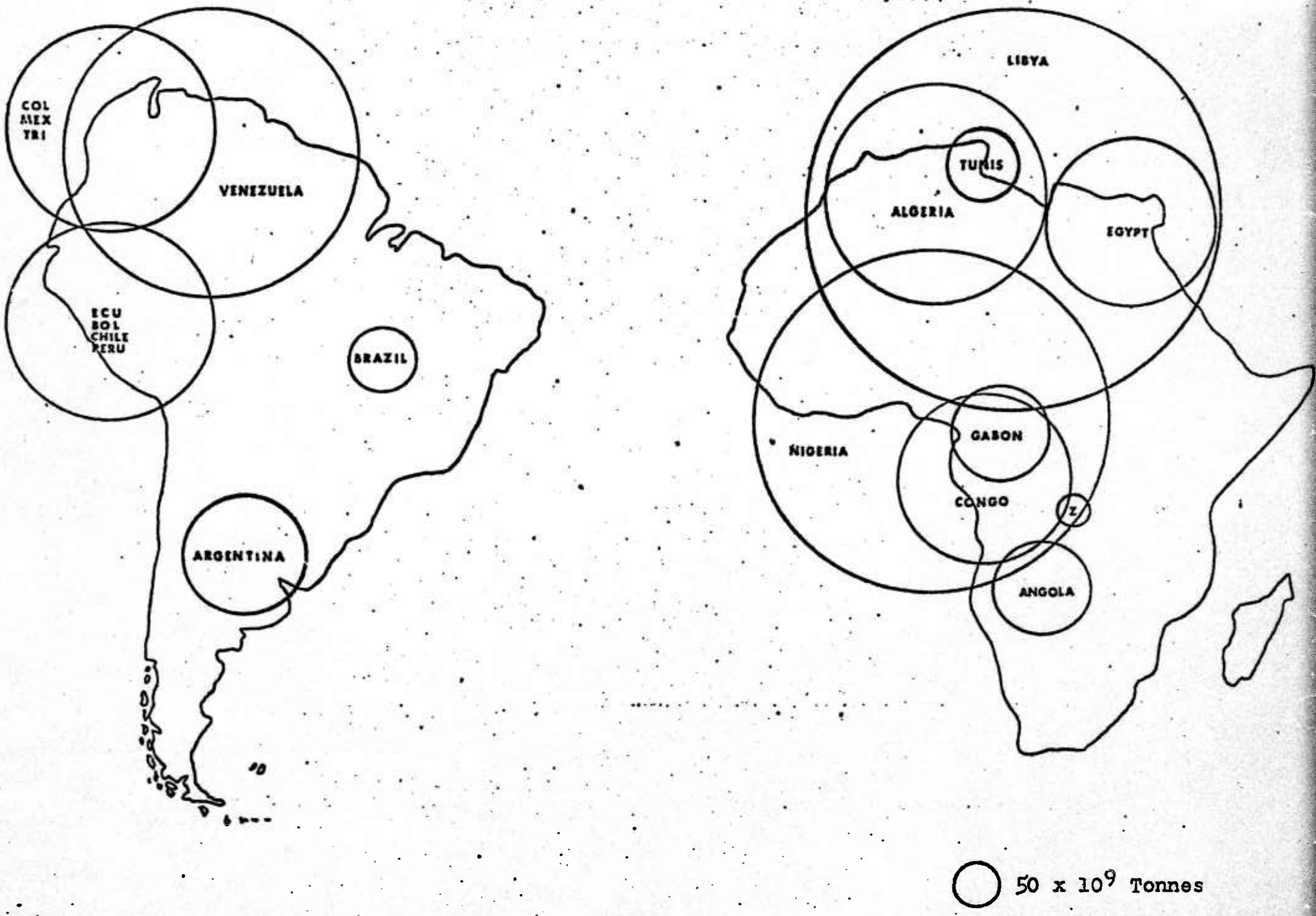
Sources: International Petroleum Encyclopedia, 1974.

OIL PRODUCTION 1974



OIL TREND

PROVED OIL RESERVES JAN.1,1974



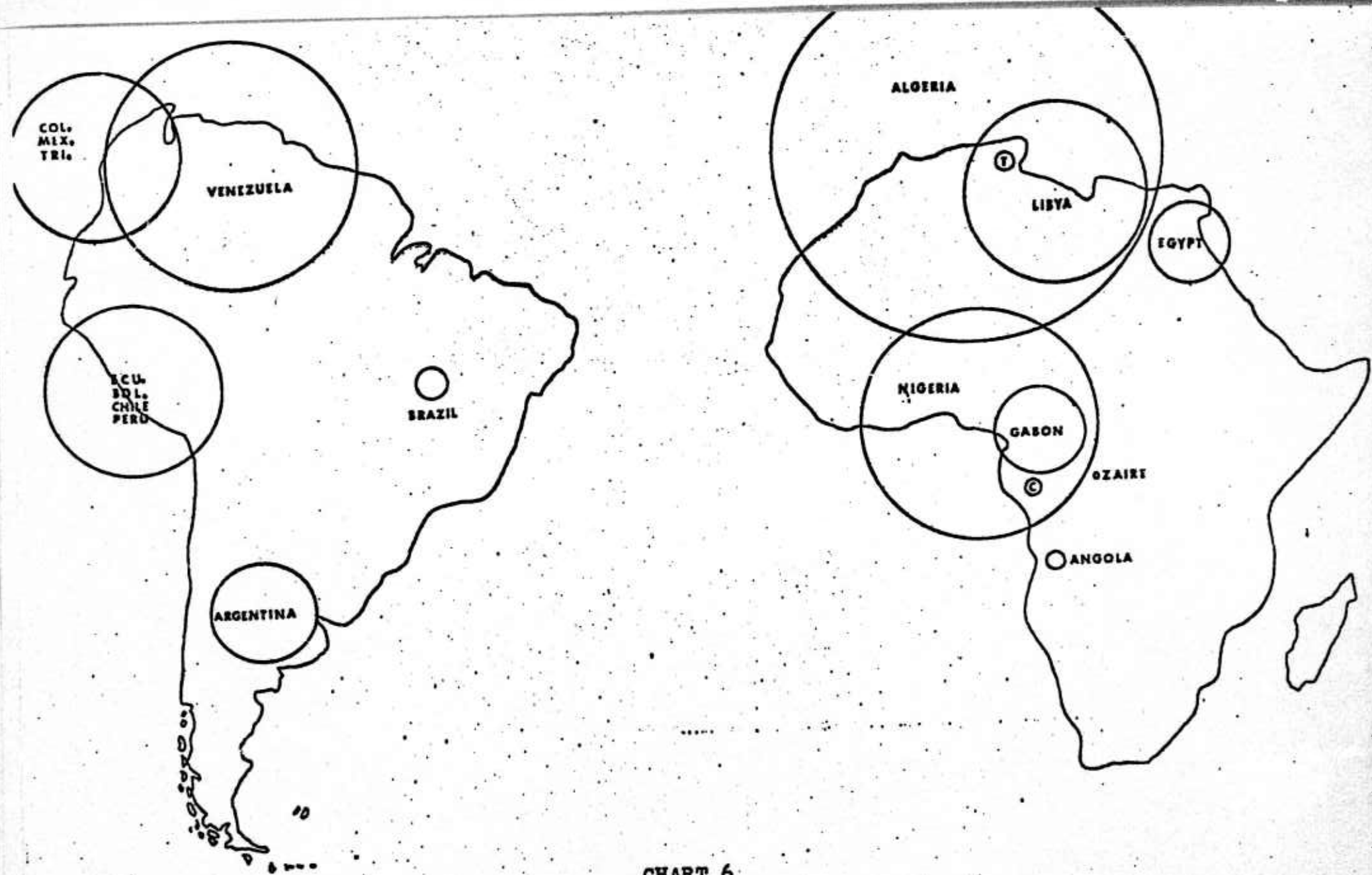


CHART 6
PROVED NATURAL GAS RESERVES
Jan. 1, 1974

○ 50×10^9 m^3

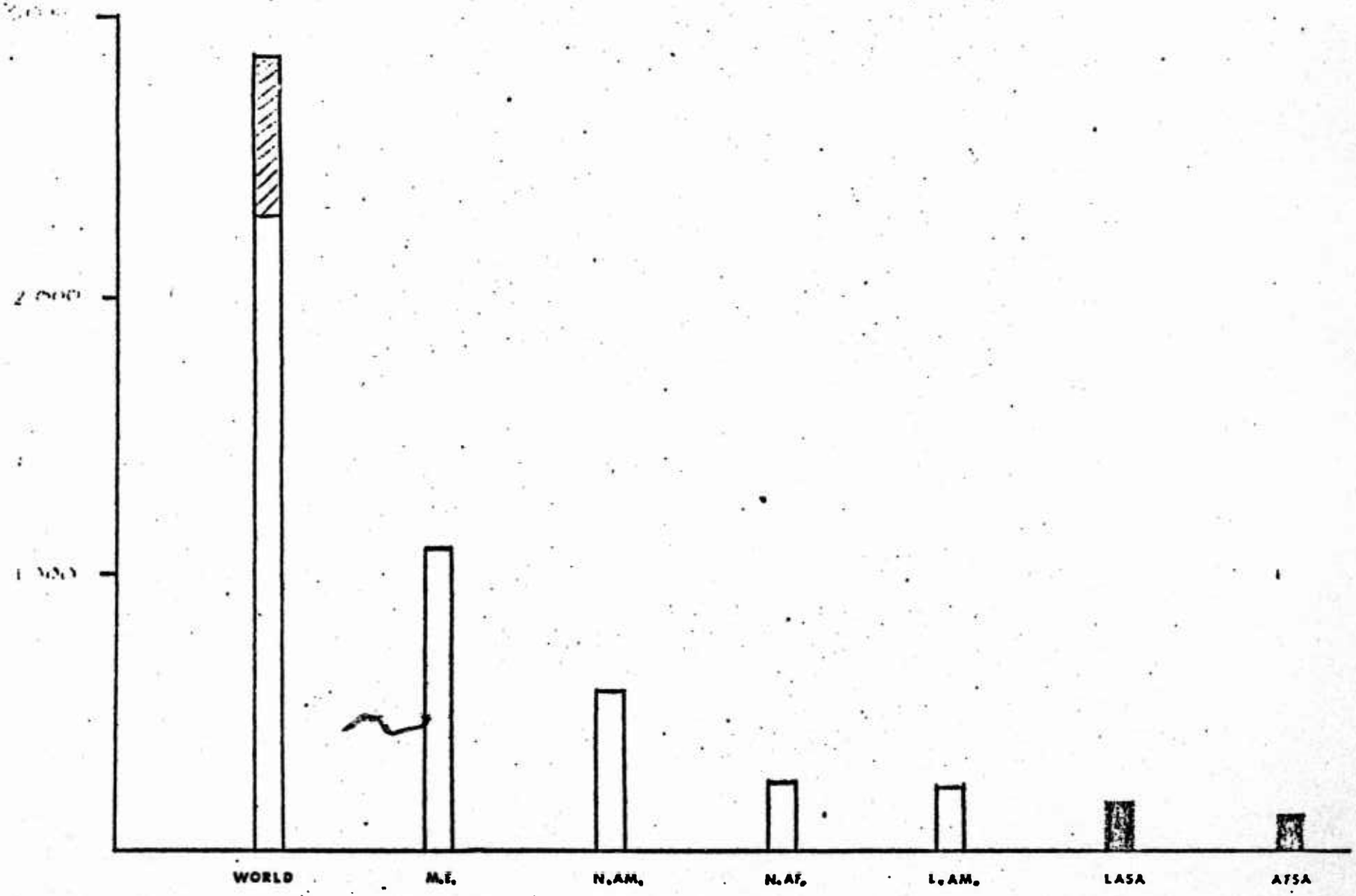


CHART 7
WORLD OIL PRODUCTION
1974

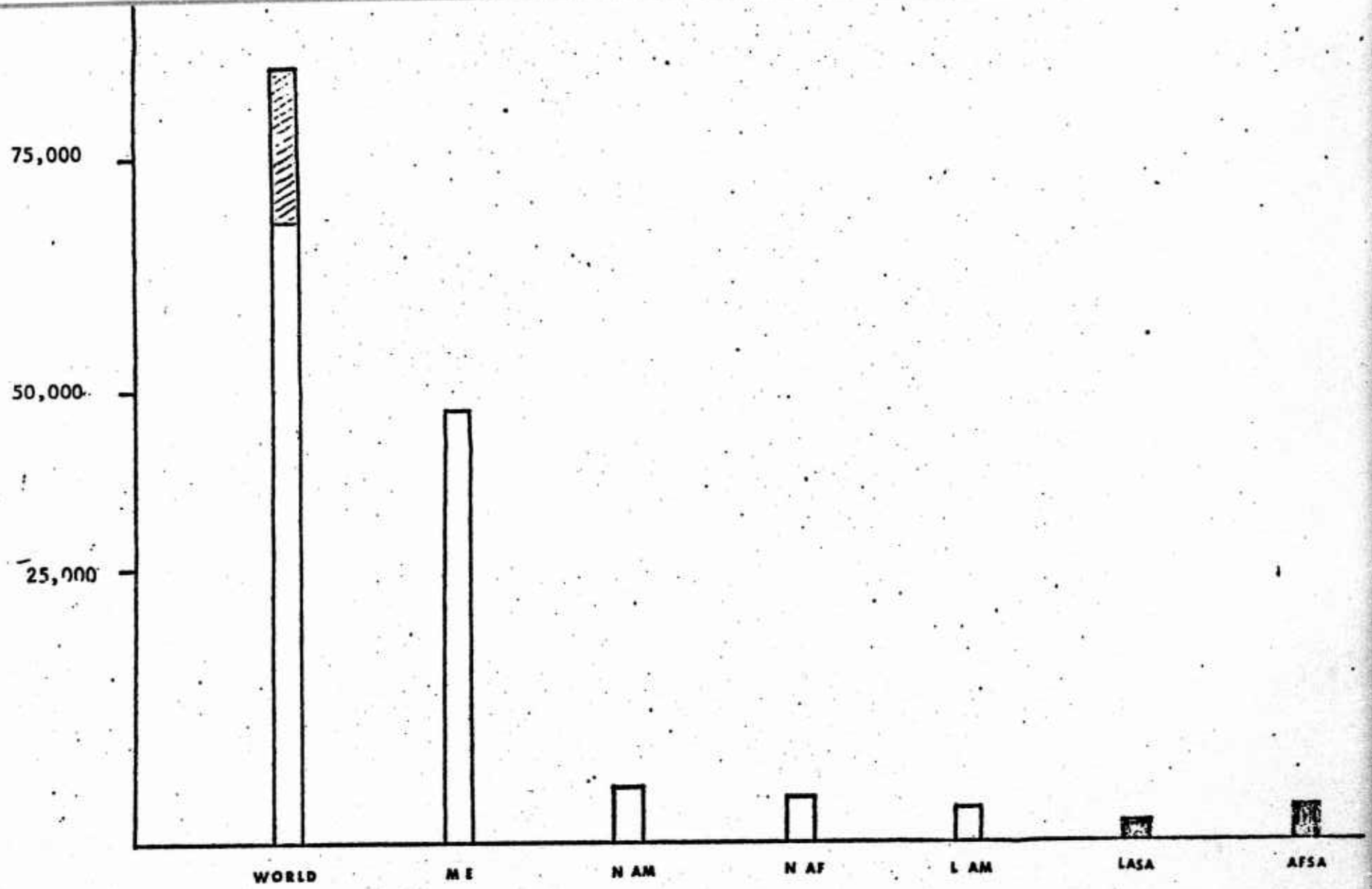


CHART 8
WORLD OIL RESERVES
Jan. 1, 1974

TABLE 7. PRODUCTION OF COMMERCIAL ENERGY, 1974

(in millions of metric tons of coal equivalent)

	Total Primary Energy	Coal and Lignite	Crude Petroleum	Natural Gas	Hydro-Nuclear Electricity	Net Export
Venezuela	250.3	.1	233.9	15.5	.9	216.9
Mineral Exporters	.1	..	..	..	.1	- 1.8
Brazil	24.2	2.6	12.7	.7	8.2	- 45.8
Argentina	42.6	.7	31.6	9.6	.7	- 7.0
Other Agricultural Exp.	.2	..	..	..	.2	- 2.7
LASA	317.4	3.3	278.2	25.8	10.1	159.6
Nigeria	165.4	.3	164.0	.9	.2	158.5
Mineral Exporters	15.7	.1	15.0	.1	.5	12.0
Agricultural Exp.	17.1	..	16.4	-	.7	9.6
AFSA	198.2	.4	195.4	1.0	1.4	180.1
South Africa C.U.	65.3	65.2	..	..	.2	- 13.8
South Atlantic Area	580.9	68.8	473.6	26.8	11.7	325.9
N.B. Rest of Africa and LA	366	16	300	43	8	122

Sources: United Nations, World Energy Supplies 1950-74.

TABLE 8. VOLUME OF PRODUCTION, SELECTED MINERALS, 1972

	10^6 Metric Tons					10^3 Tonnes	10^6 Tonnes	10^3 Kilograms	10^6 Carat
	Iron Ore	Bauxite	Phosphates	Manganese	Chrome, Copper, Zinc and Lead	Antimony, Cobalt, Tin, Vanadium, Uranium	Total Mineral Tonnage	Gold	Diamonds
Venezuela	11.089	..	.030	..	..	..	11.119	.533	.456
Mineral Exporters	..	10.484	..	..	..	..	10.484	.142	.047
Brazil	31.600	.765	.236	1.057	.225	2.813	33.886	6.338	.025
Argentina	.115	..	..	.004	.083	.605	.203	..	..
LASA	42.804	11.249	.266	1.061	.308	3.418	55.691	7.044	.528
Nigeria	..	..	..	..	-	6.731	.007	..	..
Mineral Exporters	22.543	..	..	1.184	.513	16.671	24.257	4.782	14.271
Agricultural Exp.	4.526	3.084	3.178	.260	.005	.036	11.053	22.590	7.727
AFSA	27.069	3.084	3.178	1.444	.518	23.438	35.316	27.372	21.998
South Africa C.U.	5.339	..	1.966	1.362	.942	28.528	9.638	909.631	8.991
South Atlantic Area	75.212	14.333	5.410	3.867	1.768	55.384	100.645	944.047	31.517

All expressed in terms of metal content of ore and concentrates except bauxite (gross weight of crude ore), natural phosphates and diamonds (mine and alluvial production).

Sources: United Nations, Growth of World Industry, 1973 edition, Vol. II.

TABLE 9. PRODUCTION OF MINERAL-BEARING ORES IN 1972

PERCENTAGE DISTRIBUTION OF WORLD PRODUCTION

	South Atlantic Area	North and Central America	Western Europe	Other Developing Countries	Communist Countries	World Total	Principal South Atlantic Producers
Gold	67.9	8.5	.6	7.0	16.0	100.0	SACU, Ghana, Brazil
Diamonds: gems	67.4	..	..	17.4	15.2	100.0	SACU, Angola, Zaire
Diamonds: ind.	52.4	..	..	24.3	23.3	100.0	Zaire, SACU, Ghana
Cobalt	49.1	14.5*	5.6	17.3	13.5	100.0*	Zaire
Manganese	45.6	1.4	.3	10.6	42.1	100.0	SACU, Brazil, Gabon
Vanadium	41.4	24.6	13.2	6.4	14.4	100.0	SACU
Platinum-group	30.7	9.8	..	4.4	55.1	100.0	SACU
Chrome	27.6	..	2.5	29.7	40.2	100.0	SACU, Brazil
Bauxite	21.9	24.3	12.2	29.5	12.1	100.0	Surinam, Guyana, Guinea
Antimony	21.3	7.1	5.6	37.3	28.7	100.0	SACU
Uranium	17.1	69.3	8.2	5.4	N.A.	100.0	SACU, Gabon
Iron Ore	16.8	15.6	16.1	14.7	36.8	100.0	Brazil, Liberia, Venezuela
Copper	8.8	34.9	3.8	37.5	15.0	100.0	Zaire, SACU
Tin	8.3	.2*	1.8	69.0	20.7	100.0*	Nigeria, Zaire, SACU
Phosphates	5.8	40.0	.1	27.9	26.2	100.0	SACU, Togo, Senegal
Zinc	4.3	35.1	13.2	25.3	22.1	100.0	Zaire, Namibia, Brazil, Argenti
Lead	3.7	32.4	13.1	25.8	25.0	100.0	Namibia, Argentina, Brazil

* United States production not included.

Sources: U. S. Bureau of Mines, Mineral Yearbook, 1972 edition, Vol. III.
United Nations, Growth of World Industry, 1973 edition, Vol. II.

TABLE 10. DIRECTION OF TRADE: DESTINATION OF EXPORTS, 1974

(in millions of U. S. dollars)

	U.S. and Canada	Western Europe	Japan Australia New Zeland	Centrally Planned Economies	Developing American	Developing African	All Other Destinations and Adj.	DOT Total
Venezuela	5,984	1,108	42	1	3,685*	35	11	10,866
Mineral Exporters	193	358	16	54	207	26	15	869
Brazil	1,832	3,175	598	393	1,092	371	492	7,95
Argentina	350	1,605	187	470	954	121	244	3,93
LASA	8,359	6,246	843	918	5,938*	553	762	23,61
Nigeria	2,548	4,849	378	129	1,106*	178	30	9,21
Mineral Exporters	341	2,144	116	2	175*	86	23	2,88
Agricultural Exp.	735	3,261	207	109	86	370	166	4,93
AFSA	3,624	10,254	701	240	1,367*	634	219	17,03
South Africa C.U. (1)	452	2,804	576	4	95	667	316	4,91
South Atlantic Area (1)	12,435	19,304	2,120	1,162	7,400*	1,854	1,297	45,57

* Includes petroleum consigned to West Indies refining centers: Nigeria 1,080; Gabon 130; Venezuela 2,440

(1) Excludes gold exports of about 3,600.

Sources: International Monetary Fund, Direction of Trade.

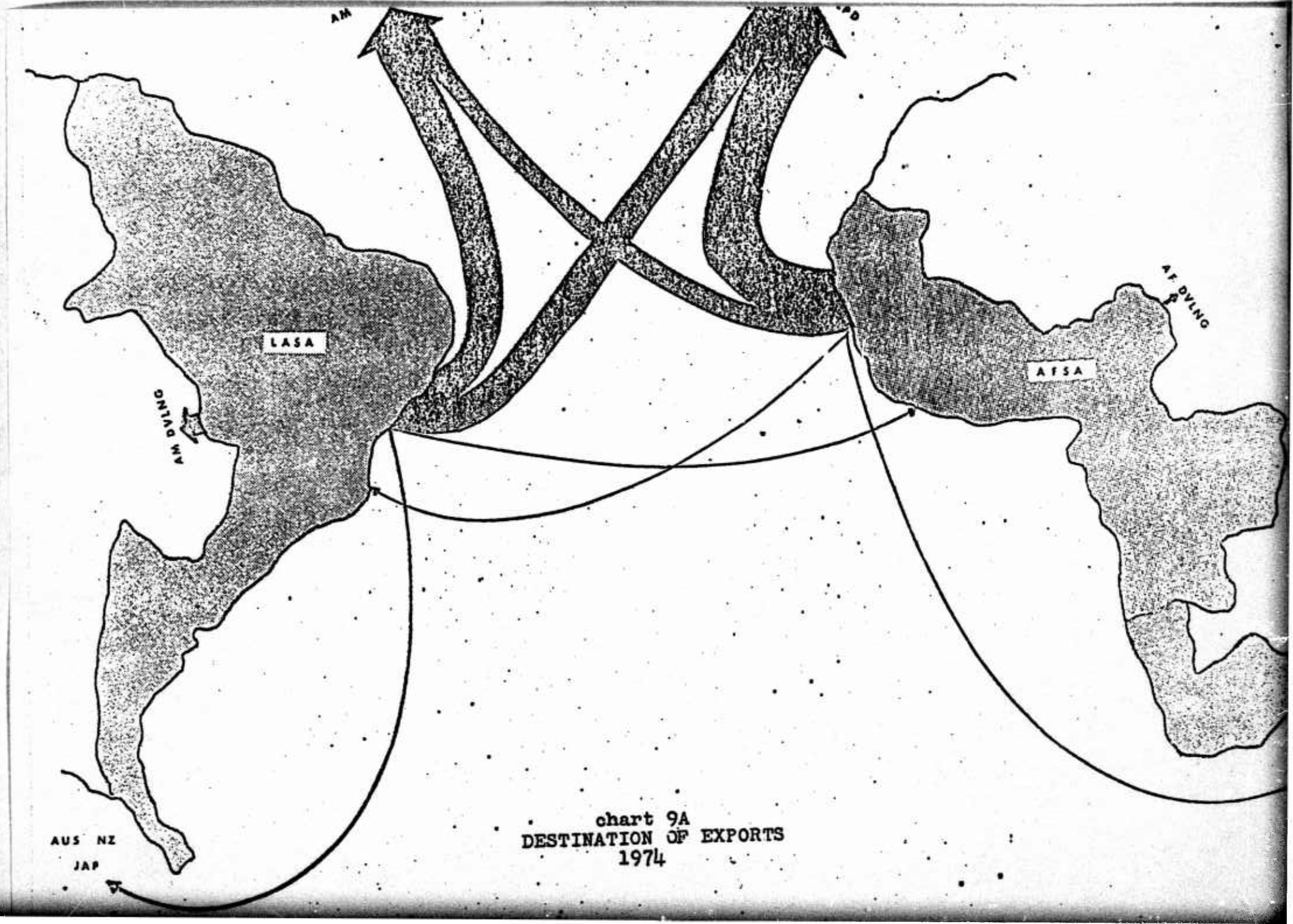


chart 9A
DESTINATION OF EXPORTS
1974

TABLE 12. TRADE WITHIN THE SOUTH ATLANTIC AREA, 1974(1)

(in millions of U. S. dollars)

Exports to → / Exports of ↓	Other Amer. Developing Countries	LASA Countries	AFSA Countries	Other African Developing Countries
LASA Countries	2,159*	1,339	102	452
AFSA Countries	109*	48	397	237

Imports from → / Imports of ↓	Other Amer. Developing Countries	LASA Countries	AFSA Countries	Other African Developing Countries
LASA Countries	1,185	1,321	94	961
AFSA Countries	73	83	385	193

(1) South African Customs Union trade omitted.
* Excludes petroleum consigned to West Indies refining centers: Nigeria 1,080; Gabon 130; Venezuela 2,440.

Sources: International Monetary Fund, Direction of Trade.

TABLE 13. COMPOSITION OF TRADE: EXPORTS, 1974

(in millions of U. S. dollars)

	Food	Agric. Raw Materials	Ores, Minerals, Metals	Fuels	Manufactures	Commodity Trade Total
Venezuela	88	5	311	10,304	124	10,833
Mineral Exporters	-	-	-	-	-	-
Brazil	3,987	1,092	842	111	1,919	7,951
Argentina	2,772	168	152	12	827	3,931
LASA*	6,848	1,265	1,305	10,427	2,865	22,716
Nigeria	369	189	48	8,538	34	9,178
Mineral Exporters	161	266	1,552	669	43	2,691
Agricultural Exp.	1,557	522	109	60	240	2,471
AFSA**	2,081	965	1,709	9,267	317	14,340
South Africa C.U.	1,201	655	5,343***	32	1,281	8,512
South Atlantic Area***	10,130	2,885	8,357	19,726	4,463	45,568

* Total of countries shown.
** Total of Nigeria, Gabon, Liberia, Zaire, Cameroon, Ghana, Ivory Coast, Sierra Leone.
*** Including gold, estimated to be 3,600.

Source: United Nations Statistical Office, special run for the South Atlantic Project.

TABLE 14. COMPOSITION OF TRADE: IMPORTS, 1974

(in millions of U. S. dollars)

	Food	Agric. Raw Materials	Ores, Minerals, Metals	Fuels	Manufactures	Commodity Trade Total
Venezuela	401	178	594	20	2,546	3,739
Mineral Exporters	-	-	-	-	-	-
Brazil	1,069	291	2,503	3,372	6,928	14,163
Argentina	172	278	839	528	1,818	3,635
LASA*	1,659	748	3,937	3,925	11,324	21,594
Nigeria	268	55	395	89	1,967	2,774
Mineral Exporters)						
Agricultural Exp.)	657	48	236	482	2,488	3,910
AFSA*	925	103	631	570	4,455	6,684
South Africa C.U.	399	361	420	1,189	6,045	8,414
South Atlantic Area	2,983	1,212	4,988	5,684	21,824	36,692

* Same inclusions as Table 13, except Gabon not included.

Source: United Nations Statistical Office, special run for the South Atlantic Project.

TABLE 15. FORECAST STRUCTURE OF POPULATION AND PRODUCT IN 1990

	Population 1990 (millions)	Gross National Product(1) ($ billions)	Annual Growth Rates 1974 - 1990	
			Population (percent)	Real GNP per capita (percent)
Venezuela	19.5	84.7	3.3	6.0
Mineral Exporters	1.7	1.4	2.3	1.8
Brazil	164.3	297.7	2.9	4.5
Argentina	31.3	94.0	1.5	2.9
Other Agricultural Ex.	3.8	4.9	1.2	1.2
LASA	220.6	482.8	2.7	4.2
Nigeria	108.4	67.2	2.5	6.0
Mineral Exporters	40.1	13.3	2.8	3.6
Agricultural Exp.	71.2	32.6	2.2	2.1
AFSA	219.7	113.1	2.6	3.7
South Africa C. U.	40.3	66.4	3.2	2.0
South Atlantic Area	480.6	662.3.	2.7	4.0

(1) In 1972-74 average prices and exchange rates.

CHART 9B
GROSS NATIONAL PRODUCT BY COUNTRY
1990

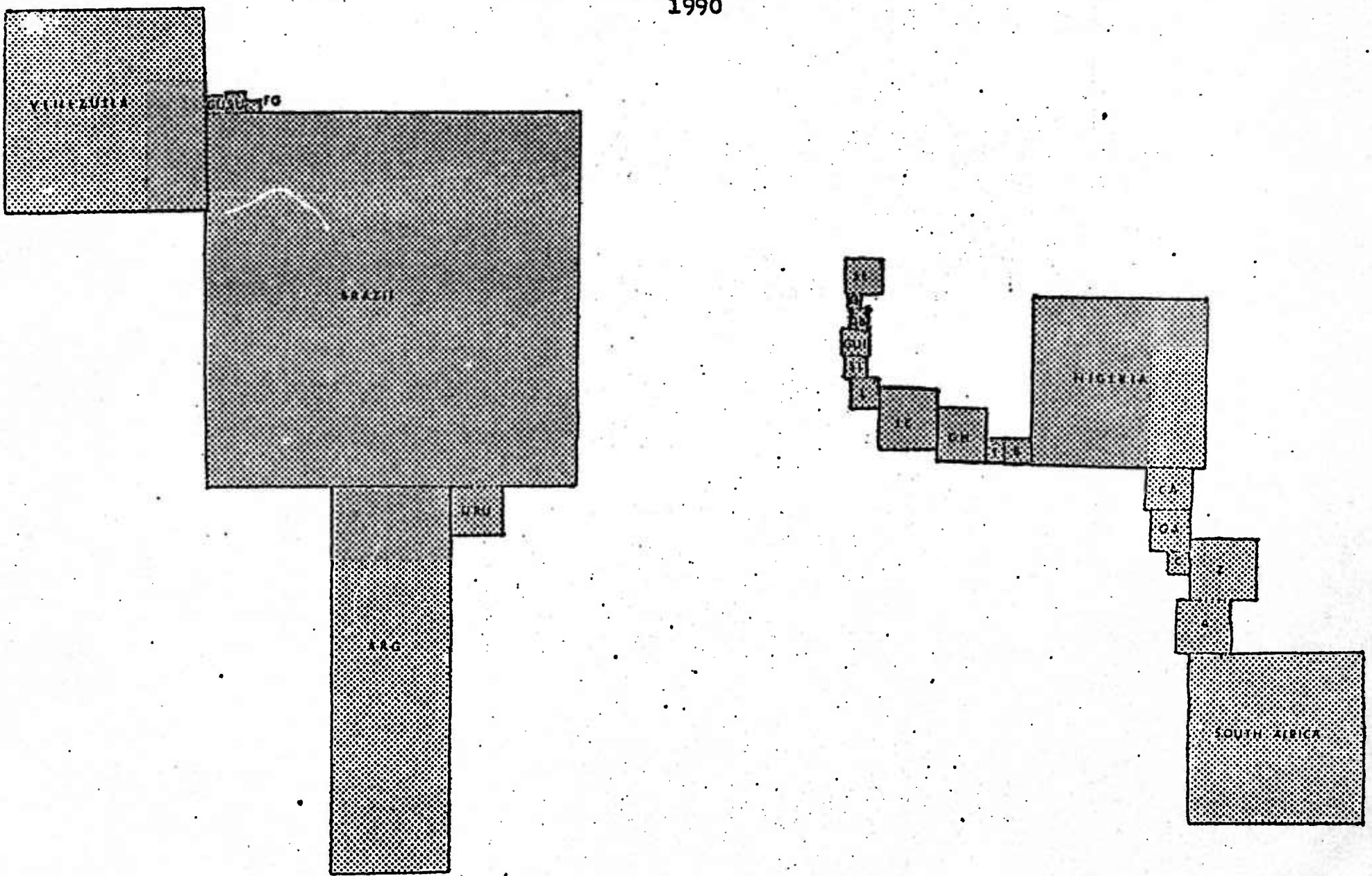
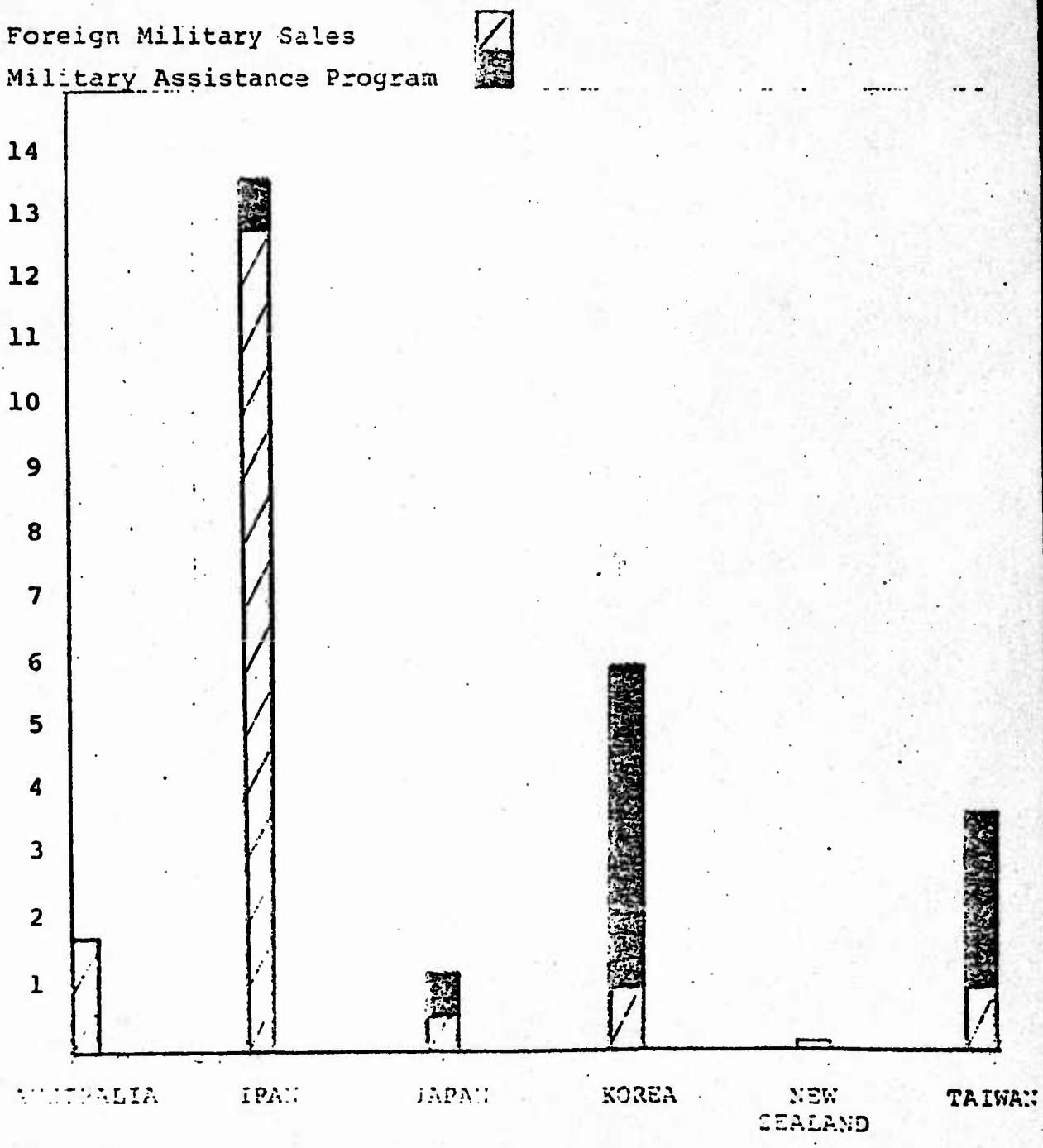


TABLE 3

U.S. SECURITY ASSISTANCE TO ASIAN COUNTRIES

CUMULATIVE FY1950 - FY1976

$(BILLIONS)



Geo-Strategic Perspectives and Capabilities of Brazil and Argentina with Regard to the South Atlantic Region Over the Next Fifteen Years

by

Ronald M. Schneider

The basic theme of my just published book Brazil: Foreign Policy of a Future World Power[1] is that

> "Brazil is nearing the ill-defined but generally recognized point at which it can claim to be a ranking power -- the first South Hemisphere star in the world galaxy and the first new major power to emerge on the international scene since the rise of China after World War II. The surge of energy propelling Brazil upward and outward results largely from economic drives, and the country's concrete objectives are chiefly economic -- although Brazilians have a very real aspiration to national greatness, with expectation of success at least by the year 2000."

In military and geostrategic terms Brazil is already well on the way to becoming an important international actor. According to Ray S. Cline, former Director of the State Department's Bureau of Intelligence Research, by 1975 Brazil was already sixth in the world in terms of international perceived power, ranking just behind China and ahead of Iran, the United Kingdom, Canada, and Japan.[2] Fifth in the world in area, sixth in population (at 113 million), and tenth in GNP, Brazil has been singlemindedly pursuing national

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[1] Boulder, Colorado: Westview Press, 1977.

[2] See his World Power Assessment: A Calculus of Strategic Drift (Boulder, Colorado: Westview Press, 1975), p. 130. Brazilian Major General Carlos de Meira Mattos, currently Vice Director of the Interamerican Defense College, argues convincingly that Cline's formula omits the "power to persuade, the force of convincing, the capacity to influence." See his "A Evolucão do Conceito de Poder e a sua Avaliação," Revista del Colegio Interamericano de Defense, Vol. IV, No. 1 (June 1976), pp. 3-6. While he diplomatically refrains from saying so, addition of this factor would further enhance Brazil's relative international power (already more than five times that of Argentina by Cline's calculations).

development strategies within a changing world economic order. "Responsible pragmatism" has given way to "no automatic alignments" and "other options" as catch phrases of Brazilian diplomacy, while Brazil engages in a game of forced-draft "catch up" industrialization which bids fair to transform the country from one generation to the next nearly as completely as Germany was transformed during the Bismarckian era.

It is clear that Brazil may well be the most important actor in the South Atlantic region in the years ahead. For most Brazilian policymakers consolidation of supremacy in South America is merely a means toward the objective of inclusion in the councils of the major powers. As I have put it elsewhere[3]

> "In a world that already contains a near-saturation number of major powers, Brazil's challenge is to identify and assume the role of the leading intermediate country. In terms of geo-political realities, this role can only be that of the chief industrial nation south of the equator."

Over four years ago Lt. Brigadier Nélson Freire Lavanère-Wanderley, a former Chief of the Armed Forces General Staff, stressed Brazil's increasing awareness of being a Southern Hemisphere power.[4] Unthreatened by large and hostile neighbors (in sharp contrast to emerging powers north of the Equator) and located in the lowest conflict area in the world, Brazil can become militarily the predominant regional power without enormous and crippling military outlays.

Brazil's security interests (in sharp distinction from those of Argentina) are Atlantic oriented in the broadest sense, not primarily focused upon the South Atlantic. Its continental expanse stretches from as far as 5° North to 34° South and reaches from 34° to 74° longitude (with its islands extending even farther east). Since a very large proportion of its over $22 billion of foreign trade must pass through the North Atlantic to ports in the United States or Europe, there is a strong tendency in Brazil to view the distinction between the two parts of the Atlantic as artificial. Thus participation in joint naval exercises north of the Equator is valued by the Brazilian military just as possible future membership in OECD is coveted by their technocratic allies.

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[3] Brazil . . ., p. 42.

[4] "Hemisfério Sul," Revista Militar Brasileira, Vol. 58, No. 4 (October-December 1972), p. 19.

The Brazilians are aware, however, that at the present time there is a void to be filled with respect to the South Atlantic in which they can hope to play a major role. Thus a senior Brazilian naval officer has recently concluded that the "vital importance" of maintaining the sea lanes between America and Africa creates a pressing need for cooperation with respect to the security of the South Atlantic.[5] He sees the USSR as already moving into the vacuum created by U.S. withdrawal from effective action in this area, a development which must be countered by Brazil and other concerned countries. As by far the easternmost nation of the Western Hemisphere, Brazil has a special concern for the "Atlantic Corredor" between the bulges of Brazil and West Africa through which much of Brazil's foreign commerce must pass. Moreover, the obsolescence and vulnerability of the Panama Canal requires Brazil to be increasingly involved with the southern routes around Cape Horn and through the Straits of Magellan.[6]

In the view of this member of the Brazilian delegation to the Interamerican Defense Board, the United States is not yet alert to the dangers posed by Soviet naval expansion in the South Atlantic. Forseeing growth of the Soviet mercahnt marine to some 25 million tons by 1980 and a continued decline of U.S. seapower, he highlights the precarious situation of the Second Fleet stemming from possible future instability in the Republic of South Africa and points out that three-fifths of Brazil's crude oil must pass around the Cape of Good Hope.[7] In the face of what he considers a "suicidal attitude" of neglect on the part of the United States, the countries of South America -- especially Brazil -- need to create a "true maritime mentality" and to develop their naval power rapidly in cooperation with friendly African countries.

Brazil's maritime concerns have expanded greatly in the past decade and are all but certain to continue this expansion in the coming years. The roots of a new awareness of security problems in the Atlantic go back to the so-called Lobster War with France in the early 1960s over that country's fishing activities off the coast of Brazil's troubled Northeast. Many Brazilian

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[5]Captain Guilherme Eugenio Barbosa Domont, "Importancia Estrategica do Atlantico Sul na Segurança e no Desenvolvimento do Continente Americano," Revista del Colegio Interamericano de Defensa, Vol. IV, No. 1 (June 1976), pp. 63-80.

[6]Ibid., pp. 71-72.

[7]Ibid., pp. 75-76. See also Vice Admiral Paulo I. R. Freitas, "Uso del Mar," Estrategia, No. 34-35 (May, June, July, August 1975), pp. 63-84.

military figures and governmental leaders were taken aback by the vigorous use of French naval power to thwart Brazilian seizure of lobster boats.[8] When foreign boats began large-scale fishing for shrimp off the mouth of the Amazon in 1963, Brazil responded by strengthening its regulatory legislation and naval patrol capabilities. In the years after 1964 anticipation of important petroleum finds on the continental shelf and increased awareness of the resource potential of the ocean bed reinforced Brazil's determination to protect its offshore interests.

In November 1966 Brazil took the first step toward asserting control over an enlarged territorial sea by establishing a 6-mile limit plus a "continguous zone" of the same width. In April 1969 the limit was extended to twelve miles, and early in 1970 a 200-mile limit was proclaimed for Brazil's maritime sovereignty. Active patrolling of the shrimping area followed. Meanwhile the Brazilian navy contracted for purchase and construction of modern fleet units (chiefly missile frigates, submarines, and oceangoing minesweepers) as well as a variety of patrol vessels. Ambitious and sustained efforts to build a world-class merchant marine were undertaken in the late 1960s, with expansion of Brazilian shipyards continuing through the 1970s.[9]

Since it is highly likely that Brazil will become increasingly concerned with providing adequate protection to its merchant marine as it grows and extends its activities -- the more so because many of its largest ships are part of the fleets of the government petroleum and mining companies -- a look at developments in this field seems appropriate. During the 1975-1979 period Brazil is engaged in building at least 765 new merchant ships with a total displacement of 6 million tons in addition to completing 1.3 million

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[8]See Carlos Calero Rodrigues, "Relacöes Internacionais do Brasil: Interesses Maritimos," Seguranca e Desenvolvimento, No. 152 (1973), pp. 91-102; Marcello Rafaelli, "Mar Territorial e Problemas Correlatos," Revista Brasileira de Estudos Politicos, No. 37 (September 1973), pp. 51-67; E.D. Brown, "Latin America and the International Law of the Sea," in Ronald G. Hellman and H. Jon Rosenbaum (eds.), Latin America: The Search for a New International Role (New York: Halstead Press, 1975); and Michael Morris, "Trends in U.S.-Brazilian Maritime Relations," Inter-American Economic Affairs, No. 27 (Winter 1973), pp. 3-24.

[9]The most definitive source is Décio Mauro Rodrigues da Cunha, "A Expansão da Marinha Mercante" (mimeo.) March 20, 1974, pp. 19-35.

tons begun under a preceding plan.[10] Construction was completed on 268,000 tons in 1974, 460,000 tons in 1975, and substantially more in 1976. With 630,000 tons launched in 1975 and over 700,000 in 1976, the target of a million tons or more a year should be reached soon.

Brazil's role in the South Atlantic region is conditioned quite heavily by the tension that continues to pervade relations with its traditional rival, Argentina, whose once very pronounced leadership pretensions have been severely checked, and whose influence in the Rio de la Plata basin region has been deeply eroded by Brazil in the past decade. In this regard the sharp contrast between Brazil's political stability and sustained economic growth on the one hand and Argentina's virtually chronic state of political crisis and economic woes has been effectively exploited in wooing Bolivia, Paraguay, and Uruguay. At the same time the Brasilia government has sought to keep bilateral relations with Argentina on an even keel through increased trade, consultation on problems of countering subversive movements, and discussions with respect to common interests in South Atlantic security. This has been increased since the replacement in March 1976 of Maria Estela ("Isabelita") Martinez de Perón by a military regime. Yet it would be foolhardy to predict that reasonably good relations will continue between the two countries through the rest of this decade, much less the 1980s. The obstacles lie increasingly on the side of Argentine distrust of Brazil's international ambitions and resentment of the perceived reversal of roles since the 1950s.

The Argentine perspective of the Brazilian menace, apparent since the early 1970s in such publications as Primera Plana and Confirmado as well as in the daily press, is articulated by military and foreign policy experts in the bimonthly journal Estrategia. Published by the Argentine Institute of Strategic Studies and International Relations under the direction of Major-General (ret.) Juan E. Gugliamelli, this review gives very heavy stress to analyses of Brazilian geopolitical writings and studies of current Argentine-Brazilian conflicts of interest in the La Plata basin region.

Late in 1972, following the Fifth La Plata Basin Conference of Foreign Ministers, General Gugliamelli strove to focus Argentine attention on Brazilian efforts to "incorporate" the northern

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[10] This program will cost at least $4 billion and should bring Brazil's merchant marine to near 10 million tons by 1980. By the end of 1976 it already stood at over 5 million tons including a number of 131,000 ton ore carriers with ships of up to 277,000 tons displacement under construction in Brazilian yards. For further details see Schneider, Brazil . . ., pp. 120-121 and 125.

interior of the country into its economic sphere (along with Uruguay, Paraguay, and Bolivia).[11] His emphasis was upon the proposed sheltered deepwater port at Rio Grande, which by 1980 was to be ready to handle ships of up to 200,000 tons displacement. The depth of his distrust of Brazil comes through in his final paragraph, in which he forsees a "dangerous" conflict of interests, since in Brazil "certain chauvenistic circles are still dreaming of hackneyed types of imperialism, or new and more sophisticated forms of colonialism alien to the spirit of the nations belonging to the La Plata basin, and at odds with the current international and Latin American historical process." He and his associates have not noticeably mellowed in their view of the Brazilian threat during recent years; indeed, their tone of alarm has become more strident.

General Gugliamelli's most sharply focused article is that on "Argentina-Brazil: Confrontation or Alliance for Liberation," in which he states that Brazil's goals include consolidation of hegemony over Paraguay and Bolivia, establishment of economic and security ties with Chile, and neutralization of Argentina's links with Peru.[12] He sees the most "grave and urgent" problems between these two countries as the issue over the massive Brazilian-sponsored hydroelectric project at Itaipu (only ten miles upstream from Argentina) and "security" including eventual possible cooperation in the nuclear field. Next in immediacy comes Brazil's development of a deepwater harbor at Rio Grande and the need for revitalization of the Brazil-Argentine Bilateral Coordinating Commission, followed by the question of Antarctica and Brazilian aspirations to "dominate" the South Atlantic. The Brazilian attitude as he sees it is to reject any allegations of hegemonic or imperialist designs, explaining its actions in high-sounding terms of regional interdependence. Discussion of fundamental problems is put off, while work on Itaipu goes forward in disregard of Argentina's downstream rights.

As formulated by Gugliamelli, Argentina's policy options include: 1) acceptance of the situation, negotiating a "junior partner" role with Brazil; 2) confrontation tempered by the need to gain time to close the gap in the relative military strength of the two countries; and 3) negotiation on the basis of compatible national interests and common benefit, possible only if Brazil abandons its "imperial-hegemonic" goals.[13] Should bilateral

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[11] "The Argentine Response to Brazil's 'Misiones' Offensive," Estrategia, No. 19-20 (November-December 1972, January-February 1973), pp. 7-15.

[12] Estrategia, No. 36 (September-October 1975), pp. 1-29.

[13] Ibid., pp. 21-22.

cooperation in the quest for development be possible, it could lead to understandings in such security areas as nuclear development and South Atlantic defense. Thus, he argues, in theory the path of cooperation as equals would be the most desirable, but he forsees Brazil continuing pursuit of its geopolitical objectives behind a facade of expressions of good intentions. Hence Argentina must prepare for the possibility of confrontation "including armed conflict."[14] He laments that with respect to Argentine-Brazilian relations "Our weakness leads us inexorably to subordination or to conflict."[15]

A half year later, writing in the immediate aftermath of Secretary of State Kissinger's visit to Brasilia, Gugliamelli views with suspicion Brazil's cultivation of the new Angolan regime as well as resenting recognition of the "special relationship" between Brazil and the United States.[16] This leads him to a detailed reexamination of the basic writings of General (ret.) Golbery do Couto e Silva, currently Minister-Chief of the Civil Cabinet in the government of General Ernesto Geisel.[17] In the Brazilian geopolitician's essays, most of which date from the 1950s or early 1960s, Gugliamelli discerns a quest for "monopolistic and exclusive responsibilities" for Brazil in the South Atlantic. The Argentine General's criticisms of Golbery's doctrine clearly demonstrate the sharp difference between Brazil's strategic concern with that part of the South Atlantic that is close to the Northern Hemisphere's Atlantic Community and Argentina's focus on that below the 35th parallel. (Buenos Aires, it should be remembered, is approximately opposite Capetown, with most of Argentina situated farther south than the tip of Africa.)

In mid-1976 Gugliamelli was arguing that Argentina urgently requires development of "integrated national power" in order to maintain a bargaining capability on priority "sea" questions, which he defines as the Beagle Channel dispute with Chile, the Malvinas Islands controversy (with the United Kingdom)

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[14] Ibid., p. 26.

[15] Ibid., p. 29.

[16] "Brazilian 'Manifest Destiny' in South America," Estrategia, No. 39 (March-April 1976), pp. 5-22.

[17] On Golbery's role in Brazilian policymaking see Schneider, Brazil. . ., pp. 65-66.

exploration of the mineral wealth of the continental shelf, and Antarctica.[18]

Gugliamelli is far from alone in his deeply suspicious view of Brazilian foreign policy designs. Carlos P. Mastrorilli, in viewing General Meira Mattos' recent book as an "updating of the Golbery Doctrine," expands on the theme that Brazil has posed the Angolan question in such a light as to be in a position to "make the South Atlantic a Brazilian sea with the explicit backing of the State Department."[19] He perceives Meira Mattos as providing an intellectual rationale for "Brazil's expansionist and hegemonic maneuvers" and predicts that Brazil's consequent efforts to maintain order within its South American neighbors will lead to "operations that will increasingly assume a belligerent nature." He then expounds a rather curious thesis that "dynamic confrontation" between Argentina and Brazil has in the past provided the "productive historical tension" from which a Latin American "pluriverse" could emerge.

Several years earlier in a detailed examination of Brazilian geopolitical writings Mastrorilli recognized that the Amazon basin provides a natural bond between Brazil and the Andean countries and that Brazil's over 10,000 miles of land borders with ten South American countries give it a considerable advantage over Argentina in leadership within the continent.[20] Lamenting that Argentina's economic stagnation and "extremely serious" diplomatic mistakes have let Brazil make headway with its project to detach Bolivia and Paraquay from the La Plata system, he concludes that "Brazil's expansion and its access to

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[18]"Argentina insular o peninsular?" Estrategia, No. 41-42 (May - June, July - August 1976), pp. 5-25. Other relevant articles of this author include "La Plata Basin or Southern Cone," No. 28 (May - June 1974), pp. 7-17; "Argentina, Brazil, and the Atom Bomb," No. 30 (September - October 1974); "Itaipu-Corpus," No. 33 (March - April 1975), pp. 5-16; "Y si Brasil fabrica la bomba atomica?" No, 34-35 (May - June, July-August 1975), pp. 5-22; and "Argentina, National Policy and Frontier Policy; National Crisis and the Frontier Problem," No. 37-38 (November - December 1975 and January - February 1976), pp. 5-21.

[19]"An Updating of the Golbery Doctrine: The Geopolitics and Destiny of Brazil According to General Carlos Meira Mattos," Estrategia, No. 39 (March - April 1976), pp. 37-47.

[20]"History and Doctrine of Brazilian Geopolitics," Estrategia, No. 19-20 (November - December 1972 and January - February 1973), pp. 37-69.

a really dominant position in the subcontinent cannot be neutralized by anything but a constructive association of states that assume a political and historical philosophy which is drastically different from that practiced by Brazil since 1954." This was spelled out by his colleague Julio Sanguinetti in terms of "an Argentina integrated into the process of Hispanic American liberation through the creation of a Pacific circle of countries with self-determination" which would contain the expansion of Brazilian influence.[21] With the death of Perón and the subsequent ouster of his widow's government, the consolidation of the pro-Brazilian Pinochet regime in Chile, and the replacement during 1975-1976 of a Third World oriented military government in Peru by one of pragmatic technocrats -- along with the near collapse of the Andean Pact -- this hope for a coalition of Spanish-speaking countries against Brazil appears to have no real prospect for fulfillment.

Returning to the familiar Argentine theme of counterbalancing Brazil, Nicolás Boscovich has called attention to Brazilian territorial expansion and national integration as paralleling that which enabled the United States to achieve great power status at the end of the past century.[22] He views Brazil's massive new hydroelectric projects as not only tying Paraguay to Brazil, but also as a means for raising the level of tributary rivers so that inland waterways would be navigable to the new deep sea port at Rio Grande, thus making it the outlet for exports from Bolivia, Paraguay, and even the upper regions of the Argentine interior.[23] Assuming a very aggressive stance on Itaipu, he details Brazilian plans for a system of interconnecting river basins which would negate Argentina's prior advantages as controlling the mouth of the La Plata. The Argentine economist laments that nothing has been done to counter Brazil's transportation projects which "deform the natural and historic currents" of trade and "could become serious threats to our national integration."[24]

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[21]"Geopolitics of the River Plate Basin," Estrategia, No. 19-20, (November-December 1972 and January - February 1973), pp. 71-78.

[22]"Análisis comparativo: Argentina y Brasil en el espacio geoeconómico del 'Cono Sur'," Estrategia, No. 31-32 (November - December 1974 and January - February 1975), pp. 34-60.

[23]Ibid., p. 40.

[24]Ibid., p. 60.

Although there may be room for some doubt as to how widely shared among Argentina's foreign policy elites are the views expressed in the pages above, they do relate to basic attitudes deeply embedded in Argentine public opinion. Italo A. Luder, head of the Argentine Senate's Foreign Relations Committee in 1973 (the first year of a functioning congress after a nearly seven-year recess under military governments), repeatedly cited these authors in his speeches and committee reports.[25] Moreover, they are quoted frequently in the scholarly articles of Greño Velasco for the Madrid-based Revista de Politica Internacional.

The main forum for the periodic consideration of these problem areas underscored by Argentine analysts is the ministerial-level meetings of the La Plata Basin countries. In brief, very little has been undertaken through this five-nation mechanism compared to the bilateral projects initiated by Brazil with Bolivia, Paraguay, and Uruguay during this period. This was apparent at the Eighth Conference of Foreign Ministers in Brasilia in early December 1976, as the two major members continued their impass. Admiral Guzzetti, the new Argentine Foreign Minister, suggested in meetings with President Geisel and Foreign Minister Silveira that the two countries enter into bilateral talks of the use of the rivers, bringing to bear once more the Argentine thesis of "optimal use" of the basin's natural resources. Geisel pointedly stressed the rights of a country to carry out projects by itself or with a single partner, referring to specific provisions of the 1969 treaty, in contrast to the Argentine Foreign Minister's claim that in keeping with the spirit of that document all members should be involved in prior consultation.[26] Brazilian press coverage generally took the line that the meeting accomplished very little, which was fine from the point of view of Brazilian diplomacy, since by the next annual meeting Itaipu would be essentially a fait accompli.[27] For all of the energetic

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[25] See his La Argentina y sus Claves Geopoliticas (Buenos Aires: Editorial Universitaria, 1974).

[26] See Jornal do Brasil, December 7, 8, 9, & 10, 1976.

[27] For background see Joaquim Ignacio MacDowell, "A Politica do Brasil no Contexto do Tratado da Bacia do Prate," Revista Brasileira de Estudos Politicos, No. 37 (September 1973), pp. 9-21. Brazil's position at the 6th conference of La Plata Basin Foreign Ministers can be found in Resenha de politica exterior do Brasil, No. 1 (June 1974), pp. 35-37, with that for the 7th conference in Resenha . . ., No. V (April, May, June 1975), pp. 85-88.

efforts which have gained Argentina endorsement of its theses on downstream rights in international bodies, Brazil has yet to make any meaningful concession to the anguished cries of its La Plata Basin "partner" that the massive Brazilian-Paraguayan dam at Itaipu would destroy the possibility for Argentina to develop a large-scale hydroelectric project at Corpus.

Argentine sensibilities and interests are wounded almost as deeply by the Brazilian development of a "superport" at Rio Grande (nearly the southernmost place in the country). Argentinians are very disturbed by the fact that Buenos Aires, in spite of continuous costly dredging of the La Plata estuary channels, can only accommodate ships of less than 30,000 tons displacement with drafts of under 30 feet.[28] Although the Argentine government finally included the initial stages of a deepwater port in its 1974-1977 development plan, major ships must currently use Montevideo harbor or Argentine ports farther out toward the Atlantic.[29] Meanwhile work continues apace on the Brazilian sheltered deepwater port a few hundred miles away.

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[28]See José Enrique Greño Velasco, "Geopolitica de puertos en la cuenca del Plata," Revista de Politica Internacional, No. 135, (September - October 1974), pp. 175-199. Other relevant articles by Greño Velasco in this journal include: "La V Conferencia de Cancilleres de la Cuenca del Plata," No. 127 (May - June 1973), pp. 171-181; "Argentina, Uruguay: punto final a una larga controversia," No. 132 (March - April 1974), pp. 43-72; "La controversia argentino-brasileño en Alto Paraná," No. 133 (May - June 1974), pp. 91-109; "Cuenca del Plata: VI Conferencia de Cancilleres," No. 136 (November - December 1974), pp. 161-175; "La nueva politica de fronteras en Iberoamerica," No. 138 (March-April 1975), pp. 147-164; "Los acuerdos hidroelectricos en el Rio Uruguay," No. 140 (July - August 1975), pp. 145-162; "La apertura Argentina hacia el Pacifico," No. 141 (September- October 1975), pp. 211-233; "VII Reunión de Cancilleres de la Cuenca del Plata," No. 142 (November - December 1975), pp. 187-204; "Uruguay; del Tratado del Rio de la Plata a los Acueros de Rivera," No. 143 (January-February 1976), pp. 205-222; and "Las relaciones horizontales en la cuenca del Plata," No. 147 (September - October 1976), pp. 147-167. Former Vice-President Adm. Isaac F. Rojas, Intereses argentinos en la cuenca del Plata (Buenos Aires: Editorial Libera, 1974) is illustrative of traditional Argentine views of a right to primacy in this area.

[29]The port issue is discussed in Capt. (ret.) Rafaél A. de Arcos, "El sistema portuario de ultramar en el Plata," Estrategia, No. 1 (May - June 1969), pp. 68-70; Vice Admiral (ret.) Adolfo B. Estevez, "Los puertos maritimos del Paraná y el puerto de aguas profundas," Estrategia, No. 6 (March- April 1970), pp. 65-70; Carlos Amero Sixto, El Reto del Puerto Profundo (Bahia Blanca: Editorial del Autor, 1970); and Estévez writing in Estrategia, No. 7 (May- June 1970), pp. 117-122.

Although there has been no major dispute between Brazil and Argentina over Antarctica to this point, there is some reason to believe that this issue may take on additional significance in the future. In 1958 Brazil did assert a claim to that part of the southernmost continent between the 29th and 53rd meridians, but it was not a party to the 1959 treaty setting aside territorial claims for thirty years. It did, however, subscribe to it some fifteen years later -- just after an Argentine diplomat was selected as Secretary General of the Organization of American States in what Brazil considered a violation of a gentlemen's agreement on the part of the three major Latin American nations to leave that post to citizens of smaller countries. Looking at Argentina's Antarctic problems through 1990, Professor Carlos Juan Moneta has predicted that Brazil would try to press territorial claims to much of his country's presumed domain on that continent.[30]

Some Argentinians at least view Brazil's South Atlantic inclinations with misgivings. One author commenting that only the Republic of South Africa on the other side of that ocean has shown any awareness of the maritime security problem, decries a perceived Brazilian determination for "naval superiority" in the region as undermining the cohesive effort already based on Argentine-South African cooperation.[31] Another reminds his readers that the Revista de Escola Naval in December 1973 called for "the reformulation of a naval strategy based on the strategic position of Brazil, the growing importance of the South Atlantic and accelerated growth of national power."[32] In his view Brazil

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[30]"Antártida Argentina: Los problemas de 1975-1990," Estrategia, No. 31-32 (November - December 1974 and January - February 1975), pp. 6-33, particularly 29-30.

[31]A. Bianchi y Von Kirck, "Atlántico Sur: Méritos y Apetencias," Estrategia, No. 34-34 (May -June, July -August 1975), 54-62. The appeal of an alliance with the Union of South Africa to Argentina is made clear in Emilio A. Galmarini's article on the "Geostrategic Uniqueness of South Africa," Estrategia, No. 27 (March - April 1974), pp. 41-55. A press release of the Brazilian Mission to the United Nations on September 30, 1976 categorically denies that Brazil would even consider entering into any kind of a security treaty with the White supremacist regime of South Africa.

[32]José Enrique Greño Velasco, "La Adhesión de Brasil al Tratado Antártico," Revista de Politica Internacional, No. 146 (July - August 1976), pp. 71-89, quotation from p. 75.

would expand its naval activities to all parts of the South Atlantic, seeking nuclear submarines to accompany an updating of air-sea doctrine and operations toward the goal of developing a capability to dominate "focal" areas of the sea for as long as possible in any conventional conflict. To this end he foresees a Brazilian willingness to enter into alliances with "whomever it might be in Brazil's interests" to do so. He implies that this would mean the countries of Black Africa, rather than Argentina's preferred partner.

One area in which there has been a fairly substantial coincidence of positions on the part of Brazil and Argentina is that of territorial sea limits and seabed resources. At present Brazil claims a 200-mile territorial sea and Argentina one extending to the line at which the ocean is 200 meters deep (which enables it to extend out around the Malvinas Islands). The former would almost certainly accept a 12-mile limit with an additional 188 miles of an "exclusive economic zone" if general international agreement could be reached on this at the 1977 U.N. Conference on the Law of the Sea (scheduled to begin in New York on May 23). While innocent passage would probably not be a sticking point for Brazil, scientific research might be, as that country would strongly want prior authorization required. Brazil would seem to be favorable to the concept of the exclusive economic zone extending out beyond 200 miles where the continental shelf is particularly broad, so its position would be generally compatible with that of Argentina on this point. With regard to the question of mineral resources on the seabed, both as relatively developed coastal countries are on the moderate side with respect to the positions assumed by various members of the Group of 77 (since this has become very much of a North-South issue). Brazil's stand in the continuing efforts to reach an international consensus will be shaped quite heavily by a desire to maintain credibility with the African countries.

A major challenge of Brazilian foreign policy is to balance Brazil's interests as a near industrial power with its still very real common concerns with the developing countries of the so-called Third World. Rejecting an invitation from then-Prime Minister Miki during his state visit to Japan last September to assume the role of mediator between the developed and developing countries, President Ceisel reaffirmed Brazil's identification with the latter nations. While its economic interests will eventually come to diverge -- perhaps quite sharply -- from those of the LDCs, Brazil will continue for some years to come on the path of seeking major modifications in the international economic system beneficial to developing countries.[33]

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[33]See Schneider, Brazil . . . ., p. 195.

As it has been doing throughout 1975 and 1976, in the continuing North-South dialogue Brazil will avoid isolation through support of third-world demands in a generally constructive and non-polemical manner. African support remains important to Brazil in international economic and financial agencies and conferences, and friendly African nations are still valued as potential intermediaries with their Arab allies.[34]

Prior to the world energy crisis Brazilian attitudes with respect to Africa were divided, with the Finance Ministry and some elements of the military establishment advocating closer cooperation with Portugal's African colonies and the Republic of South Africa.[35] By 1972 then-Foreign Minister Gibson Barbosa was striving to improve relations with Black Africa in order to garner greater support and credibility for Brazil in international forums. By the end of 1973 this policy appeared validated by the oil crisis, and subsequently by the achievement of independence by Portugal's African colonies.

Military reservations concerning Brazil's African policy were strongest in late 1975 over the Angolan question, but here too events have seemed to bear out the wisdom of Brazilian diplomacy.[36] Having delayed substantially in recognizing the Marxist-Leninist regime in Mozambique -- which did not bear directly on South Atlantic security -- Brazil decided to move quickly with respect to the Soviet-backed and Cuban-aided Popular Movement for the Liberation of Angola (MPLA). From a diplomatic viewpoint this controversial decision provided an opportunity to show some initiative in "arriving" ahead of the Afro-Asian countries in this one case (instead of following their lead). It also put Brazil in a position to forge close ties to the group most likely to govern Angola during its formative years and thus to be its major link to the West. Nevertheless many elements of the Brazilian Armed Forces were disturbed about the prospect of a Soviet presence on the South Atlantic almost directly opposite Brazil's eastward bulge and only 4500 kilometers distant. The Admiral commanding the Naval War College declares that "Our most legitimate interests would be affected if the control of the South Atlantic should come to belong to a superpower

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[34] Ibid., p. 160. See also Wayne Selcher, "Brazil's Relations with Portuguese Africa in the Context of the Elusive 'Luso-Brazilian Community'," Journal of Inter-American Studies and World Affairs, Vol. 18, No. 1 (February 1976), pp. 25-58.

[35] Schneider, Brazil . . ., p. 109.

[36] Ibid., pp. 74-76.

traditionally foreign to the ocean area contiguous to our territory."[37] Many officers subscribed to the strategic view of General Meira Mattos that:

> "the moment that a military power hostile to Brazil occupies the Atlantic coast of Africa, at any point -- from Morocco to South Africa -- we will begin to feel a climate of uneasiness and of warlike pressure in our country without a precedent in our history. This is because, today, even a base of intermediate-range rockets installed on the West African salient could easily threaten a long strip of our Northeast bulge."[38]

This concern was not, however, sufficient to move the Brazilian government toward participation in a South Atlantic security pact. In April 1976 two U.S. Admirals were in Buenos Aires at the time of a visit by Brazilian Navy Minister Admiral Geraldo Azevedo Henning, a coincidence which gave rise to talk that the United States was advocating "an ambitious plan for developing an integrated naval striking force with a unified startegic command, air power and its own bases."[39] Shortly thereafter stories surfaced concerning possible Argentine acquisition of two reconditioned carriers from Canada and the United States. The end of September saw Silveira's categorical statement that "there is not the slightese possibility of a system of collective defense in the South Atlantic" if South Africa were to be involved.[40] Thus it appeared that whatever exploratory talks had taken place at the 8th Inter-American Naval Conference in Rio de Janeiro during the second half of August had not moved Brazil. Indeed Armies and Weapons in its August-September issue indicated that Brazil was more likely to seek inclusion in NATO.

Argentina on the other hand welcomed a visit by the South African Navy commander, but Foreign Minister Admiral

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[37] Veja, December 31, 1975, p. 23.

[38] Carlos de Meira Mattos, Brasil: Geopolitica e Destino (Rio de Janeiro: José Olympio, 1975), p. 75.

[39] Latin America, April 30, 1976, p. 132.

[40] Ibid., October 1, 1976, p. 297.

Guzzetti was quoted in the Brazilian press on December 9 as saying after a meeting with his Brazilian counterpart that the idea of a South Atlantic security agreement "exists only in the minds of those who do not really understand the problems of the continent and the region."[41] On the same date Admiral Henning was quoted as denying the existence of any Soviet threat in the South Atlantic. His rhetoric went so far as to accuse the advocates of Brazilian action in this regard as "inciting the country to an unreal and absurd polemic, truly quixotic, an unpatriotic and insidious attitude," a view strongly rejected by the influential Jornal do Brasil.[42] On December 20 this newspaper quoted the U.S. and British Naval Attaches as viewing any South Atlantic pact as unnecessary in light of the Inter-American treaty of Reciprocal Assistance (the so-called Rio Pact).[43] These officers underscored that the invitation to Brazil to participate in Operation Caribex off Puerto Rico as the only Latin American country (along with the United States, the United Kingdom, and NATO allies in Canada and the Netherlands) was of major significance. Keeping the issue alive was a report that the Washington-based review Defense and Foreign Policy had run an article saying that the United States was indeed seeking to build up a security agreement that would "neutralize the Soviet influence in African countries."[44] Brazil was singled out by its author as the major obstacle -- owing to its unwillingness to cooperate with the Republic of South Africa. As I have concluded elsewhere, this position is not likely to change suddenly or significantly:

> "Brazil's imperative as an 'intermediate' country is to build credibility and strengthen ties with the developing countries while its basis for international influence matures during the rest of this decade. Between now and 1985 Brazil will certainly attempt to increase its trade with such African countries as Nigeria, Senegal, and Gabon, while it strives to build cultural, if not political links to the former Portuguese colonies -- particularly Angola. Brazilian policymakers will continue to assess the costs and benefits involved

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[41] Folha de S. Paulo, December 9, 1976, p. 8.

[42] December 9, 1976, p. 10.

[43] The newspaper seems to have sought the interview, and the U.S. representative to have been quite outspoken on the Soviet danger.

[44] Jornal do Brasil, January 6, 1977.

> in siding one way or another in third-world clashes with industrialized powers, and when the opportunity is there Brazil may well try its hand as conciliator and voice of moderation."[45]

To the present the South Atlantic has been a low conflict region. The last war in South America involving Brazil and Argentina was the Paraguayan War just after our Civil War, and in this struggle they were allied. In spite of their often intense rivalry, these two countries have been at peace with each other since the late 1820s when their dispute over the northern bank of the La Plata estuary was resolved with the creation of an independent Uruguay. The major situation with potential for armed conflict in South America involves Chile, Bolivia, and Peru -- who fought two "Wars of the Pacific" in the 19th century -- while the next most explosive is the Peru-Ecuador territorial friction which resulted in a war in the early 1940s. The Bolivian-Paraguayan conflict which exploded into the Chaco War of the 1930s does not appear to have any significant potential for flaring up again. Indeed, it is likely that Brazil would prevent this from happening. This leaves only the simmering dispute between Venezuela and Guyana inherited from the time the latter was a British colony.

Brazil appears to see in Venezuela a potential adversary who is temporarily benefitting from the energy crisis, but could be neutralized in the medium run. Substantial success has been achieved in keeping the Andean Pact from becoming the instrument for containment of Brazilian influence that Venezuela may have had in mind. Brazil, according to an unnamed government spokesman, "wishes to prevent at all costs Venezuela from becoming a danger to Brazil as a growing source of political problems, in sum, an Argentina of the North."[46] Brazil has responded in a relatively positive vein to Venezuela's proposal for a "Latin American Economic System" (SELA), and has formed a company to enter the bidding on construction of a major railroad in Venezuela. Efforts will probably be continued to neutralize Venezuelan suspicions that Brazil harbors pretensions toward continental hegemony, and Brazil may very well seek to form an Amazon Basin Cooperation Pact along the general lines of the La Plata Basin set up. (Brazil and Bolivia would be joined in this by Peru, Ecuador, Colombia, and Venezuela.) Much will continue to depend upon developments centering on Guyana -- a situation which could lead Brazil and Venezuela toward conflict, or

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[45] Schneider, Brazil . . ., p. 196.

[46] O Estado de S. Paulo, January 30, 1977, p. 22.

possibly toward substantial agreement should both governments continue to fear that their small neighbor is moving too close to Castro's orbit.[47]

Three and a half years ago I assessed Brazil's military capabilities in the following terms:

> Set apart from other Latin American Armed Forces by their relatively large-scale participation in World War II, the Brazilian military is in transition toward becoming a modern institution capable of matching the combined military power of the nation's South American neighbors."[48]

This trend has continued since that time, with modernization of equipment in each of the three services, progress toward self-suffiency in basic military equipment, and moderate increases in the number of men under arms. At present the three services total in excess of 260,000 men backed up by the full-time militarized state "Public Forces" officered by Army professionals and numbering in excess of 185,000 men.

The ground forces of Brazil -- with an authorized strength of 183,000 and an actual strength of over 170,000 -- are organized into four field armies (further divided geographically into 12 military regions plus two regional commands which are in transition to status as armies). The strongest of these major commands is the Third Army centered on the two southernmost states along the Argentinian and Uruguayan borders; the smallest is the Fourth Army stretched thinly throughout the North and Northeast. There are eight divisions, four of which are organized to be the nuclei of corps in case of mobilization, while half of the independent brigades are apparently designed as the core for expansion into new divisions through call-up of the reserves. There are also three standard infantry divisions plus three independent infantry brigades, one cavalry division plus three mechanized and one armored cavalry brigade, an airborne brigade and a paratrooper brigade, and some 40 other units of battalion size or larger (including five light "jungle"

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[47] See Schneider, Brazil. . ., pp. 159 & 196.

[48] Norman A. Bailey and Ronald M. Schneider, "Brazil's Foreign Policy: A Case Study in Upward Mobility," Inter-American Economic Affairs, Vol. 27, No. 4 (Spring 1974), pp. 22-23.

infantry battalions, engineering, and artillery units).[49]

World War II and Korean War vintage weapons have been largely replaced by small arms made in Brazil under Belgian license, domestically produced trucks (from an automotive industry that turns out roughly a million vehicles a year), and tanks and self-propelled artillery purchased in the world market. The Cascavel armored reconaissance vehicle (CRR EE-9) carrying a three-man crew and armed with a 90 mm cannon of French design is capable of road speeds up to 95 km/hr and is superior at cross-country travel and fording small streams. Brazil has already sold over 400 of this versatile armored car to Libya and is currently negotiating other major sales in the Middle East. The Urutu amphibious armored personnel carrier (CTRA EE-11), also designed by Engesa of Sao Paulo, is considered by experts as fully the equal of the best in the world, excelling in its mobility and speed in the water and ability to operate even with its roof submerged.[50] Powered like the smaller Cascavel with Brazilian-developed Mercedes Benz engines, it carries 15 men at speeds of up to 95 km/hr on land while armed with light cannon or heavy machine guns. Since the 200 M-3A1 Stuart and 150 M-4 Sherman medium tanks carried on the inventories are past their prime, the Brazilian Army is reported planning to build some 400 Marder AM with a Vickers 105-51 mm gun to go along with the Marder chassis apparently chosen to mount the Roland 2 low-level anti-aircraft missile system they have adopted. Other serviceable equipment includes 250 M-41 light tanks and well over 1000 field artillery pieces.

The Brazilian Air Force, currently at a strength of 45,000 including 5,000 officers, contracted back as far as 1969 for the construction of 114 Aermacchi MB-326 fighter-trainers to be built in Brazil as the AT-26 Xavante. This initial investment of over US. $50 million to bring the Brazilian Air Force into the jet age was followed by a $30 million purchase of 16 Mirage III fighter bombers from France. Subsequently the FAB agreed to buy some 48 Northrop F-5E Tiger II's from the United States for a price of about $76.8 million. Brazil would like to equip at

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[49]Much of this information comes from The International Institute for Strategic Studies, The Military Balance 1976-1977 (London: IISS,-1976). Other technical data has been pulled together by Mr. Daniel David of the CUNY Graduate School.

[50]See Armies and Weapons, Year V, Vol. iv (December 1976-January 1977), pp. 36-37 & 46-47. On sales see Latin American Political Report, March 4, 1977, pp. 66-68.

least two more squadrons with these planes. As Embraer, the Brazilian government company, has a contract to fabricate 100 sets of F-5 tail units, it may be granted in the future a license to manufacture the entire airframe. Meanwhile Brazil has been producing three military aircraft of its own design: the Aerotec T-23 Uirapura primary trainer (of which the FAB has at least 100); the Neiva T-25 Universal three-seater (with at least 150 in the FAB inventory); and the highly regarded two-engine turboprop EMB Bandeirante.[51] Since an additional 40 Xavantes have been added beyond the original 114, the number of jet fighters and interceptors in service for Brazil is already quite respectable.

Brazil has taken measures to implement an air defense system built around the SISDACTA computerized air traffic control and air defense radar system purchased from the French Thomson-CSF company. DACTA I covers the vital triangle of Brasilia-Rio de Janeiro-São Paulo, and in 1977 DACTA II will extend the system to cover all of southern Brazil. By the mid-1980s Brazil hopes to develop a comprehensive Air Defense System including a strong interceptor force and network of SAM batteries. The Israeli Kfir is under consideration, and Brazil will most likely desire F-16s or an equivalent plane within a relatively few years.

Since under the Brazilian allocation of missions all fixed-wing aircraft belong to the Air Force, the FAB has an extensive arm for patrolling off Brazil's coasts. P-2E Neptunes and S-2A Trackers are being replaced, or more precisely supplemented, by EMB-111 Bandeirantes for anti-submarine warfare, coastal fishing patrols, sonar search, and shipping surveillance. However, they want P-3 Orions for a long-range squadron and will certainly go into domestic production of at least one type of helicopter.

Until the last few years the Brazilian Navy consisted of a small escort carrier, two aging U.S. surplus cruisers, and eleven destroyers (none of recent vintage) plus corresponding support vessels. Modernization has been the hallmark of the 1970s as important new units were ordered from Great Britain and the German Federal Republic. Six high-speed Vosper MK10 missile frigates equal to the world's best have been purchased from

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[51] See Roberto Pereira de Andrade, "Brazil Stressess Air Capability," Air International, Vol. 11, No. 3 (September 1976), pp. 111-117 and 146. See also Aviation International, No. 610 (May-June 1973), pp. 140-141.

England, with two through sea trials and two others already launched from Brazilian yards. As many as ten Schutz class ocean-going minesweepers were ordered from West Germany, and three Oberon class modern submarines were bought from the United Kingdom. (There are persistant reports that other submarines of this model will subsequently be built in Brazilian yards.) The manpower of the Navy has risen moderately to just under 50,000 -- including the 13,000 marines. Since Brazil already has seven U.S. Guppy II/III class submarines, as well as 24 destroyers and corvettes, it has the nucleus of a significant fleet.[52]

Proposed new naval construction includes a helicopter carrier, at least three additional missile frigates, coastal patrol craft, and a "replenishment tanker" for refueling on the high seas. In the longer run Brazil may well seek nuclear-powered submarines. Given the very long patrol distances involved, this would seem to have substantial justification beyond that of just a status symbol. By the 1980s Brazil is very likely to seek V/STOL mini-carriers to aid in the mission of sea control and perhaps to enhance its power projection.

Argentina's Armed Forces total some 133,000 men -- just half of Brazil's military manpower. The Army has an authorized strength of 83,500 men and includes an armored brigade, a mechanized brigade, two motorized infantry brigades, two mountain brigades, an airborne brigade, along with two regular infantry brigades and specialized units of up to battalion strength. Reasonably modern light tanks (120 AMX-13s) have supplemented the aged M-4 Shermans, and there are serviceable armored personnel carriers (with 250 M-113s as the backbone). United States-made 105 and 155 mm guns and howitzers comprise the bulk of Argentina's artillery park, along with 75, 90 and 105 mm recoilless rifles and two types of anti-tank missiles roughly equal to those possessed by Brazil. The Army has several anti-aircraft units and a limited number of small aircraft for spotter and liaison purposes (although in numbers significantly inferior to Brazil). It continues to have combat experience in fairly large-scale anti-guerrilla operations, but must worry to some degree about the political reliability of its conscripts and some junior officers. The national guard of under 200,000 men and the territorial guard of perhaps 50,000 make up Argentina's reserves, but they are far from combat ready.

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[52] See also Jane's Fighting Ships 1976-1977. Navy International, Vol. 82, No. 2 (February 1977), pp. 25-33 provides considerable detail on the MK10s. See also Geoffrey Wood, "Brazil's MK10 Frigates," Navy International, Vol. 79, No. 8 (August 1974), pp. 15-26.

The Argentine Air Force numbers 17,000 men and approximately 115 combat aircraft. Its bomber squadron is equipped with 9 Canberra B-62s and 2 T-64s, supplemented by two fighter bomber squadrons with a total of 45 A-4P Skyhawks. An interceptor squadron is well equipped with 14 Mirage III's, and its fighter squadrons have some 20 F-86F Sabre jets.

It is only with respect to the Navy that Argentina has been able until now to maintain near parity with Brazil. Numbering over 32,000 (including the marines and naval air arm), it has a carrier, four submarines, two cruisers, nine destroyers, and more than a score of patrol craft. In addition to fixed-wing patrol craft and helicopters along the same lines as Brazil, the Navy has some 15 A-4Q Skyhawks and a dozen Aermacchi MB-326 jets. Argentina's newest fleet acquisitions include the Hercules, a British type 42 (Sheffield class) destroyer and its twin, the Santissima Trinidad, built in Argentina and soon to be commissioned. (Delayed by a terrorist bombing in 1975). Also building in Argentina are two missile-equipped fast attack craft of German design, with two similar vessels armed with guns being built in Germany. Two relatively small submarines are also being built for Argentina in German yards.

The increasing disparity between the military strength of Brazil and Argentina is chiefly a function of the difference in population and scale of the national economy. In 1965 both countries were expending just under 2 percent of their respective GNPs on their military establishments, with the ratio being $550 million for Brazil to $315 million for Argentina. By 1974 the gap had multiplied to $1.9 billion for Brazil and only $573 million for Argentina (as the former devoted just over 2 percent of its GNP for this purpose and the latter over 1.5 percent).[53] In constant dollar terms, Brazil had increased military expenditures to roughly 225 percent of the 1965 level, while Argentina lagged well behind with an increase of only 20 percent over the span of a decade. And while Brazil's GNP more than doubled, that of Argentina grew by not quite half (the difference between the two economies increasing from less than $12 billion to over $57 billion). Arms transfers during this same period favored Brazil by a ratio of roughly five to three. This suggests that Brazil should be able to extend its military edge over Argentina, particularly as its population margin increases from the present slightly more than four to one ratio to a margin of

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[53]Data from tables in U.S. Arms Control and Disarament Agency, World Military Expenditures and Arms Transfers 1965-1974 (Washington, DC 1976), pp. 19, 21, 56 & 57.

better than five to one before 1990 and nearly six to one by the end of the century. In terms of military manpower, the rate of four per 1,000 maintained through the 1965-1974 decade would yield roughly 800,000 men under arms for Brazil in the year 2000, while ARgentina's 6 to 7 per 1,000 ratio would leave that country below 250,000 men. Put another way, to match Brazil in military manpower at the end of the century, Argentina would probably need to have nearly four times the present proportion of its population under arms. But in that case Brazil would certainly increase the size of its Armed Forces, with only a fraction of the economic and social costs involved in the Argentine effort. The disparity is obvious from the fact that at a relatively modest 2 percent of GNP, Brazil's military expenditures rose in 1974 alone by more than double the total increase in her rival's military expenditures over the 1965-1974 decade. For 1976 the annual military budget increment for Brazil without any increase in the share of GNP for this purpose could be roughly $200 million, which in itself would come to about one-third of Argentina's total military expenditures for the year.

It should be borne in mind that the Brazilian Air Force, for example, while considerably larger than that of Argentina, is spread quite thinly over Brazil's vast expanse. In recent years, however, it has been adding combat aircraft at a fairly steady and accelerating rate, upgrading key units in all parts of the country. Since Brazil manufactures a very significant proportion of its planes, this process is likely to pick up further momentum in the years ahead. Argentine defense budgets are likely to rise substantially under the present military regime both to cope with the continued critical internal security situation posed by the Monteneros and perceived naval needs underscored perhaps more by the incorporation into Brazil's fleet of modern units than the Soviet presence in the South Atlantic. This will be the case particularly if Brazil should install a major navy base at the new deep sea port of Rio Grande.

Arms transfers in the long run are likely to be governed by the basic economic considerations outline above. For the years 1973-1974 these totalled $187 million for Brazil and $87 million for Argentina. Given the far greater ability of Brazil to produce an increasing proportion of its armament needs at home, Argentina would need to invert this ratio if the weapons gap is not to continue growing in the years ahead. Also of relevance is Brazil's increasing role as a source of armaments for other Southern Cone countries. Confirmed sales in the past include at least 18 Xavante jets to Bolivia, a score of T-25s to Paraguay, ten T-25s and at least three EMB-110 Bandeirantes

to the Chilean Navy, a small number of Bandeirantes to Uruguay, and -- perhaps a harbinger of things to come -- negotiations for the sale of at least 40 T-23s to Nigeria. If Brazil is able to arrange for permission to manufacture the Aermacchi MB-339 (as it did with its forerunner), then it should increase such activities in the future. On the ground, sales of armored personnel carriers have complemented Brazil's earlier traffic in trucks for military purposes.

The nuclear question remains the most uncertain factor in the military equation involving Brazil and Argentina. In a thoughtful examination of their rivalry in this regard, Norman Gall (of the Carnegie Endowment for International Peace) observed that after the Indian nuclear explosion of May 1974 "it became a topic of common table talk among the elites of both countries to speculate about who would get the bomb first."[54] Since the Argentine nuclear project is based upon a natural uranium/heavy water technology, it is considerably less subject to effective international controls than the Brazilian enriched uranium nuclear program. Moreover, the agreement with Canada involved only Argentina's second nuclear power plant, not Atucha I, which has been in operation since 1974. A leading Brazilian nuclear physicist estimated that Argentina had accumulated sufficient plutonium for a bomb by the end of 1975, while on the Argentine side General Gugliamelli reacted to the Brazilian-German nuclear agreement in rather bellicose terms:[55]

> "Given the available facts, it is possible to affirm that Brazil has taken the firm decision to join the Nuclear Club, that is, to make an atom bomb under the guise of peaceful uses. This conclusion is reinforced in the ultimate instance by the well-known imperialistic and

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[54]See his "Atoms for Brazil, Dangers for All," Foreign Policy, No. 23 (Summer 1976), pp. 155-201. Also useful are William W. Lowrance, "Nuclear Futures for Sale: To Brazil from West Germany, 1975," International Security, Vol. 1, No. 2 (Fall 1976), pp. 147-166 and Daniel Yergin, "The Terrifying Prospect: Atomic Bombs Everywhere," Atlantic Monthly, April 1977, pp. 46-65. Consult as well Schneider, Brazil . . ., pp. 47-51, 59-61, 91-93, 115-116, and 150-157.

[55]Marcelo Damy da Souza Santos, quoted in Veja, August 13, 1975, p. 23 and "Y si Brasil fabrica la bomba atomica?," Estrategia, No. 34-35 (May-June, July-August 1975), pp. 13-14.

> hegemonic vocation of some influential leadership circles for whom the nuclear device constitutes a decisive step toward becoming a great power . . . These two factors, the decision to manufacture the nuclear explosive and the opportunity, are critical for Argentina, since our neighbor's nuclear device, without a counterpoise, will palpably and decidedly affect our security. In this respect, the most elemental rules of defense counsel that the facts not be overlooked and that adequate positions be taken. In matters of security, lack of foresight or tardy decision-making can be fatal."

It is difficult to be certain at just what point Argentina's military nuclear program stands as of April 1977. It appears that the decision to go for a bomb is essentially a political one with the heavy costs being weighed against the very significant strategic advantages. Certainly Brazil's policy-makers must bear this possibility very much in mind even in the midst of Argentine expressions of solidarity in the face of the Carter administration's attacks upon the German-Brazilian treaties. The determination of the United States Government to prevent Brazilian acquisition of uranium enrichment and plutonium reprocessing technology is a major setback to Brazil's capabilities in this field. Under these circumstances Argentina may be all the more inclined to resume or accelerate work toward development of a bomb if they perceive Brazil's progress in this direction as being derailed or seriously curtailed by U.S. success in forcing modification of the nuclear agreements with Germany. Given the disparity in conventional military strength between the two countries, the temptation for Argentina to follow this line of reasoning must be strong, although not necessarily overwhelming. On the Brazilian side, this possibility almost certainly enters into security considerations on the side of reinforcing resistance to U.S. pressures.[56]

Thus, in many fundamental ways the Atlantic Security situation with respect to the Southern Cone of this hemisphere comes back to the U.S. policy variable (or as one is tempted to

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[56]This is also supported by the dramatic shift in Brazil's favor in the realm of economic competition. In 1966 Brazilian exports exceeded those of Argentina by only $1.7 billion to $1.6 billion, but in 1977 the gap was $10.1 billion to $3.7 billion. While Brazil's GNP grew by 8.7% in 1976, that of Argentina decreased by 2.9%.

put it, the variability of U.S. policy). Even before the change of administrations in Washington, I was led to conclude that:[57]

> "Perhaps the most serious questions exist with respect to Brazil's future relationship with the United States. In spite of rhetoric to the contrary on appropriate ceremonial occasions, the old U.S.-Brazil partnership is a thing of the past . . . Few veterans of the Brazilian Expeditionary Force are still on active duty, and they will soon be retired. Among those presently in power in Brazil there is little sentimentality for 'the good old days'; what they want is a new relationship of equality, no more confining for Brazil than for the United States . . . The United States is no longer the dominant trading partner, the preponderant source of capital and financing, or the exclusive arms supplier."

The now nearly chronic imbalance in trade is one of the irritants in bilateral relations. The cumulative deficit from 1973 through 1976 exceeded $5 billion, peaking at $1.6 billion in 1975. (Brazilian figures put this at $1,756 billion or nearly half of the nation's total trade deficit on a volume of trade that was only one-fifth of Brazil's foreign commerce.)[58] In 1967 and 1968 some one-third of Brazil's exports were to the United States and this trade was relatively balanced, but during the 1969-1972 period this proportion dropped to about one-fourth and the annual deficit rose from a mere $75 million to over $400 million. During 1973-1974 the U.S. share of Brazilian exports dropped to one-fifth and the deficit doubled and redoubled, first to $882 million and then to $1.5 billion. The record trade imbalance of 1975 resulted from decreases in both sides of the trade, and in 1976 Brazil's deficit was reduced only by the rising price of coffee in the latter part of the year. (The deficit hit $645 million for the first five months and $1.06 billion by the end of October before leveling off.)[59] Sales to the United States of $1.74 billion (FOB) were only a

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[57] See Schneider, Brazil . . ., pp. 197-198.

[58] Ibid., pp. 190 and 199.

[59] Ibid., p. 183.

little over one-sixth of Brazil's record $10.13 billion exports -- up 18% from 1975 -- while purchases of $2.81 billion continued to be down in value from earlier years. Since Brazil managed to reduce its overall trade deficit to $2.2 billion, that with the United States continued to weigh in at nearly one-half.

Much more dramatic has been the deterioration of political relations between Washington and Brasilia. The growing doubts on the part of important elements of Brazil's foreign policy elites concerning U.S. goodwill and "reliability" -- which characterized the November 1976 to January 1977 period -- have been replaced by feelings of dismay and indignation. Perhaps unwisely, Foreign Minister Silveira and his associates had made no secret of their preference for a Ford victory in the 1976 U.S. elections, so that the "Dear Henry, Dear Antonio" relationship that had peaked with the February memorandum of understanding and the subsequent exchanges of visits by economic ministers might continue. Both civilian and military elites were staggered by the way in which the new administration in the United States set out to underscore Brazilian dependency by repeated attacks upon a treaty signed a year and a half earlier and incorporating a rigorous set of safeguards approved at the beginning of 1976 by the International Atomic Energy Agency. For many it was all too vivid a reminder of the jolt received at the beginning of the Eisenhower administration, when the cooperative development plans forged with the Truman government were swept aside and every possible pressure brought to bear against Brazil's project to create a state petroleum monopoly.[60] Cancellation of the military assistance agreement is only symbolic of the assumption of a continued decline if U.S. leadership and will on key East-West problems upon which an increasing number of Brazilian military figures appear to be operating.

Although at present Brazilian policymakers tend to view the USSR as at least tacitly supporting the Carter administration's crusade against an independent nuclear capability for Brazil, they find themselves being pushed into the same boat with the Soviets in resisting U.S. pressures in the human rights field. The Geisel government is generally inclined to seek at least limited improvement in bilateral relations, with emphasis upon increased trade.[61] In 1974 Brazilian purchases from the

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[60]This and related episodes in bilateral relations are discussed in my unpublished memorandum, "Notes on Winning Battles and Losing a War," February 1977.

[61]See Schneider, Brazil . . ., pp. 99-100 and 220.

Soviet Union were roughly $170 million with sales of nearly $100 million, but in 1975 Brazil's exports reached $403 million against imports of $123 million for a substantial trade surplus. Commerce with Eastern European Communist countries is also rising, and even though the Brazilians are aware of the limitations of an "Eastern option," 1977 is likely to see persistent exploration of the possibilities in that direction. Any further deterioration in relations with the United States is apt to spur Brazil toward such gestures as a presidential visit to Moscow. Certainly, the prospects for Brazil joining in regional pacts directed against the USSR are slight and dimming a pace.

SOUTH AFRICA
ITS STRATEGIC PERSPECTIVES AND CAPABILITIES

By

Dr. Chester A. Crocker

I. OVERVIEW: SOUTH AFRICA AS A REGIONAL ACTOR

By any conventional indices of national power, the Republic of South Africa must be taken seriously as a regional actor. Its resource endowment marks South Africa among the top four minerals powers of the non-communist world, and dependence on its mineral output will grow. Its gross national product towers over those of other African states, amounting to some 23% of the continent's GNP. (Egypt excluded) and nearly one-third of sub-Saharan Africa's. South African defense spending accounts for roughly one-third of all African military expenditures (again, excluding Egypt), and its forces are widely believed to be capable of holding firm against any likely combination of African opponents in a conventional encounter. South Africa is the only near-nuclear country in Africa. It is the only state in Africa with a sophisticated market economy, a developed financial and communiations system, and a diversified pool of managerial and technological expertise. Its level of self-sufficiency in armaments production is without parallel in Africa.

Unlike the other major South Atlantic states, however, South Africa's capacity to project national power and shape its own diplomatic/strategic environment cannot be simply extrapolated from this knowledge. In the first place, the Republic's legitimacy as a regional power has generally been denied, ignored, or publicly downplayed by most states whose diplomacy impinges upon the region. For the great majority of members in the Organization of African Unity (O.A.U.) South Africa increasingly plays the same roles as Israel does among Arab states -- an impetus to unity, a reminder of past and continuing domination by a numerically small and culturally distinct minority, an object of condemnation, a scapegoat, and a cuase of tactical divisions all too often manipulated by outsiders. Even within its immediate sub-region, the Republic's position is strikingly dependent upon its raw, physical power over black-ruled neighbors and is subject to a long-term divergence of purpose. In this sense, it is fair to speak of South Africa as a regional power in search of a region in which it can build its future.

A second difficulty in assessing its role lies in the question of timetables. Despite past misjudgments of the winds of change in Africa, there is a new consensus shared by many western observers that history has accelerated in Southern Africa, dramatically foreshortening the life expectancy of the existing system in white-dominated South Africa. The sub-regional balance of power has been overturned by events since the Portuguese coup d'etat of April 1974, and Pretoria has not yet regained the initiative by adapting to a new structure of relationships. By the end of 1976, the Republic itself had experienced the worst outbreaks of domestic violence in the post-war era, echoing the words of Gatsha Buthelezi, the KwaGulu homeland leader, that "history is made by majorities, and not by minorities".

These events form the basis for new truisms, perhaps as misleading as the earlier ones, which suggest that the country has only a few short years in which to discard its dogmas and come to grips with the reality of African determination to cast off white rule. Forecasts of the Republic's regional role depend essentially on such judgments. Moreover, despite frequently cited timetables for a transition to majority rule in Rhodesia and Namibia, there is a strong likelihood that at least one of them will be sloppy and depart from the schedule. Faced with these uncertainties, the task of projection into the 1980s and beyond presents dilemmas not encountered in the case of a Nigeria or a Brazil.

A third complication is that South Africa's "importance" as a regional actor derives both from its relative power and from its role as a focal point of regional conflict. The basic issue in its foreign and domestic policies is identical: how can the dominant 4.2 million whites best provide for their cultural survival -- a term that must be taken to include standards of living, physical security and political autonomy? Unique in the history of western expansion into Africa and Asia, white South Africa is evolving without benefit of convenient parallels and precedents. Of all western-type societies, it has the fewest blueprints from which to chart a national policy; it remains for the most part persuaded that those offered by Africa and external powers are either impractical or suicidal. In these circumstances, one can predict with certainty only that Pretoria will seek to regain the initiative in regional affairs and, failing that, to ride out the storm over its continued, stubborn existence.

This paper does not address itself to the alternative scenarios for internal conflict and accommodation over the next 12 years. The range of possibilities is so great -- and their implications for South Africa'a regional role so varying -- that it may be more fruitful to concentrate on the likely pattern of South African external policy under one governing assumption: that the whites retain effective control, by whatever means, at least through the mid-1980s. This assumption can be challenged, and many writers specializing in African affairs would challenge it. Moreover, the author readily concedes that the assumption renders this an inherently incomplete analysis of South Africa's evolving role. Nonetheless, he prefers to base the study on this premise while emphasizing that the internal and external pressures for change will grow inexorably and, quite possibly, geometrically in the years immediately ahead. Methodologically, it can be argued that chage within our time frame leading to a black-governed state or states in place of the current white-dominated system. This premise would require an altogether different study. In between our premise and the revolutionary premise are a host of middle-range possibilities for escalated internal conflict, territorial fragmentation, political devolution upon various units and population groups, and gradualist reforms within a continuin centralized, unitary state. Rather than muddy the waters with multiple scenarios, the study attempts a reasonably clear focus on trends assuming continued white control. This approach reflects a judgement that whatever changes occur will not <u>reverse</u> the existing balance between the repressive and revolutionary capabilities of the races within the next five to eight years."

II. THE SEARCH FOR POLITICAL COMMITMENT FROM THE WEST

It is important to recognize the entent of South Africa's ostracism and isolation, while also noting those relationships it has managed to keep open. Concern over the Republic's racial problems and policies -- and concern at being overtly associated with them -- has progressively resulted in the state's (a) exclusion from formal alliance systems with all states, (b) exclusion from political/cultural groupings such as the Commonwealth, (c) suspension or expulsion from numerous organs of the U.N. system, (d) exclusion from symbolically important events such as sporting competition, (e) elimination from the list of nations eligible to purchase arms from four of the world's five major arms exporters, and (f) loss of rights and facilities for communications, transport, tourism, and trade in much of neighboring Africa. Few countries' policies receive more critical scrutiny by international bodies and media. The international legal system has declared South Africa's handling of its Namibia dependency to be illegal, and an insurgent government in exile has been recognized by two major international bodies. Just as important, a growing range of pressures and levers are exerted by black Africans and their supporters against third parties who conduct business as usual with the Republic.

Reacting to its "leper" status, South Africa has sought every avenue -- short of conceding a right to intervene in domestic policy -- for increased and diversified external relationships. Despite fluctuations in the tone of its rhetoric about foreign attitudes, there has been a consistent drive for acceptance by others, above all in the West. In the 1940s and 1950s, this effort took the form of participation in western collective defense efforts, acquisition of defense

articles oriented toward "allied" missions in the Middle East and the South Atlantic, and pressure from creation of a western security organization for Africa. The only institutionalized result was the 1955 Simonstown agreement with London which, in fact, limited and formalized a more intimate "imperial" tie.[1] Until its termination by Britain 20 years later, the Simonstown accord constituted South Africa's one, overt defense arrangement with the West.

In the intervening years, Pretoria has assiduously cultivated western military and political leaders, emphasizing a familiar litany: anti-communism, domestic stability, rich resource endowment, defensive strength, and Soviet naval and political ambitions centering on the Cape route. The results have been sporadic and, to Pretoria, disappointing. In the early 1970s, several NATO members (U.S., U.K., France and Holland) showed rekindled interest in Indian Ocean strategic questions, and several of them participated in joint naval exercises with South African forces. Britain marginally relaxed its arms embargo on naval hardware for several years. But by 1975 these arrangements were largely terminated under pressure from domestic criticism and African opposition. Western military journals carried stories favoring defense ties with Pretoria, and the subject inspired leaks of high level consideration within NATO organs. But western strategic interest in Southern Africa was a hardly visible counter at the time when Soviet interest was becoming increasingly evident.

To be sure, it can be argued that Pretoria has enjoyed virtually all the substance, but few of the status symbols, of an institutionalized western defense relationship. The lack of visibility simply reflected an effort to camouflage tacit defense ties. During the past fifteen years, several hundred licensing and co-production agreements have been signed with western countries, giving South Africa an impressive base for self-sufficiency in armament production (see below under IV-a). Actual arms imports during the 10 years up through 1975 are estimated by USG sources at some $375 million; using different methodology, SIPRI data suggest a figure of slightly over $1 billion in arms imports between 1963 nad 1975. Equally significant, formal controls on arms supplies have not extended to a large array of dual civilian-military use items of significant military value: communications,

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[1] Simonstown laid the basis for continued bilateral naval cooperation, continued UK access to the base. and an expansion of South Africa's naval capability for joint operations.

electronics and radar systems; information processing equipment; several types of non-combat aircraft; and sophisticated machine tools and engineering technology. Moreover, key western countries have quietly enjoyed the fruits of security-oriented cooperation with the Republic -- sharing of naval intelligence, joint clandestine activities, overflight and staging rights and space tracking facilities, and naval support in South African ports.

Although this argument fuels criticism of a tacit western conspiracy, it falls short of South African goals. The level of cooperation is below what it would be if western powers considered themselves able, politically, to act on the basis of straightforward defense criteria. As a result, cooperation has been sub rosa, vulnerable to hostile expose; the very sensitivity of the subject limits the strategic worldview of key western decision-makers who gradually interalize taboos and redefine threats to conform with political constraints. In South African eyes, the western nations cannot be counted on against any regional threat unless they are prepared to pay some political price for their continued strategic engagement in the area. The missing ingredient in existing relationships, from their standpoint, is a willingness to act upon a shared outlook.

Outside the defense sphere, South Africa's success in building links with the West has been more pronounced. In fields where it has particular assets or expertise -- mining engineering, fisheries, open-heart surgery -- the Republic has no difficulty gaining world recognition and joining appropriate international bodies. By actively promoting the development of its vast mineral resources and offering a highly favorable investment climate, it has achieved a high and growing level of western engagement in the South African economy. Major western firms are well represented in most sectors of the economy, apart from transport, utilities, heavy industry and armament production.

Estimates of the external stake in the economy range from $12-$15 billion, of which roughly two-thirds is direct long-term investment. Britain leads the way with nearly two-thirds of total long-term investment, followed by the U.S. and West European firms. Outstanding foreign bank lending of some $5.5 billion in mid 1976 (one-third U.S.) permits the country to run a substantial balance of payments deficit. Foreign funds financed 25% of domestic investment in the 1975-76 fiscal year. Similarly, South African trade with the western industrial powers and Japan accounted for the great bulk

of total trade in 1975 (77% of exports and 88% of imports). The country unquestionably depends upon these relationships to sustain the rapid growth of imports and ambitious government spending plans of recent years.

The important question for Pretoria is, what do these economic ties add up to in political terms? The record suggests that foreign lenders and investors, not surprisingly, have a tendency to tighten up on the Republic precisely when their presence is required. Despite growing evidence that the western economies need South Africa, the reverse is equally, if not more, true. At a time when its foreign capital requirements are at their peak, official South Africa is acutely aware of the potential vulnerability to reverse leverage from foreign business and government policies. In addition, the case can be made that foreign access to South African minerals and markets will continue regardless of who runs the country. This line of reasoning could set up a vicious circle in which foreign doubts fuel domestic stagnation, leading to further instability.

In one sense, the events of 1975-76 could be said to confirm South African insecurity about its western relationships, with Angola serving as an all-time low. By the same token, however, these events may have had the ironic consequence of altering, decisively, Pretoria's strategy for securing western engagement. If obvious common interests in economic growth and strategic cooperation are no longer an assurance of western political support, South Africa must look beyond them to the specific, regional conflicts on its borders as a means to heighten western threat perceptions and western responsiveness. In the immediate future, this could entail significant concessions to outside viewpoints over Namibia and Rhodesia in hopes that a convergence of factors will assure at least a balanced western view of South Africa's own difficulties.

III. THE SEARCH FOR REGIONAL ACCOMODATION IN SOUTHERN AFRICA

Long before Portugal upset the prevailing timetables in Southern Africa, the Republic had sought to buffer itself against hostile pressures from the north. The late 1960s and early 1970s saw a flowering of overtures to selected African states. Relying on behind-the-scenes French collaboration, solid contacts were established with Madagascar, Gabon, the Central African Republic, and Ivory Coast. Moderately-oriented regimes in such countries as Kenya, Ghana, and Zaire were also targeted for special attention, while closer to home Pretoria built upon historic interdependence and the

economic vulnerability of landlocked Zambia and Malawi and the enclave states of Botswana, Lesotho and Swaziland. The purposes of this effort were (1) to weaken the O.A.U. consensus on the necessity of confrontation and force in dealing with the white regimes, (2) to establish economic outlets and intelligence outposts to the north, (3) to create awareness of the material advantages of pragmatism in state-to-state relations, and (4) to bolster the country's image as a non-aggressive African state eager to adapt to its regional environment.

The "outward" policy produced tangible results within fairly narrow limits. Despite polarization and tensions in Southern Africa, the Republic reportedly maintains trading ties with 19 black-governed states; discretion is the rule on both sides of these relationships, but IMF data indicate imports of $344 million from the rest of Africa, and exports of $587 million during 1975 (representing 4.5% of total imports and 11% of total exports). (In the absence of reliable breakdowns, the significance of these figures is debated: on the one hand, it has been argued that the data include trade with Rhodesia, and that growth has been moderate largely confined to such immediate neighbors as Malawi, Zambia and the former Portuguese territories; on the other hand, there is clearly ample potential for statistical camouflage and barter deals, and South African goods are widely reported to be available in various African countries to the north).

It is clear that the Republic cannot solve its mounting economic problems by means of expanded African trade -- given the high cost of its manufactures, the weakness of most African economies, and the stiff competition it faces from other exporters. Similarly, South African aid efforts and investment in black Africa are necessarily modest, and there will be relatively few cases where it can compete with the growing economic diplomacy of Arab states and other external sources. The effort to promote communication with African states should therefore be interpreted primarily in non-economic terms. Intelligence capabilities to the north have unquestionably been upgraded during the past 10 years. An apparently durable relationship is established with the Ivorian leadership, resulting in exchanges of ministerial visits and an agreement on landing rights for South African Airways at Abidjan a few months after the denouement in Angola. Diplomatic ties were established with the maverick Malawi government in 1967; Pretoria has provided the country a wide range of economic, technical and military assistance. Experience in several other African states, however, serves as a reminder that such avert ties are the

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JC: VC

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RJG: VC
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exception and are typically dependent upon individual leaders subject to potential coups d'etat.

What may be more significant is South Africa's success in dramatizing the gulf between Pan-African political rhetoric and actual practice in a number of states, especially its immediate neighbors and others to whom the Republic has something tangible and unique to offer. The Republic's mines reportedly drew some 80% (about 300,000 men) of their labor force from Botswana, Lesotho, Swaziland, Mozambique, Malawi, Angola, and Rhodesia in 1975. Paid in gold for completed labor contracts, some of these governments have turned a tidy profit on the difference between the official and market prices. Although it may be increasingly difficult to recruit foreign labor as regional tensions escalate, it must be noted that miner remittances have been the largest single source of foreign exchange for "radical" Mozambique over the past two years; the government's windfall was about $172 million in 1975 and an estimated $115 million last year. The newly independent state inherited a high level of economic integration with the Republic which appears likely to limit its hostility for some time to come, barring further escalation and/or competitive outside intervention in Rhodesia's insurgency. Sixty per cent of Mozambique's foreign exchange earnings derive from the South African connection; Mozambique's rail and harbor system, now dependent on South African technicians and managers after the Portuguese exodus, handles 15% of South African exports and has the capacity to take up to 25%. Earnings from this transit traffic to Maputo are Mozambique's second largest source of exchange. South Africa is the only potential customer for the bulk of the electric power generated by Mozambique's massive Cabora Bassa hydro-electric project, the debts on which are to be financed through power sales. South Africa is the country's largest import source, and it has moved to fill much of the vacuum left by Portugal and the departing Portuguese.

The extent of integration between South Africa and Botswana, Lesotho and Swaziland requires little elaboration. All three participate in a customs union with the Republic, and only Botswana has some basis for substantive independence of policy: over the past two years it has pursued joint projects (including a U.S.-funded road) with Zambia, obtained Canadian assistance for a planned take-over of its railway, currently operated by Rhodesia Railways, and departed from the Rand currency area. But Botswana remains dependent upon its white-ruled neighbors for aid, investment, and expatriate cadres; and it has no army. Thus, the country's Zambian-oriented diplomacy over the Rhodesia problem appears to run counter to South African/Rhodesian predominance in the essentials of power. It will require substantial outside involvement from

alternative sources, or a collapse in Rhodesia, to alter these realities in the coming years. In the years preceding the Lisbon coup d'etat of 1974, Pretoria sought to turn Zambia's neightened dependence, flowing from Rhodesia's Unilateral Declaration of Independence in 1965, into the centerpiece of a southern African strategy. Trade flourished and official contacts were maintained over a range of regional issues. But the Pretoria-Lusaka tie proved to be a stormy marriage of convenience complete with charges of plots, threats of cross-border action, damaging exposes of secret discussions, and noisy protests over South African deployments in the Caprivi strip (Namibia) and Rhodesia (beginning in 1967). Salisbury's blunder in closing its border to Zambian rail traffic in January 1973 damaged not only itself but also the joint economic/transportation interests of South Africa and Zambia which was forced to divert a substantial portion of its foreign trade to the Angolan port of Lobito.

These developments explain the sudden surfacing of South African-Zambian détente diplomacy in 1974, as it became clear that Lisbon would rapidly depart from Africa, handing power to "victorious" freedom fighters. The two states shared a remarkable parallelism of interests which became clear as the Angolan crisis developed. But détente started over the Rhodesian situation created by FRELIMO's takeover in Mozambique. In a series of carefully orchestrated moves, the South African and Zambian governments designed a Rhodesian plan aimed at a negotiated settlement between the Smith government in Rhodesia and the ANC political leadership. The package included: the release of detained Rhodesian nationalists by Salisbury, the withdrawal of South African ground troops from Rhodesia, the closing of Zambian-based guerilla camps, and firm pressure by several African leaders to pull the ANC's political leadership together for the purpose of doing a deal with Salisbury. This effort, which had the quiet support of all the major powers except the U.S.S.R., culminated in meetings between Vorster, Zambian President Kaunda and the various Rhodesian parties at Victoria Falls in August 1975. For a few short weeks, Vorster was widely hailed as a statesman of Africa. Just as quickly, however, the peacemaking effort bogged down on Smith's agile maneuvering and the endemic factionalism among Rhodesia's African nationalists; the simultaneous drama of Angola's civil war further undermined its hopes.

On the Namibian/Angolan front, South African policy was to launch an internal process of constitutional talks in mid-1975 and to announce revisions in discriminatory racial

legislation within the territory. At the same time, facing a confused power vacuum in neighboring Angola, South African forces crossed the border to contain SWAPO activities and provide security to important hydro-power and irrigation projects. In September, South African forces contacted UNITA and FLNA elements to arrange a military plan aimed at regaining and holding southern Angola from the threat of the Cuban-supported MPLA advance. The plan succeeded in providing the basis for UNITA/FLNA participation in a negotiated settlement with the MPLA at the time of independence in November 1975. Negotiations, however, were not the game plan of the MPLA and its external patrons; South Africa, which at one point had 2,000 men engaged in the central Angolan contest, was progressively isolated in both diplomatic and military terms as Cuban combat forces created a political-military victory for the MPLA. The overall result in African terms was a resounding defeat for detente diplomacy, for Pretoria's closest partners who had urged it on in Angola (Zaire and Zambia), and for non-military solutions to political transition in Southern Africa generally.

In the months January to March 1976, South Africa faced a series of stinging reverses to its effort to defuse African pressures and manage the process of change set in motion by Portugal's withdrawal. Angola was an unmitigated disaster, at home and in Africa. In February, the final stages of the Smith/Nkomo talks collapsed. At a meeting in Mozambique, the Zambian and Botswana governments joined those of Tanzania and Mozambique in formally scrapping the negotiations route in Rhodesia, endorsing the guerrilla leadership of the Zimbabwe Peoples Army (ZIPA). In March, Mozambique closed its border to Rhodesia and placed the country on a war footing in support of ZIPA's efforts which soon produced a marekd increase in conflict within Rhodesia. To cap the sequence, South African actions in Angola were roundly condemned by the U.S. Security Council where Pretoria received no significant diplomatic support from Washington and other western powers.

The events summarized here threatened to destroy the fragile accomplishments of 10 years of regional diplomacy. South Africa's remaining overt diplomatic partners -- Ivory Coast and Malawi -- were increasingly irrelevant and isolated; its relationships with other regional states rested more blatantly than ever on the exercise of raw, physical leverage as in Mozambique and Botswana. The political basis for averting the slide toward militarization and radicalization of conflict had been weakened, if not destroyed. The conclu-

sions drawn by Pretoria in these circumstances form the basis for its current and longer term regional policies. They are:

a. engaging the West in Southern African conflict/management. Pretoria failed to achieve its regional goals because it ran out of the necessary diplomatic and political assets. Given its "leper" status, African states could no longer work in close association with South Africa to manage the context. The West was needed to "stiffen" moderate African states and Peking in their resistance to Soviet/Cuban use of force and the diplomacy of force. The West would be needed to provide bargaining "sweeteners" on a scale beyond Pretoria's increasingly strained resources. Moreover, only a western context would provide a basis for South African leverage vis a vis Salisbury and the whites of Namibia, permitting the government in Pretoria to bring public opinion along in support of risky and possibly unpopular concessions to African demands. Finally, the precedents created by Soviet and Cuban involvement in Southern Africa argued for the necessity of developing a political basis for western involvement to limit communist risk-taking.

Now, a trade-off would be required -- accepting western "interference" in its previously buffered sphere of influence as the necessary price for gaining western partners in regional conflict management. Washington's unreliable and even devious performance vis á vis its South African partner in Angola made the switch urgent. This reversal in Pretoria's viewpoint coincided with the collapse of American policy toward the region and a major policy review aimed at identifying the means for an American strategy.

The results of Washington's reappraisal -- Kissinger's Africa trip in April 1976, the Rhodesian initiatives leading to Smith's acceptance of a two-year transition framework for negotiations in Geneva, the series of three Kissinger/Vorster summits from June to September 1976, parallel discussions on Namibia and on activist American diplomatic effort among the black states -- have received wide attention. The point to be emphasized here is that, however one views the new American activism, it is precisely what South Africa required at this stage in the evolution of regional affairs. For that activism, if it is to have any substantive meaning at all, implies the search for compromise accommodations, an atmosphere of bargaining rather than sterile rhetorical confrontations, and a willingness to deal with Pretoria on the basis of its performance rather than its pariah status. To be sure, Kissinger's readiness to meet with Vorster publicly and to describe white South Africans

as "historically an African people" represents nothing more than symbolic and conditional recognition of the Republic's regional status. But from Pretoria's vantage point, the new western involvement, if sustained, represents one of the more promising developments of recent years. Great care will be taken to preserve it as the Rhodesia and Namibia situations unfold over the next 2-5 years.

b. limiting the damage in Rhodesia and Namibia. South African actions over the past three years indicate that the Republic is not interested in continued white minority control of Rhodesia and its Namibian fifth province at the price of open-ended South African military involvements. In purely military terms, the Republic does not possess the white manpower or the financial resources (though it may have the necessary industrial/technological base) to wage extended counter-guerrilla wars over the vast expanse of Southern Africa while also ensuring internal security. Moreover, white domination in these states is only convenient, not necessary from Pretoria's standpoint. What is most important as the external and internal challenges mount in these territories is the nature of the transition to black rule. Key elements of a tolerable transition, from its standpoint, include: pre-emption of the political-military option being pushed by communist-supported liberation groups, a transition environment consistent with the pragmatic pursuit of state-to-state relations with the successor government[2], retention on some basis of non-communist expatriate skills to prevent the "vacuum of cadres" problem which emerged in the Angola transition[3], and assurance of sufficient international legitimacy for the successor government to forestall continued liberation efforts.

To this list should be added two negative conditions of the greatest concern to any white South African government. First, the transition process must not be seen to result primarily from Pretoria's own sabotage of the white position in neighboring territories. In effect, this would seem to require

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[2]As Mozambique's experience suggests, this may be possible even with a revolutionary successor government, but only in circumstances of extreme dependence on the Republic.

[3]As a practical matter, this calls for the survival, under conditions of gradual Africanization, of the existing administrative and security apparatus.

that the settlement effort be internationalized and include some form of guarantee of white economic and physical security interests. Secondly, the transition should not result from a "steamroller" effect in which white control is seen to be crumbling throughout the region, creating potential effects such as the 1976 riots within South Africa. In other words, although any transition will probably remove the Namibian and Rhodesian lightening rods and increase pressure on the Republic over time, some scenarios are less attractive than others.

Though this list of conditions appears long, it was met fully by the package of Rhodesian proposals which Smith accepted last September. That framework foundered in January 1977 on three issues: calculated ambiguity as to the firmness of the framework itself, the inability of the various African parties (states and movements) to take a unified position, and the delegation of the mediatory role to a British government lacking the strength to resist demands for drastic revision of the original negotiating terms. This is not to say, however, that future negotiating frameworks acceptable to Pretoria may not emerge with the passage of time, and one can anticipate continuing South African efforts to revitalize this option.

What most concerns Pretoria about the Rhodesian stalemate is the strength, not the weakness, of the white position there. South African military people have had close exposure to Salisbury's counter-guerrilla efforts, and they respect the efficient utilization of white and black Rhodesian soldiery whose insurgency experience goes back to service with the UK in Malaya. Based on these observations, Pretoria calculates that Salisbury can hold on into the 1980s providing (2) white emigration rates can be brought down and stabilized, (some 7000 of Rhodesia's 270,000 Europeans departed in 1976), and (b) Salisbury continued to face African opponents, as distinguished from non-African ones. The risk, in sum, is not that power vacuum will soon develop in Rhodesia, but that the continuing vacuum in Mozambique could be filled by communist combat support as African frustration grows, triggered perhaps by Salisbury's cross-border activity.

In Namibia, Pretoria's freedom of action is greater and its responsibility direct. This explains the decision in mid-1976 to announce a December 31, 1978 deadline for the transition to independence under constitutional terms to be determined. As in Rhodesia, Souht Africa's main concern is probably not the low level guerrilla activity along the northern border. This can apparently be contained without

serious difficulty drawing upon local units and South African Citizen Force trainees to round out a total force of less than _____ men. South Africa, it will be recalled, has been a full participant in the complex web of ethnic/political ties inside southern Angola. It does not face a unified front of SWAPO fighters backed by MPLA/Cuban forces, and it can play the UNITA card as and if necessary. More troublesome for Pretoria are the problems of (a) finding some basis to legitimize the planned transition without giving the future government over to outright control by SWAPO; and (b) gaining sufficient negotiating flexibility to do a deal including some role for SWAPO without undermining the participants in current constitutional talks and provoding charges of sabotage by local whites. Few firm predictions are possible on the prospects in Namibia, itself a potential power vacuum of awesome proportions. But it does seem clear that Pretoria has made the decision to cut its losses there and meet its deadline.

c. learning the military lessons of Angola. The Angolan adventure confirmed the long-standing judgment of defense planners that African combat forces can offer little effective resistance to a sophisticated, western-style military force configured offensively. The new elements faced in Angola included a sizeable external combat force including several hundred Soviet advisors, a limited number of Algerian pilots, and an estimated 15,000 well-armed Cuban ground troops backed by unopposed Soviet logistic support and naval presence. According to a recent South African Defence Force report, the Cuban performance in Angola was something less than awe-inspiring. Direct, in-strength engagements were relatively rare, but Cuban/MPLA units were badly bloodied in several instances at minimal cost in South African casualties. Far more impressive to South Africans was the effective reach of Soviet strategic power from South Atlantic deployed naval units and convenient African air facilities (Conakry and Brazzaville), together with the freedom of action (transport and logistics) which Soviet cover provided to the Cubans.

There is little reason to think the South Africans anticipate an early intervention by Cuban units into the Namibian or Rhodesian insurgencies. For one thing, Cuba may already be dealing with an open-ended patron-client relationship wherein its forces will be needed to provide regime security to the MPLA government into the 1980s. Having 15-20% of its army tied down in Angola, Havana seems more likely to confine any new commitments to an advisory role, as in Mozambique with the forces of ZIPA. On the other hand, Pretoria does -- it would appear -- need to assure itself that it can meet the threat posed

by the possible introduction of sophisticated (by African standards) hardware (tanks, jet combat aircraft, heavy guns and rocket launchers), and it will require greater assurance of its ability to detect, intercept, and engage hostile infiltration via naval means. (See below IV(1)).

IV. THE SEARCH FOR SELF-SUFFICIENCY AND DIPLOMATIC/SECURITY OPTIONS

It can be argued that there is a symbiotic relationship between the first two imperatives in South African policy: it may not be possible to build reliable bridges to the West unless South Africa's whites can in some fashion make their peace with Africa; alternatively, it may be that only the threat of internationalized conflict with active communist participation is capable of bringing the West into the collaborative relationship which Pretoria hankers after. Whichever scenario the outside observer considers most likely, the fact remains that white South Africans cannot afford to rely on either. To be sure, Angola produced a surge of American activism, but how durable is that activism? And what will be the price of western activism in terms of foreign interference in South African domestic, as distinct from regional, affairs?

These questions are of more than passing interest in assessing South Africa's evolving regional role. Afrikaner nationalism has been one of the most introverted, isolated, and self-sufficient of modern times. However much the western world may appear tacitly to sustain modern-day South Africa, the white power entrenched in that country is the product of a successful revolt against "alien" imperial authority at the turn of this century and a successful defiance of foreign pressure throughout the era of decolonization. The apparent strategic retreat conducted under Vorster's leadership in the past three years should be interpreted in this light. A basis is being laid for the unhappy possibility of protracted conflict without external support.

a. The military dimension. Unlike many of the world's other burgeoning regional powers, South African planners do not need great imagination to conceptualize missions and roles for their armed forces. Nor do defense plans and weapons programs reflect a political requirement to molligy potential leaders of military coups. The basic missions of the SADF are three: to act in support of the police in assuring internal order, to meet the threat of internally or externally based insurgency, and to check a conventional attack by land or by sea (under a wide range of potential circumstances). In the interim

period before African control is established in Namibia and Rhodesia, one should add a fourth role of assuring sufficient strike capability to check a threatening development in these territories and their immediate neighbors (Mozambique, Botswana, Angola, Zambia), and to extricate beleaguered white communities. Finally, the SADF have evolved a maritime patrol mission in the strategic waters of the Cape Route, both in connection with western naval presence and autonomously.

There is inherent ambiguity in the term maritime patrol, and it calls for further elaboration. In the first place, straightforward national defense considerations require greater capability for long-range reconnaissance by air and patrol by sea. Second, Pretoria has for the past 10 years waged a major effort with some success to increase the interest of potential western allies in various forms of cooperation to "protect the Cape Sea Route." Western candidates have generally resisted or disengaged from formal, overt arrangements. The Republic's interest in such potential, maritime alliances -- whether tied to Australia, Latin America, NATO or individual western nations -- is both security and politically-oriented. Success in finding allies would enhance legitimacy and the prospects for obtaining political commitment as well as sophisticated naval equipment. Thus, South Africa makes the case that it cannot protect this vast body of water by itself, that its potential allies depend on the route at least as much as South Africa does, and that any serious plan must provide a broader geographic context to include such potential choke points as the Mozambique Channel. In sum, the Republic is offering to play a regional role in an allied setting and to acquire the additional hardware that might make that role credible.

A new aspect of maritime patrol missions was added in early 1977 with the decision to declare a 200-mile economic zone. The decision should be viewed in the light of stiff competition and over-fishing in the lucrative Scutheast Atlantic Fisheries, the world's 7th largest. South Africa ranked as the world's 12th leading fishing power in 1974, and its second largest producer of fish meal. Fish production covers domestic demand and provides roughly 1% of total exports; the industry has suffered from outdated equipment, but is being modernized with the addition of factory ships. Indian Ocean waters accounted for less than 5% of its 1974 catch, while Namibian waters accounted for 69% of the total (data incorporates Namibia's own catch). Although the Republic took

about 50% of the 1974 catch in the ICSEAF convention zone, there is strong domestic pressure for restrictions on the distant water fishing countries, led by the U.S.S.R., Spain, Japan, Poland, Cuba, and Bulgaria. Prior to the extension of territorial waters, this fishery has been relatively unregulated, encouraging distant water states' total national catch provided by the Southeast Atlantic Fisheries was as follows: Cuba, 33%; Bulgaria, 17%; Spain, 14%; Poland, 9%; U.S.S.R., 5%; Japan, 1%.

It is not self-evident whether these data point to the likelihood of near-term tensions over fishing access; but several factors should be borne in mind. The richest parts of this fishery lie off the shores of Namibia and Angola, and there is a significant local industry in both places. Secondly, Cuba'a African policy would appear to contain a fishing component: Spain has received an order for 21 factory trawlers for Cuba's fleet as part of an effort to triple the annual catch, and there are few obvious alternatives to the South and Central Atlantic regions to use them. One might expect Angola to be receptive to Cuban requests for special arrangements; the Soviets signed an extensive fishing agreement with Luanda in October 1976. Thus, it would appear that fisheries considerations provides yet another incentive -- though not necessarily a compelling one -- for Pretoria to upgrade its limited naval capability for high seas patrol and to update its maritime patrol aircraft (7 Shackletons and 20 Piaggio light transport/reconn aircraft).

The Angolan conflict has also had the effect of focusing additional attention on naval development in the Republic. The Navy's 28 ships include a high proportion of outdated coastal patrol vessels and minesweepers; the front line inventory includes 6 frigates, 2 destroyers, and 3 submarines -- all oriented principally to an ASW mission. To provide greater deterrent credibility against foreign intervention and the potentially unopposed naval diplomacy of the USSR, the Republic perceives a need for a naval force up to twice that size including more modern subs and surface vessels and high speed coastal patrol craft carrying sophisticated gear and armament. 13 ships in these categories are on order: from France, two subs and two frigates; from Israel, three fast patrol craft and 6 corvettes armed with the Gabriel s-s missile. French willingness to proceed with such sales during the circumstances of 1975-76 surprised no one, and rests on explicitly states concerns for Cape Route security (as well as economic considerations). Similar reasoning could make further acquisitions by Pretoria possible, including the Breguet Atlantic maritime patrol aircraft.

The recent naval emphasis in South African defense plans -- naval vessels accounted for only 10% of capital expenditure during the period 1969-73 -- constitutes something of a departure from the prior focus on landward threats and relatively basic equipment. To the extent that Angola-type threats continue to affect its thinking, the Republic is likely to pursue the option of naval development into the 1980s, insofar as financial resources and outside suppliers permit it to do so. Although its yards have the capability to produce patrol craft, such items as patrol aircraft, larger vessels, and modern munitions systems require outside collaboration. Realizing that expanded naval power will make it a still more attractive strategic partner for the West, officials are likely in the near term to continue their effort to expand self-sufficiency and to diversify arms import sources. In any event, the cornerstone of its naval power -- the maritime monitoring system at Silvermine -- is already in place, thanks in large measure to tacit cooperation of various NATO powers. This asset assumes greater importance - in defense terms and as a bargaining chip vis a vis the West - as alternative western facilities in Mauritius and Madagascar are closed down and as Soviet assets in both oceans continue to grow.

South Africa is somewhat better off when it comes to land and air forces, both in terms of its level of self-sufficiency and its existing force structure. This is the result of a sustained and dramatic rise in defense expenditures in the years 1959-64 (from $54 million to $291.5 million) and again from 1971 to present: the totals for the past six years have been:

Fiscal Year	Total Defense Spending in Million $*
1971-72	396.5
1972-73	448
1973-74	703
1974-75	1052
1975-76	1332
1976-77	1552

*current dollars

The recent rise reflects an acceleration of planned spending aimed at achieving 1984 force goals by 1979. Apart from naval forces, the build-up centers on armored vehicles, heavy guns, helicopters, precision-guided weapons (anti-air and anti-tank)

and combat aircraft (principally the Mirage F-1 and the Impala Mark 2). Many key combat items are produced in South Africa under licenses (principally from France and Italy) which would appear to offer the licensor significant potential leverage, a situation which explains Pretoria's interest in closer ties to Israel as a weapons source. Nevertheless, despite the announcement of a partial French arms embargo in August 1975, there is little published evidence to date of a clamp down. Existing license commitments appear to be secure in the field of combat aircraft for both fighter/interceptors and ground attack planes oriented to a conventional or counter-insurgency role. The Republic produces its own artillery and armored cars with only minimal use of imported components. Acquisition of systems clearly aimed at strike or insurgency missions such as tanks and helicopters could pose future difficulties for the Republic; the tank inventory was acquired in the 1950s and the four helicopter squadrons total some 80 aircraft.

Barring the unlikely eventuality of massive outside intervention or invations, the Republic has made the necessary decisions and investments for land/air defense against cross-border threats (including Namibia) well into the 1980s. Though dependent on imports and licensing agreements, this reflects to some degree an economic decisions to avoid the high costs of local develop,ent and production as long as imports remain available.

The Republic spends a relatively small percentage of its defense budget on imported combat equipment and associated components (around 5% in 1975-76 according to ACDA data which seems low). There is little reason to quarrel with the conventional judgment that it is capable of meeting the existing internal as well as external threat.

Nevertheless, there are three areas of potential concern, as defense planners look ahead to the 1980s. First, it is difficult to predict the dimensions of the threat to internal stability. When this factor is added to the certainty of regional disorders over the next 3-5 years, it adds up to a decision-making environment of extreme insecurity. Pretoria is now spending 16-18% of its national budget and 4-5% of GNP on defense, and further increases can only come at the expense of other high priority sectors that are critical to the country's capacity to maintain and expand employment, to develop the infrastructure needed for export expansion, and to meet the perceived requirements for self-sufficiency in energy and basic industry. Difficult trade-offs lie ahead.

Spending by the government and its parastatal bodies now accounts for 30% of GNP (compared with 19% in 1960), and they are committed to spending a conservatively estimated $20 billion in major non-defense capital projects over the next 5-10 years. These commitments, like key defense spending plans, were made while the price of gold was around $200/ ounce. An overheated economy has given way to recession and restraint, in part imposed by increasingly tough lending terms of foreign bankers and the IMF. A number of capital projects have been slowed down or shelved, and it would thus appear that the days of constraint-free defense planning are over.

Second, South Africa's position is heavily dependent on continuity in French domestic politics and foreign policy. France's dominant role in licensing and exporting security-related items -- ranging from missiles to subs, helicopters, electronic gear, and nuclear power plants -- speaks for itself. In the event they should forget it, South Africans are sure to be reminded by their new Israeli diplomatic partners of the risks of counting on Paris.

Finally, the Republic has had to alter its manpower strategy in recent years, and the strain will continue to grow, barring any sudden resolution of internal and regional racial conflicts. The active duty SADF totals some 51,500 men and has grown very gradually over the past five years; of this number, just 16,100 are members of the professional Permanent Force divided among the three services, with the remainder being draftees on 12-month tours (or 18-24 months at their choice). The active duty component is modest by any definition, even if the 34,000 police regulars are added in, yet the SADF actives alone account for an estimated 7% of the white manpower pool between the ages of 18 and 45. This figure exceeds the manpower drain carried by most of the Republic's economic partners and competitors, and can be considered as a long-term constraint. To meet perceived security needs, a substantial increase in the white reserves has been undertaken: 173,500 men serve in the Citizen Force reserves, and another 90,000 men are organized in volunteer para-military ground and air units known as the Commandos. Thus, the Republic has laid the basis for an enormous mobilization of white military manpower in the event of major internal disturbance or war.

But the evidence suggests that the threats facing South Africa, if expanded, could require larger standing forces. To be sure, the 1976 rioting was dealt with by the Republic's

highly efficient police system, itself nearly 50% staffed by non-whites, many of them armed. But the longer-term possibilities go well beyond the current demands of Angola, Namibia or Soweto, and may well include continuing insurgency along an extensive border zone. This accounts for the transformation of the Cape Coloured Corp, formed in 1963, from a non-combatant service supporting unit into an integral part of the active and reserve forces with training in the use of arms. In 1975, the first Coloured officers were commissioned to serve in an active duty unit of some 1500 men. Meanwhile, African armed police saw action along Rhodesia'a northern borders during the early 1970s, and by 1974 the SADF had begun recruitment of Africans for training, including the use of arms, in the SADF. An African infantry battalion oriented to guard and border duty is in process of formation. Despite the extreme domestic sensitivity of this issue, Africans will be armed in more than symbolic numbers and will be promoted to officer rank. Given Rhodesia'a demonstrable success with African combat units to date, the SADF will be tempted to make increasing use of non-white manpower, and the government must face up to the domestic political implications. The other constraints on increased non-white forces will be (a) a training bottleneck which already places strains on the skeletal Permanent Force and (b) competing demands from the SADF itself and the homelands as they establish their own defense units, manned and officered by Africans.

b. The Diplomatic Dimension. Much has been made of Pretoria's efforts to break out of political-military isolation by developing diplomatic options with other "odd men out" and rising regional powers: Israel, Iran, Taiwan and Brazil are most frequently cited. It would appear, however, that there are several important constraints on these possibilities in the years ahead.

In the first place, it is both more convenient and more efficient for Pretoria to rely on the tacit cooperation of the West's major technological powers as long as this may be possible. There is a clear preference, under free market conditions, for German, Japanese, US, British and French technology in the fields of greatest interest to the Republic. Moreover, these nations have the financial means to facilitate large-scale trade and investment. Of the alternative financial collaborators, only Iran can provide real options; the terms of a $600 million Iranian gold collateral loan to South Africa in 1976 suggest that Tehran was acting on straight business incentives.

Secondly, the potential for expansion of trade across the South Atlantic is finite. In the case of Latin America's most proximate pariahs, Uruguay and Paraguay, Pretoria has utilized summitry, financial sweeteners and trade promotion to foster closer ties; but the net gain in terms of status and diplomatic flexibility is marginal. Despite recent increases in its trade with Latin America, South African trade with South and Central American represented less than 1% of total trade, 10% of its African trade, and 5% of its trade with Asian states, in 1975. Among several constraints on expansion are the absence of natural economic interdependence, the lack of traditional ties across the South Atlantic, and the existence of familiar trading patterns oriented elsewhere.

Latin American states may possess less freedom of action than is generally supposed. Brazil, for example, which accounts for the lion's share of South African trade with Latin America, may perceive that it faces a choice between black Africa and the Republic, an especially important consideration in light of Brasilia's oil import dependence and historical/cultural ties to black Africa. Pretoria maintains diplomatic relations with 14 Latin American countries, compared with two 10 years ago. But this accomplishment, suggesting a means of limiting its diplomatic isolation, may become increasingly vulnerable to African diplomacy in the international fora where horse-trading across a range of issues is involved. Venezuela announced a severance of trade ties with the Republic at last November's U.S. General Assembly, citing internal conditions in the country; the bilateral trade balance had strongly favored South Africa. These factors can be expected to restrain the growth of political and trade links except in the case of the Latin pariahs, a grouping which Argentina may join in the coming period. Thus, Pretoria's best hope for strengthened ties with the major Latin American powers may lie in their disenchantment with the political reliability of the U.S. and other western powers. South Africa's potential as a co-producer of arms and a nuclear supplier for these countries could be realized if their current sources misplay their hands.

Israel and Iran could offer greater promise to Pretoria, given their long-established tradition of defying the orthodoxies of their region. The relationships are still embryonic; Israel's trade with South Africa represented but 50% of the latter's Latin American trade in 1975, or a meager .5% of the worldwide total. (The Arabs and Iran do not publish trade figures with Pretoria, though the total may be significant.) Similarly, Israeli arms shipments constitute a minor fraction of

South Africa's supplies. To succeed in this unfamiliar diplomatic arena, Pretoria will need an ability to offer tangible and scarce quid pro quos, and a willingness to drop some of the niceties of its still western-oriented diplomatic style. The greatest potential for such bi-polar or tri-polar interdependence clearly lies in the fields of nuclear development, conventional arms manufacture/supply, and large scale infrastructural projects. Overall, the future of such new alignments hinges on decisions taken in Washington and Europe which may encourage, or impede, the search for alternatives in Tel Aviv and Tehran.

African states to the north can be expected to focus increasingly on limiting South African trade, investment and technological ties, using their Latin, Arab and western contacts as points of leverage. However, in the final analysis it is the West's vulnerability to such pressure which will be most significant, even under the most optimistic assumptions about African diplomatic skills. Three scenarios are possible: (a) western nations continue or increase overt and tacit relations with the Republic, thereby assuring that Israel, Iran or Argentina remain secondary factors; (b) western nations tighten up on South Africa's access to arms and technology, trade and investment, but tacitly "accept" South African partnerships with these other states even when there is leverage to curtail them -- a situation that could arise in the case of Israeli arms shipments to South Africa; and (c) western nations launch a determined effort to shut down Pretoria's freedom of action and limit its external relations generally as part of a sanctions effort.

The third scenario would, of course, be the most devastating in its impact on white South Africans (to say nothing of black South Africans), but it is the least likely to occur. Western relations with South Africa may not flourish over the coming decade, and could become more politically constrained. But a unified and determined western effort to force changes in South African domestic policies is judged unlikely. This judgment rests on the view that Pretoria has too many telling diplomatic cards to play vis a vis too many important actors whose policies can be expected to harmonize only with great difficulty in the power diffused world of the 1980s. (See V below.)

c. The energy and nuclear dimension. It is coming to be accepted that neat distinctions between civilian and military nuclear programs can no longer be made. South Africa's case bears this argument out with special force since the country has three overlapping incentives for nuclear development.

As an energy consumer, South Africa ranks high in relation to its level of development, reflecting the central role in the economy of energy-intensive mining and metallurgical industry. To meet energy needs, the Republic is endowed with rich coal deposits[4], and it has relied on coal for some 75% of primary energy supplies in recent years. Coal prices have been restrained in order to discourage high-cost fuel imports; nonetheless, petroleum imports cost South Africa $1.15 billion in 1975, six times the 1972 figure. To offset the dependence on imports, the government has pressed the search for oil (without significant results to date), invested heavily in oil-from-coal projects that could cover some 40% of existing oil demand by the mid-1980s, and committed itself to purchase large amounts of Mozambique's hydro power.

Despite these measures, nuclear power is considered to be essential over the next ten years, and it becomes economically attractive as the coal price is increased, thereby permitting a substantial balance of payments gain through coal exports. (Japan has signed an 11-year coal supply contract with Pretoria valued at $840 million.) The domestic availability of uranium and the solid prospects for a domestic enrichment capability make nuclear power appealing on both self-sufficiency and balance of payments grounds. Thus, the May 1976 announcement that France had won a $1 billion contract to build the Koeberg nuclear power station came as no surprise. Neither did the speed with which Pretoria shifted to the French deal when a competing US/Dutch/Swiss bid ran into political difficulties in the supplier countries.

Pretoria also has strong incentives to transform its uranium reserves into a position of worldwide influence as a supplier of enriched uranium. The Republic's uranium reserves are estimated at 20-25% of non-communist reserves (depending on the going price), and its output of the mineral averaged 13-14% of non-communist production in the mid-1970s. The Nuclear Fuels Corporation has announced plans to double output to some 6,000 tons of oxide by 1980.

However, it is enriched uranium, not oxide, production which holds the best hopes for breaking the cycle of dependence and vulnerability so reared by Pretoria. Hence, the Vorster government in 1970 hailed the development of a "unique" South African enrichment process as an event "unequalled in the history

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[4]South Africa possesses the world's sixth largest coal reserves and ranks ninth in coal production.

of our country". In 1976, the president of the Atomic Energy Board confirmed that a pilot enrichment plant is in operation and that a commercial scale plant would become operational in the mid-1980s. This extraordinary development -- facilitated by U.S. and German training and technology sharing -- provides the basis for South Africa to become a senior member of the Nuclear Suppliers Group, one of four nations potentially self-sufficient in uranium supplies and enrichment capability. Since it simultaneously offers (a) supplier leverage, (b) the leverage of being able to undermine NPT adherence by others, (c) a high degree of energy self-sufficiency, and (d) nuclear weapons potential[5], the nuclear card is unquestionably one of South Africa's strongest in dealings with the world community.

The thrust of the analysis presented here supports the view that one should assume the development of a nuclear weapons program by 1985. This conclusion flows directly from the gravity of the conflicts Pretoria may face, its inability to devise peaceful solutions to any of them so far, and its lack of reliable outside support on the key issue of cultural survival. The question, therefore, may not be whether South Africa will go nuclear, but how soon, under what circumstances, secretly or publicly, and with what results?

There is an impressive list of reasons for avoiding a weapons program: costs, likely external reaction, a lack of suitable targets and strategies in the region, and loss of the bargaining power inherent in ambiguity about one's intentions as a non-signatory of the NPT. Of these, only the last argument is persuasive, and it can be met by a policy of developing, but not testing, weapons. Official spokesmen have been intentionally ambiguous on the issue, and could continue this line into the indefinite future, following the Israeli example. On the other hand, it is possible that a decision to explode a device might appear attractive in a context of crisis or domestic insecurity, outweighing the advantages of appearing to observe, without signing, the NPT. As to consequences, a decision to go public in the 1980s is certain to stir reaction in many places; but there is little reason to suppose

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[5]The writer has no basis on which to question the operational efficiency of South Africa'a adaptation of the so-called Becker jet nozzle process, nor to speculate as to the weapons utility of plutonium produced by its research and commercial reactors. USG officials have testified that it has "the technical ability to take steps toward making a bomb"; estimates of the lead-time needed to produce a bomb range fr a few months to four years.

that the western world would select that moment to take measures against the Republic which it had failed to take over the preceding decades. On balance, however, the ambiguity option may have more merit for Pretoria, providing as it would for several forms of NPT-related leverage and "justifying" western ties which might otherwise be more difficult for the West, at least, to sustain.

V. POLICY IMPLICATIONS

As indicated above (I, p. 3), this analysis rests on the assumption that white South Africans will retain effective control up to 1985, and it has not addressed patterns of internal evolution. The policy implications outlined in summary form here rest on the same assumption, and consequently do not deal explicitly with measures designed to advance particular strategies for promoting change. They are based on a judgment that the Republic's internal situation will not be "resolved" within this period.

1. Were it not for the factor of racial conflict, the West would have significant incentives, probably irresistable ones, to embrace South Africa in more formal ways, including defense arrangements. While many western interests can be pursued without such an embrace, some important ones cannot. South African naval strength will remain constrained to a largely coastal, as distinct from oceanic, mission. Given the financial and manpower costs and procurement difficulties it faces, South Africa will give low priority to long-distance maritime presence and patrols which make sense only in a context of allied planning and doctrine. As a result, western planners face the choice of providing presence and coverage that South Africa would otherwise offer, or doing without them. Both choices have costs. Second, South African bases, harbors, airfields and extensive logistics support possibilities are not available for routine peacetime use by the West, though they would be in emergency situations, it can be assumed. This limits operating efficiencies; requires the development of alternatives, and may lessen the political/diplomatic credibility of western presence in the area in Soviet eyes. Third, western nations are constrained from developing ties at the service level which would enhance joint operations, and their influence on South African deployments, force postures, and doctrines is correspondingly curtailed. Fourth, the absence of strong defense ties sharply reduces western influence across the whole range of South African policy. The net effect is to add to Pretoria's incentives toward self-sufficiency and diversified international alignments. Power is diffused to a more independent international actor which will likely go nuclear.

2. There is no reason for optimism that South Africa will become an embraceable regional power during the period through 1985. In these circumstances, western decision-makers will not be able, for domestic political reasons, to act on the interests outlined in the previous paragraph, except through exclusively western instruments. If defense requirements point to an upgrading of western presence and capabilities in the Southern African oceanic areas, this should be accomplished independently of the Republic. This approach implies several additional conclusions. First, the West must not become trapped into a posture of defending the South African internal status quo through its approach to naval strategy. Rather, it should keep a clear distance apart from the government while also supporting promising initiatives and leaving the path open to improved relations as and if significant changes are implemented. Second, this does not imply that the U.S. and Europe should encourage violent solutions and Soviet/Cuban risk-taking either by their actions or their lack of action. The U.S., in particular, should communicate its interest in racial accomodation and peaceful means and react promptly to indications that Soviet/Cuban forces are exploiting transitions or planning cross-border activity.

3. It follows that a relatively activist western policy over change in Rhodesia and Namibia serves western interests better than to let events take their course. South African interests on these issues converge with those of the West (and most neighboring African governments). The fact that Pretoria wishes for western involvement in regional conflict management should not be interpreted, ipso facto, as a flaw in the activist policy and a grounds for disgagement.

4. Western leverage over the Republic is limited and declining at a time when the level of interests there continues to grow. Though Pretoria can be severely punished by western action, it probably cannot be controlled given the successful drive for self-sufficiency which the West, ironically, has encouraged. Direct superpower intervention is the limiting case. In these circumstances, the choice is not between supporting and abandoning a "losing cause" which is hanging by the thread of western decisions. Rather, the choices relate to how that leverage can be used for the continued pursuit of western interests, given the goals and will of the white minority.

5. In projecting the regional geostrategic environment of the 1980s, serious attention must be given not only to the facts of geography, natural resources and military power, but also to the political conditions that order them. South Africa's case demonstrates the profound effect of the political variable on the ability to the West to pursue its interests. In the past, the politics of white South Africa have limited formal western associations, but have not gotten in the way of tacit strategic collaboration and an active pursuit of western economic and resource interests. Moreover, the policies and political climate provided by the government have permitted western collaboration in developing South Africa to become the leading resource power of the Southern Hemisphere. Finally, the government's political orientation has effectively pre-empted hostile access to, or control of, this country's critically located and highly developed harbors, airfields, and internal transport and communications systems. In the coming 10-12 years, all of these factors are subject to change. Thus, political constraints could grow on western enjoyment of existing interests and access. Domestic instability could undermine the investment climate to the point that the government's capitalist orientation is offset by economic stagnation and disruptions in the capital market and labor supplies.

6. However, it must also be pointed out that alternatives to the existing regime are not more -- and perhaps less -- likely to provide a political climate conducive to the pursuit of western interests. Claims that SA's energy and non-fuel minerals endowment is unimportant to the West, and that such interests can be equally well pursued under an African controlled regime rest on highly debatable premises. The same conclusion applies to the argument that South African defense facilities will accrue to the Soviets only if the West drives the non-white population into Soviet arms by siding with the current regime. The basic problem with such arguments is that they underestimate the importance of the political conditions for mineral exploitation and the sensitivity of business investment decisions to foreign operating environments. One has only to look at trends in the flow of western minerals investments over the past decade to appreciate the role of politics. While it can be argued that other African mineral deposits have only begun to be studied and tapped, and could become far more important over the coming decade, the troublesome political climate in most Third World states may continue to hamper invest-

ment and exploitation. Proven South African reserves, in the meantime, are continuing tc grow at a rapid rate. Nor can US-South African minerals dependency be looked at in isolation from broader world economic trends. Cartelization of additional minerals on political/economic grounds would be more likely in the absence of a pro-western regime in South Africa. Similarly, European and Japanese industry will remain far more heavily dependent on mineral imports than the American counterpart, a factor which ought to weight in any calculation of strategic outcomes. Thus, the minerals case does not rest on a simplistic notion that the Soviets will take over South Africa's minerals and sit on them "when the whites lost control." It rests, like the strategic access and access-preemption case, on a considered judgment as to the political climate and imperatives of a western-oriented society versus those of an African society.

7. Finally, the effort to debunk South Africa's importance appears to rest on a questionable premise about transitions and the manner in which they will occur. No matter what the West does, South Africa's own transitions in future decades may not be smooth steps toward evolutionary reform. Change could be disjointed and violent. Population movements and boundary adjustments may occur. South Africa as a unity state and a single sovereignty may not survive the transition. Thus, potential losses to western interests -- economic, political strategic, humanitarian -- in the decade after 1985 could be enormous. These arguments do not call into question the earlier conclusion that the West must not become committed to defense of the status quo. They imply only that substantial losses are possible, perhaps likely in the late 1980s and 1990s. They, further, suggest that the problem would not go away if only the African majority could be given its rightful role in the country. Finally, they underline the need to recognize that white South Africans are the people who will lead South Africa to its nonmanifest destiny and the people whom the West must influence if it wishes to limit the damage.

POSTSCRIPT

"Intervening events between February and November 1977, have confirmed the broad lines of argument developed in this study. South Africa's threshold nuclear status has been confirmed, although the diplomatic events of August surrounding reports of an immediate nuclear test, do not provide a conclusive picture of a timetable for nuclear development. Pretoria's continuing effort to retain linkage with the western powers is clearly reflected in its supportive role in the Rhodesia settlement deliberations and its substantial concessions over the transition issues in Namibia. At the same time, the Vorster government has seized upon every opportunity to underscore its determination to resist external pressures for changes that most whites continue to perceive as fundamentally threatening; its determination reflects the underlying reality of white South Africa's ability to cope with pressure from outside the country, whose effects can be punitive, but not coecive. One is particularly impressed with the recurrent pattern of official policies which simultaneously heighten repression and chart new initiative. Less predictable nine months ago was the willingness of the western powers to escalate their pressure in response to internal South African actions deemed retrogressive or unacceptable -- and a reciprocal South African willingness to view external hostility toward apartheid policies and police measures as a challenge to national self-esteem and a focal point of political cohesion among whites. By year's end, it could be said that South Africa and the western world had entered a new era of misperceptions which will be counterproductive for both."

Soviet Interests and Capabilities in the South Atlantic Region: 1977-1990

by

Michael MccGwire

The South Atlantic covers 14 million square miles of ocean, stretching from the equator to the Antarctic Sea. It is flanked by Africa to the east and South America to the west, the ocean serving to separate the two continents, rather than join them.

To help grasp its dimensions, the main area of interest can be seen as a 3000-mile rhombus, with a NW/SE diagonal some 3500 miles long. The northern side runs from Cape Sao Roque in Brazil to the armpit of Africa at the head of the Gulf of Guinea, with the West African coast making up about half its length. The southern side is open sea, close to the roaring forties.* One can also envisage the South Atlantic as two main axes of movement, both of which funnel through the 1600 n.m. stretch of water which divides Brazil from West Africa. The major one runs NW/SE, serving the African coast, but more importantly, it links the North Atlantic with the Indian Ocean and provides access to and from Asia and the Middle East. The minor axis serves the coast of South America, and continues south to round Cape Horn, providing access to the South Pacific.

These two main axes of movement, which are splayed like sheer-legs, underline the fact that the South Atlantic is not a geostrategic entity in the manner of the Mediterranean, or the northern and southern regions of the Asian Pacific. Nor is it comparable to the North Atlantic, which despite its immensity is bordered by most of the developed world, and is bound by ties of alliance, culture and trade.

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*The southern side is some 500 n.m. longer than the northern one, forming a trapezoid, rather than a rhombus. But the latter's dimensions are easier to grasp and it is close enough for our purposes.

It is arguable that in strategic terms the South Atlantic is not a region at all, in the sense that events off South Africa need not affect the situation 4000 miles away off Cape Horn or Montevideo; this would not be true of comparable situations in the Mediterranean or the North Atlantic. In this respect, the South Atlantic most closely resembles the Indian Ocean, which has to be thought of in terms of (a) the main types of littoral - Southern Africa, Middle East, Indian sub-continent and S.E. Asia; and (b) the main axes of movement, which form a triangle joining the Cape, the Arabian Sea and the Indonesian Straits. Similarly with the South Atlantic, where South America and the various regions of Africa offer very different problems, while the NW/SE axis of movement has an importance all of its own. It is true that for purposes of command structure and logistic convenience, an external power may treat the Indian Ocean or the South Atlantic as single entities and establish a centrally located base to serve one or other region, as in the case of Diego Garcia. But this does not change the inherent nature of the region. One must guard against the tendency to ascribe a strategic coherence which does not in fact exist, because it leads to fallacies concerning power vacuums and the domination of sea areas.

The purpose of this paper is to assess the role of naval forces in protecting and promoting Soviet interests in the South Atlantic region. Before we can do this we must first consider certain conceptual aspects of maritime policy, and we must also identify Russia's foreign policy objectives, clarify the nature of her maritime and overseas interests, assess the role of various policy instruments, and review developments in the political and military environment. We can then turn to consider the maritime aspects of Soviet policy in the South Atlantic regions, and assess the Soviet Navy's potential role in the area.

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In the context of this paper, the sea has importance in two ways: (1) as a means of access to non-adjacent areas; and (2) as a source of natural resources. These two kinds of use can be labelled 'navigation' and 'exploitation'.

It is navigational use, and the access it provides to distant areas, which endows the sea with strategic

quality. Maritime strategy is about such use of the sea; using it for one's own purposes and preventing its use to one's disadvantage, in peacetime as in war. This navigational use breaks down into two main categories: (1) the conveyance of goods and people, and (2) the projection of military force against targets ashore.

The first category covers seaborne trade, which in a strategic context spells maritime communications. It also covers the movement of military cargoes in merchant ships, although this shades into the second category, particularly when a war is actually in progress. The shading is inevitable, since the military and commercial uses of the sea form a continuum. While we can identify what is purely military, there are few commercial cargoes which have no military value. For analytical purposes, therefore, it is impractical to distinguish between military and nonmilitary uses of the sea, except in the broadest terms, whereas the projection of force, and the conveyance of goods and people are functionally distinct.

The second category of navigational use has two forms: the traditional one of bringing force (actual or latent) to bear on coastal states; and the deterrent form of targetting distant land areas with nuclear weapons. At present only four countries can do the latter and the deterrent role is now embodied in missile-armed submarines, with units continually on station. Even fewer countries have the capability to project traditional military force to any distance from their shores. Several states have a limited capability, but effectiveness falls away sharply with range from home bases. Only the U.S.A. has a worldwide capability to project force ashore against substantial opposition and without some measure of local support. Present evidence suggests that the Soviet Union is not seeking to develop a comparable capability.

The other type of use, the exploitation of marine resources, is not strategic. In this case it is useful to distinguish between resources in the deep ocean areas, and coastal resources, which lie within 200 miles of shore or the limits of the continental margin, whichever is the greater. Competition for marine resources is a traditional source of conflict, but developments over the last twenty years mean that the exploitation of coastal resources now

involves issues of territoriality, rather than the right of capture. In the case of minerals, the high cost and relative vulnerability of offshore installations make it unrealistic to think of exploiting such resources without the explicit permission of the coastal state, or some form of de-facto annexation of territory. This is not so true of fisheries, where exploitation depends on smaller, mobile installations, but the element of territoriality remains, even though it may be more difficult to enforce.

For this reason, the exploitation of marine resources is best seen as an extension of normal commercial activities which are carried out ashore, such as agriculture or mining. A distant state gains physical access to these activities by the navigational use of the sea, and in the case of coastal resources, it acquires the right to exploit them through a process of commercial negotiation, diplomatic pressure or direct military intervention. This is no different than any other commercial involvement overseas. In the case of the deep ocean, the final rules for exploitation have yet to be decided, meanwhile the right of capture continues to apply to living resources and there is a moratorium on seabed mining. But the use of the sea for these purposes remains an extension of domestic activity, access to the resources being provided by the sea.

There is a third, instrumental type of use involving naval forces, whose purpose is either to (a) prevent or (b) secure the use of the sea. We all know that certain types of naval units also embody the capability for projecting force ashore, but the analytical distinction between the instrumental use of navies and the use of the sea to project force is worth preserving. It serves to emphasize that maritime strategy is wholly about the use of the sea, and only incidentally about the use of force at sea. Naval forces are only necessary to the use of the sea if attempts are being made to prevent it.

The ease with which use can be prevented depends on maritime geography and the type of use involved. Focusing first on the navigational use of the sea, we have to think in terms of waterways (defined as any stretch of sea used for passage), which can be described in terms of their geographic characteristics, lying somewhere on the continuum between narrow shallow waters and the deep ocean. Narrow

waterways, where ships must pass close to shore-based weapons, are relatively easy to obstruct, particularly if they are shallow and hence mineable. It is far harder to prevent passage across an ocean waterway, out of range of land and with opportunities for evasive routing. By the same token, different types of use involve different capabilities and lengths of time at risk. It is usually easier to interrupt a flow of merchant shipping, than to prevent the passage of a naval task force.

As a general rule, it is also easier to prevent the navigational use of the sea than it is to secure such use. This is partly because the means of preventing use are not limited to naval forces, and in narrow waters they include the simple blockship, the mine and a whole range of shore-based weapons. Naval forces are more important on the ocean waterways, the submarine being the most universal long-range weapon, but even here the task of preventing use can be shared by land-based missiles and aircraft and supported by satellite and shore-based surveillance systems.

When it comes to resource exploitation, the imbalance between the ease of preventing and securing use is even greater, because the activity is physically tied to a particular area. In the case of coastal resources this is combined with the preventive advantages that go with narrow waters.

If we now apply these analytical categories to the South Atlantic, we see that strategic access both to and within the area is good, with no natural choke points. There are no major offshore archipelagic formations, and a generally narrow shelf brings deep water close to the coastline of most states except Argentina. The region lies some 4000 n.m. from U.S. east coast ports (about 6½ days @ 25 kts.) and rather less than 5000 n.m. (about 8 days) from Soviet northern fleet bases. As an area from which to project deterrent force, western Russia can be covered from the Gulf of Guinea by Trident I. The eastern seaboard of North America can be reached by the SS-N-8 from the edge of the area, but much better coverage can be achieved by moving further north.

In terms of conveying goods and people, the most important route, which links the Indian Ocean to the North Atlantic, is a wholly oceanic waterway, with no narrow waters. In the north, the Recife "Gap" between West Africa and Brazil is some 1600 n.m. wide; to the south, ships can swing 1000 miles clear of the Cape if need be. Passage through narrow waters is only required when coasting, or in the terminal stages of a voyage to a destination in the region.

By comparison with some ocean areas, the South Atlantic is not particularly well endowed with natural resources. Although manganese nodules have been found on the deep seabed, the density of deposits and the quality of content compare unfavorably with those to be found in the Central/North Pacific basin, and are unlikely to be commercially useful in the foreseeable future.

The prospects for offshore oil and gas are largely unproven. Africa has a narrow continental shelf along most of its coast, and only Nigeria (90 Mn. tonnes in 1975) and Gabon (10 Mn.) are known to have substantial reserves, and commercial prospects for offshore exploitation. On the western side, both Argentina (20 Mn.) and Brazil (8.4 Mn.) are oil producers, and Argentina has a very broad continental shelf. Off the southern part of the country the 100 fathom line runs 400 miles off shore, tapering in to the coast north of Rio de Janeiro, while the deeper Falkland Plateau extends more than twice as far out to sea.

Distant water fishing fleets are active off the African coast, having been chased away from Argentina and Brazil, but this activity is due in large part to the absence of any well-developed indigenous fishing industry. In the deep ocean stretches, the wide-ranging tuna roams the sea, the other major resource being the antarctic krill, which is to be found in the southern latitudes of the Atlantic and Indian Oceans.

The sources of conflict over offshore resources are many. Argentina disputes the ownership of the Falkland Islands and will also be reluctant to accept a 200 mile limit to her continental shelf. On the African side we have a large number of newly independent states, and in addition to the claims of the land-locked countries, there are likely to be disputes over the alignment of offshore boundaries. However, all these are best seen as extensions of frontier disputes on land, and from a great power perspective, they have no specific maritime significance.

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On the basis of the past sixty years experience, we can postulate in crude terms that the Soviet Union has three main foreign policy goals:

1. To avoid major war, while maintaining a posture to fight and win, should war come.

2. To ensure the retention of power in Russia by the Communist Party.

3. To increase the Soviet Union's share of world influence.

These objectives are at times in conflict and at others they reinforce each other. The first two are the most urgent and take priority over the third, which is seen as part of a historical process.

In seeking to avoid major war, the Soviet Union did not adopt the concept of "nuclear deterrence" which emerged from Western strategic theory, but continued to rely on the capability to repel (or at least absorb) any attack, and then go on to win the subsequent war. Soviet military doctrine did not separate out the idea of deterrence from the general concept of defense, and their emphasis on defense through war fighting was central. While the West saw nuclear weapons primarily as a means of threatening "unacceptable damage" to Russia, the Soviet Union saw them as adjuncts to its war fighting capability. When the West thought in terms of credibility, argued about the merits of counter force or counter value, or worried about stabilizing and destabilizing developments, the Soviet Union thought in terms of achieving victory, should war be forced upon them. Such a viewpoint has obvious implications on the meaning of terms like "sufficiency" and the scale of military requirements.

The two sources of major war lie in the West and in China, and Russia must be prepared to fight both at the same time. Throughout the 1960s, the danger of war with the West was seen as substantial. There had always been certain inconsistencies between U.S. pronouncements on national security and U.S.weapon procurement policies, leading to serious doubts in Moscow concerning American intentions and her readiness to risk nuclear war. During most of the Kennedy Administration, the Soviet leadership was genuinely concerned that the United States was trying to acquire the capability for a disarming first strike, if only to be able to negotiate "from a position of strength."

As a result of SALT and various developments in U.S. domestic and foreign policy, it seems likely that Soviet assessment of the dangers of war with the West have been substantially modified. I suspect that an important byproduct of the protracted negotiations was to give an extended group within the Soviet leadership a clearer understanding of the U.S. policymaking process and of U.S. intentions (past, present and future) and

likely behavior in differing circumstances. A growing number of the Soviet military-political hierarchy are likely to have been persuaded that the U.S. leadership had never thought seriously in terms of initiating nuclear war against Russia. And that whatever U.S. policy might be towards the use of military force to secure American interests around the world, its leaders remained seriously concerned about the dangers of nuclear escalation. In other words, there would have been a progressive, but fundamental, shift in Soviet threat perceptions. And this shift would have been reinforced by indications during the early seventies that America's "will to empire" appeared to be faltering.

While the immediate danger from the West might have waned, the danger from the East appeared to be waxing. The winter of 1968-1969 saw the winding down of the Chinese cultural revolution. At the 9th CCP Congress in April, there emerged what the Soviets perceived as a military bureaucratic elite, which was basically antagonistic to Russia, with Lin Piao, the originator of the "People's War" thesis, in the ascendent. Tensions rose, there were several border incidents along the Ussuri River, and the Soviets leaked their internal debate on the advisability of carrying out a preemptive nuclear strike against China. Matters were brought under control in October 1969 by the establishment of the permanent Soviet-Chinese ambassadorial talks, but the Russians had been seriously worried. The Soviet Union began the buildup of its forces in the border regions with China and the relationship moved beyond rivalry for world influence to attempts at physical containment. However, Brezhnev's proposal for an Asian collective security system evoked little response, while Nixon's Guam doctrine limited the scope of U.S. involvement in future Asian conflicts. The Soviet Union sought to extend its containment around China's southern borders, building up its relationship with India and continuing eastward through Burma and Indochina to the sea. And then, in the summer of 1971, President Nixon visited Peking.

In the latter half of the seventies, the Soviet concern to avoid major war is undiminished, but their appreciation of the dangers of such war is likely to have changed. While war with the West remains the most serious contingency, it is probable that they now put a lower value on the likelihood of such a war and on the dangers of escalation. Conflict with China, while relatively less serious, is probably now seen as the more likely event.

The objective of avoiding major war works directly in support of the second objective of ensuring the Communist Party's retention of power. The Soviet leaders are conscious that Russia is unlikely to be an exception to the dictum that war is the breeding ground of revolution. Besides avoiding war, the second

objective is served in three main ways, each of which have foreign policy connotations: (1) maintain the ideological integrity of the population, (2) ensure a steadily improving standard of living at home, and (3) retain the leadership of the world communist movement. Concern for ideological integrity runs counter to the arguments which favor detente with the West, since the latter encourages complacency and backsliding. This concern also means that Moscow is unable to permite ideological diversity among the European satellites, and requires that their compliance with various ideological norms be enforced, even at the cost of jarring world opinion. The need to ensure an adequate standard of living favors detente, and the opportunities for Western investment and technological knowhow which go with it. And finally, leadership of the world communist movement requires an assertive policy against the evils of imperialism, with China standing ready to highlight Soviet deficiencies in this regard.

Leadership of the world communist movement is also an important factor in the Soviet Union's fight for world influence. In terms of this objective, Russia is competing with both China and the United States, although officially the struggle is between two social systems, with capitalism as the enemy. Such competition tends to be zero sum, and effective policies can be designed to build up Soviet prestige and influence, or to undermine established Western positions, or ideally to do both. Within the first category, the Soviet Union's role as the showcase of communism is important. If this role is to be successfully sustained, it requires that the standard of living in Russia be somewhat comparable with that in the capitalist world, and provides another argument for continuing improvement in this area.

In reviewing the overlap between the three main foreign policy objectives, the salience of standard of living as a common factor is noticeable. Its importance is evidenced by the relative priority given to overseas activities which serve this end, such as the earning of foreign exchange, the import of technology and the harvesting of fish protein. This is not surprising, since the purpose of the state is to promote domestic welfare, however it may be perceived. The Soviet Union is no different than other countries in this respect, except perhaps in its concern for national security and emphasis on military strength, which seems excessive to Western eyes.

However, from Russia, the view is rather different, particularly in the longer term. Aligned against her, Russia sees the United States, Japan, the EEC and China, and the latter's military strength will certainly increase. Russia's European

satellites are doubtful allies and Soviet military leaders must be constantly concerned about the lines of communications to their western front, and about the security of the rear. Meanwhile, the nationalities problem within the Soviet Union remains unresolved, and the requirement for internal security forces is unlikely to diminish. Given Russia's recent history, the forces aligned against her, and her present ideological bent, Soviet leaders have reason to place continued emphasis on the physical security of the homeland.

The military capability which results from these perceptions is impressive, if not daunting, but in assessing the implications, certain points should be borne in mind, Firstly, financial comparisons are not very meaningful, since the military share of the Soviet budget appears to be defined in terms of the physical and human resources (including production facilities), allocated to defense production; these remain fairly constant,* but since military goods are at the high value end of the economy, the defense share of the total budget must rise. Secondly, the Soviet procurement process is a continuous one, involving the updating of existing systems and the incorporation of new developments on a progressive basis; in contrast, the U.S. procurement system is cyclical, and this distorts long-term comparisons of capability. And thirdly, the Soviet Union has learnt from hard experience that, given the political will, the United States has the technological capacity to develop and bring into operational service, new military systems which can effectively outflank Soviet countermeasures. It is somewhat a case of the tortoise and the hare, and in view of their ingrained perceptions, it is not surprising that the Soviet leadership allocates a constant and substantial share of production resources to the defense sector.

These heavy expenditures on military procurement are in direct competition with rising living standards, and although there has always been a consensus that a successful national policy is founded on a strong defense capability, there has also been argument about how much was enough. It is clear that strategic parity with the United States was a necessary step in order to deny America the advantage of always "negotiating from a position of strength." What is much less clear is the importance the Soviet Union attaches to the role of military power outside the arena of strategic confrontation, and the degree of urgency and priority they accord the competition of world influence.

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*Major changes tend to reflect shifts in threat perception. Examples include (a) the reallocation of warship building facilities to civilian ship construction in the middle fifties; (b) doubling the nuclear submarine building capacity following the introduction of long-range carrierborne nuclear strike aircraft; and, (c) the threefold increase in missile production in the mid-sixties, following the authorization of the Minuteman program by Kennedy.

Moving on from Russia's foreign policy objectives to her maritime and overseas interests, these are best considered under the three functional categories of strategic defense, domestic economy and influence building.

Starting with strategic defense, it is worth recalling that although Russia is predominantly a land power, for the last 200 years or so her navy has generally been the third or fourth largest in the world, although its effectiveness fluctuated widely. Russia used naval forces in the 18th century to gain control of her Baltic and Black Sea coasts, but increasingly thereafter, she found herself confronting predominantly maritime powers. In the Black Sea, Britain used her naval strength to prevent Russian gains at the expense of the failing Ottoman Empire; Britain intervened directly in the seventh Russo-Turkish war (1853-1856, Crimea) and the peace treaty forbade Russia a Black Sea Fleet; in the eighth Turkish war (1876-1877), British pressure ensured that Russia would not gain control of the straits. In the Far East, Russo-Japanese rivlary culminated in a disastrous war, and the loss of two Russian fleets. In 1918, the Western navies provided essential support to the forces of counter-revolution. And in 1945, the Soviet Union lacked a battleworthy fleet, while its likely opponents were the "traditional maritime powers," who had recently demonstrated their capacity to project continental scale armies over vast distances of sea. It is therefore not surprising that Russia's naval policy was dominated by the requirement to defend four widely separated fleet areas against maritime powers who could concentrate their forces at will.

The major change since 1955 has been the radical increase in the range and devastation of seaborne weapon systems, which can now directly threaten the Russian heartland from distant sea areas. If the Soviet Navy was to continue discharging its mission of defending the homeland, it had to move forward in strategic defense. During the latter half of the fifties, the threat was limited to carrier aircraft, which the Soviets planned to counter primarily with nuclear submarines,* backed by shore-based aircraft. But by the early sixties the extent of the Polaris threat had become clear, and the policies and operational concepts which were evolved to meet this very different problem, overlapped those for countering the carrier.

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*Thereby outflanking the West's control of the surface. It was this requirement which prompted the decision to double the nuclear submarine building capacity to ten units a year.

In very crude terms, there were four elements to the final policy mix: (1) the initiation of medium- and long-range R&D to discover some means of countering submarine launched systems; (2) the reversal of priorities in configuring nuclear hull/propulsion units, thereby increasing SSBN construction to six a year (this in response to the threat of disarming strikes); (3) the forward deployment of available forces to target Western strike carriers and to develop operational techniques for area ASW; (4) the change in surface-ship characteristics from anti-surface to anti-submarine systems.

The shift to forward deployment took place in two stages: 1961-1967 saw the movement into the South Norwegian Sea and then the Eastern Mediterranean; 1968-1972 saw the movement into the northwest quadrant of the Indian Ocean, the Caribbean and West African waters. The first stage covered the immediate threat from carrier aircraft and Polaris A-1; the second stage covered the extended threat from the A-3 and Poseidon systems, and the lines of communication between the Mediterranean and the east coast of America. The timing of the second stage appears to have been largely conditioned by the availability of ships, but may also have reflected decisions taken in the light of the 1967 Arab-Israeli war. The shift to forward deployment was predicated on naval shore facilities being available in the forward operating areas, and the possibility of providing open ocean support appears to have been discarded at a fairly early stage. Countering forces were not limited to the navy and it seems likely that shore-based systems, including satellites and ballistic missiles, were taken into account from the start.

One may well ask why so much significance was attached to countering seabased nuclear delivery systems, when there was little chance of developing an effective defense against land-based weapons. There are three answers. First, it appears that the navy was not in fact allocated many additional resources to help meet this qualitatively new requirement, and had to work within its existing shipyard capacity. Second, the Soviets do not believe in allowing any threat to the homeland a free ride, as is shown by their persistant efforts in the field of air and missile defense. Third, and most important is the fact that, in the event of war, seabased systems can be held back from the initial exchange and be used to influence the final outcome of the war.

Communist theory defines "world war" as a fight to the finish between two social systems. In such circumstances, victory is synonymous with survival which gives Western Europe a very special place in Soviet military strategy. In the initial stages of such a war, the extent to which Western Europe

is devastated will largely depend upon the Soviet choice of weapons. It is the potential availability of this adjacent and partly undamaged area on which to rebuild the Socialist system, that has allowed Russia to plan on the assumption that if "world war" were to be forced on her, it need not imply mutual suicide. And it was in this context that the major shift in the U.S. emphasis towards seaborne strategic nuclear weapons was so distrubing in 1961. These weapons were the only ones which, if withheld, would have some certainty of surviving the initial exchange and remain available to deny Russia the use of Europe to rebuild her social system. The simplest way of countering this threat to the ultimate victory of the Soviet system was to remove the U.S. option of withholding these weapons, by making it unlikely that they would, in the event survive. This required that they be attacked at the outbreak of war and meant that Soviet forces would have to be within weapon-range contact at the vital moment; i.e., they must already be deployed in the sea areas of threat.

It is sometimes argued that Polaris could not be the real reason for the Soviet Navy's shift to forward deployment, because the Russians must realize that it is impossible to deploy an effective counter to Polaris, and assertion which relies upon Western statements of the system's invulnerability. This objection ignores the fact that since 1963 the Soviet Union has rated the destruction of Polaris submarines as the navy's "most important task." It ignores the many examples of Soviet willingness to expend substantial resources where the defense of the country is at stake, on projects where the chances of success are small, and the return on success is low. It ignores the Soviet Navy's own painful experience of the success of Western anti-submarine measures, which would have given them a rather different understanding of the odds in 1963. And it also ignores the growing evidence that the Soviet Union has devoted considerable research and development to her attempts to solve this problem.

Meanwhile, it seems increasingly certain that the shift to forward deployment in the form it took was an interim expedient (albeit extending fifteen-twenty years), while the Soviets sought to develop some more effective counter. This is suggested by (1) the reluctance to allocate additional shipbuilding capacity, (2) the unwillingness to provide effective open-ocean support facilities, (3) the heavy operational reliance on overseas bases with no political security of tenure, and most important (4) the reports of new systems and vehicles which are currently under development.

Trident will double the range of the Polaris/Poseidon systems, hence (to quote Gorshkov), "the front of operations will be expanded accordingly. . .[and] the corresponding growth in the spatial dimension of operations against naval strategic nuclear weapons is also quite clear."[1] Depending on the nature of the Soviet response, this may mean new requirements for support facilities in distant sea areas.

A second maritime interest which comes under the category of strategic defense, stems from the possibility of war with China. Russian military planners must allow that in such an event the trans-Siberian railway would be cut, and supplies to the Far East front would have to move by sea. The shortest route is through the Red Sea and the Malacca Straits and the Soviet Union has a vital interest in its unobstructed use. Passage via Panama or the Cape is 147 per cent and 164 per cent as long (respectively), and such delay could make the difference between victory and defeat.

The third interest under strategic defense is access to certain key raw materials which have to be imported, such as tin and fluorspar (about 25 per cent), aluminum (about 35 per cent), and tungsten and barite (about 40 per cent).[2]

Turning next to the maritime and overseas interests which stem from the requirements of the domestic economy, the best known is the need for fish protein. Fish products are reputed to represent some 20 per cent of Soviet protein intake (17 kg. per head in 1975), and in 1962 the Soviets claimed that fish could be produced for 75 per cent of the capital and 25 per cent of the labor required for equivalent beef production. Distant water fisheries represent 90 per cent of the total catch.[3]

The distant exploitation of hydro-carbons and deep sea minerals is of no immediate relevance to the Soviet domestic economy. Russia has extensive continental shelves, about 75 per cent of which have good oil and gas potential, although 70

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[1] S.G. Gorshkov, "The Development of the Art of Naval Warfare," United States Naval Institute Proceedings, June 1975, translated and reprinted from Morskoj sbornik, No. 12, 1974, p. 56.

[2] Annual Defense Department Report, FY 1978, p. 17.

[3] M.A. Kravanja, "The Soviet Fishing Industry: A Review," pp. 450, 453 in Soviet Oceans Development prepared for Senate Committee on Commerce and the National Ocean Policy Study, U.S. GPO, October 1976.

per cent of these areas lie in the Arctic.[4] Until recently the offshore industry has been neglected and it seems unlikely that domestic interests will lead to Soviet involvement in operations overseas. Much the same reasoning applies to hard minerals. Although the Soviet Union is placing an increasing emphasis on the extraction of minerals from seawater and the development of marine mining, these activities are concentrated within her enclosed and semi-enclosed seas and the areas of her continental shelf and economic zone, where extensive commercial deposits are to be found. The Soviet Union does however have a longer term interest in exploiting the resources of the deep seabed, and has been engaged in manganese nodule research and prospecting since the 1950s, although there has been little concern for commercial exploitation.[5] Given the extensive resources lying within Russia's border, it seems likely that this is partly long-term insurance and partly reflects a concern that the Soviet Union should not be excluded from what looks like becoming a major world resource.

Trade and Aid make direct contributions to the Soviet standard of living. Soviet economists recognize the advantages of the international division of labor, and increasingly, aid has been seen as an alternative to domestic investment, with repayment taking the form of imports in kind. "Integration of aid and trade into the planned development of the USSR and some of its major economic partners has proceeded apace since 1965" and there is a growing use of aid as a means of serving Soviet economic needs.[6]

A third and very important maritime interest is the earning of Foreign Exchange, particularly hard currencies. A major reason underlying the buildup of the Soviet Merchant Fleet was the need to save (and earn) foreign exchange.[7] The fishing industry also makes an important contribution in this respect and

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[4] J.P. Riva, "Soviet Offshore Oil and Gas" in Soviet Oceans Development, op. cit., pp. 479-500.

[5] J.E. Meilke, "Soviet Exploration of Ocean Mineral Resources" in Soviet Oceans Development, op. cit., pp. 501-507.

[6] I.K. Valkenier, "Soviet Economic Relations with the Developing Nations" in The Soviet Union and the Developing Nations, R.E. Kanet (ed.), Johns Hopkins University Press, 1974, pp. 219-220.

[7] See R.E. Athay, "Perspectives in Soviet Merchant Shipping Policy" in Soviet Naval Developments, Michael MccGwire (ed.), Praeger, 1973, pp. 93-108.

in 1974, exports exceeded imports by $142 Mn.[8] Aid and trade both earn (or save) foreign exchange, both directly and as an indirect means of acquiring hard currency. For example, aid repayments in the form of oil and gas release supplies in European Russia for export to the West in exchange for hard currency, or (in the case of gas) for scarce industrial products such as large diameter pipes. These particular examples do not involve overseas suppliers, but there is discussion in the Soviet Union of how imports from the Third World can serve the same purpose.[9]

Lastly, we turn to the maritime and overseas interests which stem from the requirements to increase Soviet world influence and to diminish that of China and the West. Influence building is an extremely complex and little understood phenomenon. In its most direct state-to-state form, it used to be seen as a relatively simple process of meeting a country's (or regime's) perceived needs, thereby encouraging a situation of dependence, part psychological (gratitude), part material (economic and political). Although such a naive approach is now behind us, we are little clearer as to what is involved, and indeed, of who influences whom in such bilateral relationships. In the early years of her approach to the developing countries, Russia was further hampered by a doctrinaire perception of the problem, but since the early sixties, her policy has become increasingly pragmatic. Whereas the Soviet attitude toward the Third World used to be ideological and universalist, it is now more realistic and particularist.

Influence building (and/or diminishing) can be thought of in terms of the target(s) of the policy, and of the means employed to achieve the objective. The latter can be usefully discussed under four major headings: (1) improvements to economic welfare, which includes the whole range of inducements and interrelationships involved in the process of trade, aid and investment; (2) political and military support, ranging from diplomatic activity to direct military involvement; (3) ideological indoctrination, either by means of mass propaganda, or focused

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[8]Kravanja, op. cit., p. 454.

[9]Valkenier, op. cit., p. 222.

on elites in the course of secular training and education programs; and (4) image creation through demonstrations of advanced technology, high standards of living, military power or the ability to shape events.

The targets of infuence building/diminishing policies also divide into three main types: (1) governments in power, (2) opposition groups and "liberation" movements, and (3) China and the West. The Soviet Union now appears to recognize that on balance, support for the government in power yields the more certain dividends, although this does not prevent them from talent spotting amonst emergent factions. Aid to "liberation" movements is more speculative and in many cases the primary justification is to gain international merit, with the accession to power of their clients being seen as a possible bonus. Meanwhile, with the important exception of Southern Africa, the opportunities to support genuine anti-colonial liberation movements are now few, and increasingly it is becoming a matter of picking sides in a traditional civil or interstate war.

In many cases objectives (1) and (2) may also serve (3), but the requirement to diminish Western influence in particular could generate its own policies. One such target is the Western-dominated international trading and financial structure, which is already under attack at the United Nations. Despite being seen as a "have" nation, Russia should be able to construct an effective alliance with the developing world on this issue, although her record at the Law of the Sea Conference illustrates her reluctance to compromise her more immediate interests.

Another conceivable target is the West's dependence on the supply of raw materials from overseas, either by manipulating supplies at source or by interfering with their shipment. We know that Russia encouraged the Arab states to use the "oil weapon" in 1973, but the longer-term outcome of this particularly favorable opportunity illustrates the difficulties of third party manipulation. It is certainly possible that prices may be jacked up, but for most countries the withholding of uspplies would be extremely difficult. Russia is not Saudi Arabia and lacks the economic strength to subsidize such a policy, or to corner the market in key commodities. As for interfering with the free passage of shipping, it is extremely hard to identify circumstances in which it would be in the Soviet Union's interests to initiate commerce war at sea, outside the conditions of general war.

Looking back over this review of Russia's maritime and overseas interests, we can see that the list is long and not surprisingly several of the individual interests are in conflict, raising questions of which take priority. One area of conflict involves the support of national liberation movements, the interest in East/West detente, concern for the domestic economy and the competition with China. First we should note that theoretically the Soviets see no contradiction between seeking detente and supporting liberation movements, and have made this quite clear from the beginning. The sense of betrayal in the West on this score stems from wishful thinking and self-deception. However, although the national liberation movement is one of the three streams in the world revolutionary process, it "is not viewed as an organic part of the socialist revolution. It is an ally of the international communist movement and the socialist commonwealth, but clearly less significant in the 'world-wide struggle against imperialism'."[10] Certainly, the Soviet Union will automatically tend to support such movements, but one might suspect that the increasing emphasis on this role since 1965 stems as much from the competition and criticism from China as from a heightened concern for the fate of the oppressed. Meanwhile detente remains important to the Soviet Union, not only for what it can bring in terms of Western investment and technology, but also because consequential arms limitation would "release considerable resources for constructive purposes."[11] Policy will therefore be dictated by the particular circumstances, including the extent of Soviet involvement.

In Angola, for example, the Soviets had been supporting the MPLA since 1962 and continued to provide relatively modest support in the internal struggle for power which followed the announcement of forthcoming independence, stepping it up when U.S. financial support was channeled to one of the opposing groups. Russia reacted much more vigorously when the highly successful intervention by a small South African force threatened to drive her proteges from the field, and helped to bring Cuban troops armed with Soviet weapons into the field, which turned the battle in favor of the MPLA. In the circumstances it is hard

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[10] D.S. Papp, "National Liberation During Detente: The Soviet Outlook," International Journal, Vol. 32, No. 1, 1976/1977, p. 87.

[11] L. Brezhnev, quoted in 24th Congress of the CPSU, Novosti Press, Moscow 1971, p. 34. The reference is to the effects of the SALT Treaty, and forms part of a general discussion on the desirability of disarmament and of regulating the situation in Europe.

to see how the Soviets could have done otherwise. It is true that the West and certain African states wished to see another form of government emerge in Angola, and that two African leaders secretly encouraged South African intervention. But against that, South Africa's intervention had swung many states onto the MPLA's side, and to have had deserted their clients at such a crucial juncture would have had incalculable effects on Russia's image and prospects throughout Africa.

The extent to which concern for detente will constrain Soviet actions will depend on their appreciation of the interests at stake on both sides. The political coup in Lisbon and the decision to grant independence to Portugal's African colonies was welcomed by both Russia and the West, but Russia had been working to that end by supporting one faction of the "freedom fighters" whose guerilla warfare was mainly instrumental for the reversal of policy, while the Western alliance had declined to take any positive action. Given such circumstances, plus the general neglect by America of Black African aspirations, it would have been hard for Kissinger to conjure up an impression that "vital national interests" were at stake, even if Congress had been willing to support him. An example of detente overriding other interests is offered by Leonard Schapiro, who argues that the present rift between Moscow and the Eurocommunists stems from the Soviet concern that over-rapid communist success in Western Europe might alarm U.S. opinion and reverse detente. In such circumstances Soviet leaders are prepared to sacrifice the long-term gains of communist advances in France and Italy (and the revolutionary aspirations of the parties concerned) for the short-term material benefits of detente.[12]

A second area of conflict between interests involves, on the one hand, the more assertive aspects of influence building such as the support of client states with combat supplies, military demonstrations and perhaps interposition forces, and, on the other hand, the concern to avoid major war, while maintaining the posture to fight and win one if necessary. The assertive support of client states will draw forces away from their operational alert stations and bog others down in peripheral activities. And this at a time when international tension would inevitably be high, with the possibility of direct confrontation with U.S. forces, leading to conflict and possibly escalating to all out war.

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[12]Leonard Schapiro, "The International Department of the CPSU: Key to Soviet Policy," International Journal, Vol. 32, No. 1, 1976/1977, p. 54.

The extent to which these interests are seen by the Soviets to be in conflict will depend in large part on their assessment of the likelihood of escalation and the dangers of nuclear war. Although current Soviet force structures reflect past perceptions of threat based on worst case assumptions of American intentions, we have seen that in the period 1969-1973, there may have been a reevaluation of the threat of general war with the United States. Possible evidence of such a re-evaluation can be found in the wide-ranging internal debate which took place during this period, and seems to have extended from the allocation of resources within the economy to the role of military force in pursuit of international goals; from the likelihood of nuclear war and its nature to the effects of peaceful coexistence on internal stability and ideological commitment; from the dangers of economic dependence on the West to the role and mission of the different branches of the armed forces.[13] A more specific indication is the apparent downgrading of the relative importance of the maritime support facilities in Egypt in the period 1971-1973, and I believe that the precipitating cause for the publication of the "Gorshkov series" of articles, was the argument about whether or not to withdraw Soviet military units from Egypt.[14] Throughout the sixties, the Soviet Union had clearly attached great importance to gaining access to these support facilities, their availability in 1967/1968 produced a sharp rise in the operational effectiveness of Soviet naval forces in the area, and the urgency of this requirement may have been a contributing cause to the 1967 Arab-Israeli war.[15]

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[13]For the existence of such a debate see M. Shulman, "Trends in Soviet Foreign Policy" in Soviet Naval Policy, McCGwire et al. (eds.), Praeger, 1975, pp. 8-10; J. Erickson, "Soviet Defence Policy and Naval Interests," ibid., p. 60; L. Schapiro, op. cit., p. 45. A listing of opposing attitudes is given in Annex A of McCGwire, "The Overseas Role of a Soviet Military Presence" in Soviet Naval Influence, McCGwire and Mcdonnell (eds.), Praeger, 1977, pp. 49-53.

[14]For the full argument see my "Naval Power and Soviet Oceans Policy" in Soviet Oceans Development, op. cit., pp. 124-126.

[15]See my "The Mediterranean and Soviet Naval Interests" in Soviet Naval Developments, op. cit., pp. 346, 354-355, and G.S. Dragnich, "The Soviet Union's Quest for Access to Naval Facilities in Egypt Prior to the June War of 1967" in Soviet Naval Policy, op. cit., pp. 237-277.

And yet, by 1971-1972 the Soviet Union was prepared to hazard this access in pursuit of other interests.[16] Downgrading the relative importance of these support facilities may mean that the Soviet Navy's strategic mission in the Eastern Mediterranean is also seen as relatively less important, and may reflect a changed appreciation of the danger of nuclear war which could be accompanied by a greater readiness to divert forces to non-war-related tasks.

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Turning next to the instruments of policy designed to protect and promote these overseas interests, our primary concern is with the maritime aspects in general and the Soviet Navy in particular. But first we need to review the range of instruments available to the Soviet Union. We can then look at the role of a "Soviet military presence" overseas, before considering whether the Soviet Union has a coherent Oceans Policy, and finally turning to the contemporary role of the Soviet Navy in peace and war.

There is a very wide range of foreign policy instruments available to the Soviet Union, including diplomatic, political, economic, cultural, subversive and military. We have seen the role of trade, aid and investment and it can be argued that a well-coordinated economic program has in many respects replaced political penetration as a means of Soviet influence-building.[17] Nor is the sea the only means of providing access to distant parts. Although it remains the most economical (and only practical) means of shipping vast quantities of goods and people over long distances for sustained periods, and the only method of transporting really heavy and bulky objects, there have been tremendous advances in aircraft ranges and payloads. The Soviets have established a network of air routes around the globe, helping developing countries with airfield construction and setting up national airlines. This facilitates the rapid supply of relatively large and heavy items, including major types of combat equipment, to most parts of the world.

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[16] For the full argument see "The Overseas Role. . . .," op. cit., pp. 42-44.

[17] E.K. Valkenier, op. cit., p. 236.

An increasing role for a "Soviet military presence" in actively opposing imperialist aggression in various regions of the world was announced at the 21st Party Congress in March/April 1971. In Military Force and International Relations, a book which was clearly linked to the decisions of the Party Congress, V.V. Kulish of the Institute of World Economics and International Relations (IMEMO) discussed the question of a "Soviet military presence" at some length, and in terms which clearly implied direct intervention by Soviet forces.[18] It would seem however that this was only one stage in a debate which took place between 1969 and 1973 concerning the use of armed forces in support of international goals.

The origins of the debate are still obscure, but it was probably encouraged by the change in threat perceptions engendered by the SALT negotiations and other moves towards detente, which are likely to have had two main kinds of effect. On the one hand, there would have been those who saw this as grounds for lowering tension, for reducing expenditure on defense and for the reallocation of resources to the civilian economy. And on the other, there would have been those who saw new opportunities for a more assertive policy in pursuit of the Soviet Union's international goals, who called for a greater readiness to risk direct confrontation with the United States in distant parts of the world, and rather than reduce defense spending, sought at the very least to reallocate resources so as to provide the means for supporting a more assertive global policy. In the middle would have been those straddling the fence, seeking to have the best of both worlds. Meanwhile, there would remain the unconvinced, and these might well have made up the great majority of the military establishment, who would doubt whether the threat had in fact changed, and would continue to press priority for the direct defense of the Soviet Union and to argue the dangers of direct confrontation and of entangling overseas adventures.

It appears that in 1969, under pressure of the rapidly deteriorating situation in Egypt and after a finely balanced debate, the political leadership agreed to commit Soviet armed forces overseas, thus taking the first step down the road of a traditional Western-style policy towards the projection of military power. This major policy decision was followed by the deployment of Soviet air defense systems to Egypt in the spring of 1970. It would appear that, as events unfolded and as the costs and implications of such involvement became clearer, the

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[18] V.V. Kulish, Voennaya Sila i Mezhdunarodnye Otnoshenniya (Moscow 1972), pp. 135-137; JPRS translation No. 58947, 8 May 1973, pp. 102-105.

arguments of those who opposed the shift in policy were strengthened, until they were able to reverse the deployment decision. However, the final policy on the role of a "Soviet military presence" remained undecided, and it seems that the debate continued for a further twelve to fifteen months until a compromise was reached. By May 1973, it had been decided that direct Soviet involvement overseas would be limited to the provision of advisors, weapons and strategic logistic support, the combat role being delegated to the Soviet-equipped forces of "revolutionary" states such as North Korea, Vietnam and Cuba.[19]

The outcome appears to be a policy which ensures the Soviet Union the best of both worlds; namely, being able to affect the outcome of an overseas conflict with direct battlefield support, while ensuring that political commitment and liability remain strictly limited. This is achieved by (a) facilitating the arrangements and providing the lift to bring co-belligerent forces to the zone of conflict; (b) ensuring that the client state or regime receives adequate military supplies in the course of the battle; and (c) remaining silent about Soviet involvement until success is achieved. The task of "countering imperialist aggression" in overseas areas remains on the books, but it is one of limited liability and political commitment.

In terms of force projection, the major instruments of this policy appear to be the merchant fleet and the military and civil air transport fleets. The Soviet Navy has, however, made some contribution, as for example the sealift of Moroccan troops by landing ship to Syria in April and July 1973, the use of landing ships to ferry military supplies from the Black Sea to Syria during the October 1973 war, and the use of the landing ship based on Berbera to move supporters of the Dhofari rebellion to Oman.

The next question to be addressed is whether or not there is some overall oceans policy designed to promote some long-range international goal, by coordinating the plans and operations of the various ocean users. These include naval combatants and auxiliaries, space support ships, the merchant and fishing fleets, and the various oceanographic research organizations, and we must distinguish between the details of operational and organizational control, and the more significant question of how policy objectives are set.

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[19]For the full evidence and supporting argument see "The Overseas Role of a Soviet Military Presence," op. cit.

We see that on the one hand, each user is more or less organizes along military lines; each comprises a more or less disciplined body of men and women. In each case operational control rests either with the respective ministry in Moscow, or with subordinate agencies such as the naval fleet headquarters, the merchant shipping lines and the fishing fleet headquarters. And finally, all ships, military or civilian, must report their position and intended movements daily. Because of this centralized structure and the maintenance of a world-wide shipping plot, it is easy for Moscow to take full operational control of all Soviet-flag vessels in time of crisis, or to divert individual ships for special purposes such as evacuation or replenishment.

On the other hand, each ocean-user has his own distinct set of short- and long-term objectives which only overlap with the others' at the periphery. These different objectives have evolved through quite different processes, at quite different times, to meet quite different needs. They give no evidence of being the result of some master plan. In strategic as well as in tactical terms, each user appears to operate his fleet (conduct his business) so as to serve his own particular purposes. Meanwhile, ocean users are in competition with each other for national resources in several sectors of the economy. And while we cannot be certain how allocations are decided, the long-term type-specialization of shipyard facilities suggest an intra-bureaucracy bargain rather than a flexible master plan.[20]

These conclusions, drawn from the evidence of past performance, are supported by an analysis of the underlying political processes. In a recent study of bureaucratic interests and interactions in the making of Soviet oceans policy, Terese Sulikowski concludes that the latter is not the product of a centralized agency or decision-making process, nor is it well coordinated. The decision-making is fragmented, with various institutions commanding marginal spheres of authority, and most issues are resolved through standard operating procedures of the bureaucracy. Policies are frequently the result of bureaucratic infighting, or of institutions' independent and uncoordinated activities.[21]

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[20]For a fuller chronological review of how the main objectives evolved, see "The Navy and Soviet Oceans Policy" in Soviet Naval Influence, op. cit., pp. 133-148.

[21]T. Sulikowski, "Ocean Policymaking in the Soviet Union: Bureaucratic Interests and Interaction" in Soviet Oceans Development, op. cit., pp. 211-256.

This is not surprising. Interests in ocean use are extensions of those on land: domestic economy, defense, foreign policy and foreign trade. Distant water fisheries serve domestic food and agricultural interests and/or foreign trade; naval deployments serve the defense of the homeland and/or foreign policy interests; merchant fleet operations serve foreign trade and/or foreign policy interest. There are established national policies concerning these four interests and in every case the "ocean component" is only one of many.

When Western commentators talk about the existence of a master strategy and the central coordination of all ocean activities, they are in fact usually referring only to foreign policy interests and the pursuit of international goals. The implication is that the other three interests are to a greater or lesser extent subordinated to the requirements of an expansionist foreign policy. However, the evidence of the Law of the Sea negotiations would argue otherwise. Russia had a great deal to gain by siding with the Group of 77 in these negotiations; she would have highlighted the intransigence of the "traditional maritime powers" and other capitalist states, and she would have outflanked China in its bid for Third World influence. Instead, her outspoken opposition to the sweeping changes proposed to the existing ocean regime, with its emphasis on freedom of the high seas and narrow territorial waters, put her squarely in the opposing camp. She was coupled with Japan (who, like Russia, had invested heavily in expeditionary fishing fleets) as the most intransigent opponent to the economic zone; and linked with the United States and Britain in her insistence on free transit through straits. In other words, defense of the homeland, and the domestic interests of food and agriculture, took precedence over foreign policy goals. Only when she found herself completely isolated did Russia grudgingly adjust her position on the economic zone, and even then she continued to contest the issue through the bloc of Geographically Disadvantaged States, which includes among its members the Ukraine, Belorossiya and the East European satellites.

However, while it is incorrect to claim that foreign policy objectives determine Soviet oceans policy, it is true to say that Russia makes extensive use of the sea in support of Soviet foreign policy.

The importance of the sea lies in the access it provides to non-adjacent areas, and Soviet foreign policy has exploited that access mainly with her merchant fleet. The shift of resources to merchant construction coincided with the general reorientation of foreign policy towards the Third World in 1955. Soviet-flag ships with their well-disciplined crews enhance the nation's

prestige and influence, particularly when they make well-publicized deliveries of aid. Soviet tankers ensure the supply of countries like Cuba or North Vietnam, Soviet merchant ships deliver arms, equipment and logistic support to client states; certain classes were specially designed with large hatches and heavy derricks to permit the shipment of heavy or bulky types of equipment to countries with inadequate port facilities. Meanwhile the Soviet flag can be seen in most countries of the world, and a merchant ship is still just a merchant ship, irrespective of its cargo. It has none of the political overtones inherent in a naval unit, with its warlike armament and special sovereign status. The merchant fleet is still primarily involved in trade and the business of earning foreign currency. But it plays an important role as an instrument of foreign policy.

The presence in distant waters of the fishing fleet, ocean research vessels and space-related support ships is also exploited for political purposes, although to a much lesser extent. Visits by space ships foster the impression of a leading technological power. Naval hydrographic units provide a professional presence in civilian garb. And the fishing fleets' requirement for local support facilities generates considerable income ashore, although this potential influence may be cancelled out by anger at Soviet fishing operations. The fishing industry, however, makes its greatest contribution to foreign policy objectives (and foreign exchange) by the development of indigenous fishery capabilities, and the provision of aid in the form of harbor development, fishery handling and processing facilities, and management and technical assistance.

The navy is also used to further foreign policy objectives, and all foreign port visits will have some form of local impact. About 80 per cent of these visits are to meet the ships' operational requirements (fresh provisions, rest and recreation, and sometimes fuel), but the other 20 per cent are made for overt diplomatic purposes.[22] The pattern of Soviet behavior is carefully controlled; in Third World countries the influence target is the local political and military elites, and in the case of client states, there is direct contact with the national leadership.

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[22]A.M. Kelly, "Port Visits and the 'Internationalist Mission' of the Soviet Navy" in Soviet Naval Influence, pp. 510-528.

The number of port visits rose sharply in 1968, and since 1971 naval forces have been used for special operations in direct support of Soviet foreign policy, which divide into two main categories: reactions to U.S. initiatives (i.e., "countering imperialist aggression") and operations intended to "increase Soviet prestige and influence." The latter range from minesweeping and port-clearing operations, to providing the diplomatic support of a Soviet naval presence.

While the presence of Soviet naval units and fishing fleets in distant waters is exploited for political purposes, the requirement for shore facilities to support both types of operation, itself acts as a determinant of Soviet foreign policy, moving the latter in directions which it might otherwise not have taken, and into geographical areas which are not of primary political interest. In particular, the navy's requirement for access to base facilities may conflict with the wider objectives of increasing Soviet influence in the world. Wnen Podgorny spelt out Soviet requirements for base facilities in Egypt, Nasser retorted "This is just imperialism."[23]

However, this requirement has also created a growing influence-structure of Soviet consular and trade officials, of fishery plant and port installation advisers, and even a harbor master. The Russians have helped to build new merchant and fishing port facilities and to develop local fishing industries. The Soviet Navy has also been developing base facilities of various kinds in Cuba, Egypt, Syria, Somalia and apparently hopes to gain access to westernmost Africa.

Does this process follow any coordinated pattern? Do we see an initial penetration by the merchant fleet, expanded by the fisheries people and finally exploited by the navy? On rather limited evidence I would answer no. Each organization appears to pursue its own special interests. The navy seems to have clear geostrategic requirements and has zeroed in on these. The cases of Egypt, Somalia, and (as yet unsuccessful) West Africa provide good examples of how strongly focused these requirements are. The fishing fleets have a different set of

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[23]Mohamed Heikal, Road to Ramadan (New York: Quadrangle, 1975), pp. 47-48. See also pp. 166-167 on this general issue of the negative effects of a Soviet military presence.

requirements related to the whereabouts of fish, and they need access to local ports for fresh supplies, to carry out repairs in sheltered waters, and to be able to ferry crews in and out by air. The merchant fleet meanwhile follows the dictates of policy concerning trade, aid and arms supply. The price of access to naval base facilities will normally include the supply of arms and perhaps aid in the form of fisheries development. The three will therefore frequently coincide, but not in the expected chronological order.

Meanwhile, in strategic terms the value of this infrastructure depends entirely on the political alignment of the governments in power. We are a long way from the days of Western imperial expansion, when European powers moved in to directly administer new colonial territories, or established trading posts and bases as sovereign enclaves possessing a punitive capability. Nowadays, the fact of building a port provides absolutely no guarantee that one will be able to make use of it in the future.

Turning finally to the navy's role, we see that the Soviets talk in terms of defending the homeland's maritime frontiers, and of securing (or protecting) state interests, and when discussing the employment of naval forces they tend to use the two categories of "wartime" and "peacetime." However, for our purposes it is useful to introduce a third category of employment which derives from the nature of nuclear missiles. Because of the weapons reach, speed and devastation, naval forces must now be held in continuous readiness in peacetime to discharge the wartime tasks of "participating in the attacks of the country's strategic nuclear forces" and "blunting the enemy's nuclear attacks from the ocean axes."[24] This category of "neither war nor peace" or Wartime/Peacetime role is distinct from, but merges with the warfighting role, and also with the purely Peacetime employment role, which is not concerned with "world war" except as a future contingency.

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[24]Writing at the end of 1972, Gorshkov gave these as the first two of the three tasks which comprise a great-power navy's basic mission in worldwide nuclear war. Msb. February 1973, p. 21. He continues to give these as the main tasks in his recent book "Morskaya Moshch' Gosudarstva," Moscow 1976, hereafter MMG.

Soviet doctrine avoids being categorical about the nature of a future "world war," but a comprehensive role for naval forces was outlined in all three editions of Sokolovskij's Military Strategy, which noted that although geographically extensive, naval operations were not to be decisive. However, Sokolovskij's work begs the larger questions concerning the likelihood of nuclear war, the length of such a war, whether it is even reasonable to think in terms of fighting and winning such a war, and the possibility of full-scale non-nuclear war or of limited war with the West.

In his series of articles published in 1972-1973, Gorshkov makes very few direct references to the navy's wartime role. He refers to the task of delivering strategic strikes and blunting the enemy's seabased strikes, but gives them no undue prominence. His remarks on this are factual and he makes no attempt to justify these two tasks which he takes as self-evident. What he does try to justify by historical analogy (and at considerable length), is the possibility of protracted war at sea, certainly in the period following a nuclear exchange, and perhaps also in circumstances of limited war. This is one of the major strands in his overall argument, which is concerned to emphasize the importance of navies in war and peace, and the need for a properly balanced fleet, including a sufficient range and number of surface ships.[25]

The implication in terms of force requirements were of course considerable. Since we are not aware of what was being proposed in 1971 regarding future naval construction, there is no way of knowing the extent to which his arguments prevailed. It may be that the Kiev ASW cruiser program was under attack at that time, and that Gorshkov won this particular battle; in his recent book he places renewed emphasis on the surface ship's role in the support of submarine operations. But it would seem that he lost his argument about the priority to be accorded to the requirements for protracted war. In a 1974 article he concludes that tactical and strategic time scales are now equally urgent, and repeats this in his book.[26] Gorshkov explains that the ever-growing scope of war at sea entails the increased involvement of the other branches of the armed forces, which

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[25]See my "Soviet Naval Power and Soviet Oceans Policy," op. cit., pp. 112-115.

[26]S.G. Gorshkov, "The Development of the Art of Naval Warfare" (translated and reprinted from Msb., December 1974), USNIPs, June 1975, p. 61: MMG, p. 371.

"foreordains the emergence of a strategy of warfare in the oceanic theaters within the framework of a single military strategy." Destroying the enemy's naval forces still comes within the navy's mission[27] but the focus of Gorshkov's exposition in that article is on the two primary tasks, and he is talking of war fighting with nuclear weapons at sea.

A systematic analysis of Gorshkov's book has yet to be completed, but one of the major points he makes is the shift in the balance of importance away from fleet-against-fleet operations, to fleet-against-shore. Some readers have jumped to the conclusion that in emphasizing the strategic strike role, Gorshkov is thereby downplaying the task of countering the capability of seabased delivery systems. This is not so. He clearly sees the two tasks as being of equal importance, as when he says "the main objective of a navy is to secure the fulfillment of all tasks related to operations against the enemy's land targets and to the defense of our own territory from strikes by his navy."[28] What is however clear, is that Gorshkov is downgrading the traditional concept of establisning command of the sea through fleet engagement, and it is perhaps relevant that he argues that the battle of sea communications should now properly be considered as part of fleet operations against land.[29] This smacks of special pleading and suggests that priority in resource allocation is now concentrated on that category of operation.

Not a great deal that is new can be drawn from all this, and in the case of war with the West, naval operations after the initial period will be conducted as best may be. During the 1975 VESNA navy wide exercise/demonstration the Soviets included convoy operations. In the western areas these probably represented NATO reinforcements to Europe. But in the Pacific the Soviets diverted merchant ships at sea, and ordered others to leave port in mid-loading, in order to form a convoy. This suggests a scenario of war with China and reminds us that Russia must be prepared for war on both fronts and that the requirement to keep open the sea lines of communications to the Far East is very real.

We have no information on the role of the Soviet Navy in limited or local wars. Although the latter are discussed, this is done in terms of Western imperialist aggression. We have referred to the past debate on the role of a "Soviet military presence" (a euphemism for direct military involvement), but there have been no developments since then. It is not possible to say with any

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[28] MMG, p. 354.

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certainty how the Soviet Union views the possibility of active naval involvement in such a war, particularly if it risked direct confrontation with U.S. forces.

Moving on from "Wartime" to the "Wartime/Peacetime" role, we have already discussed one component under the heading of Russia's maritime and overseas interests. As mentioned above, the task of countering the West's seabased delivery capability does not appear to have been downgraded and, as Gorshkov says, many types of weapon and sensor system will join in "the battle against strategic nuclear weapon platforms," including those from other branches of service. The problems of coordination are complex, and the need to discharge the task "in the shortest possible time," achieving operational surprise if possible, requires the employment of automated equipment to ensure effective command and control.[30] The Soviets appear to have mastered the problem of permanently targetting U.S. carriers in periods of tension. There is still the question of disabling the carrier before it launches its strike aircraft, but the SS-N-13 tactical ballistic missile system could be a formidable weapon, and if successful, its terminal guidance system might be used in inter-oceanic land-based systems.

The problem of countering the ballistic missile submarine is of quite a different order. It requires the capability to track continuously a submerged submarine, with an accuracy which allows timely kill-on-command. It is a massive problem and, with a system like Trident, the sea areas involved are vast, yet all the evidence indicates that the Soviet Union is striving to meet this demanding operational requirement. Several analysts[31] are convinced that the Russians are seeking

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[30] Gorshkov, USNIPs, June 1975, pp. 59-60.

[31] Expecially K.J. Moore, who highlights the Soviet emphasis on non-accoustic methods of submarine detection, the use of satellites in this and related roles, and the concept of the extended ASW team which includes satellites, air, submarine, surface ships and shore-based missiles. He notes discussions in Soviet journals of new methods of submarine propulsion and draws attention to the Soviet development of wing-in-ground (WIG) effect vehicles, and their suitability as platforms for high speed area search, using multiple sensor arrays, including anomoly detectors. See Chapters 7 and 8 of Soviet Naval Influence, op. cit. The high level of research and development put into solving the ASW problem and the emphasis on non-accoustic methods is confirmed in official testimony to the Senate Armed Services Committee (see FY 1976 Hearings, Dr. M. Currie, p. 2828, and Dr. Heilmeier, p. 3360). See also N. Polmar, "Thinking About Soviet ASW," USNIPs, May 1976, pp. 125-129. Polmar mentions a Soviet article (no reference) which describes a laser detector for airborne ASW which could scan a water layer over 400 feet deep at 100 knots speed of advance.

to develop a complex but highly original solution to the problem, which would make use of non-accoustic sensors and mount them on a variety of platforms including satellites and surface-effect vehicles.[32] While acknowledging the problems involved, Gorshkov himself refers to the fact that "the search for nuclear submarines is based on exploiting the many physical fields which accompany a moving submarine" and to the potential of wing-in-ground effect vehicles.[33]

Looking forward to the period 1978-1982, my impression is one of expectation. It seems likely that the new family of third-generation submarines which we may expect to begin series delivery in 1978, will have been configured to meet these demanding requirements. I would also expect a whole series of new weapon and sensor systems to enter service during the five-year period, and to see a progressive shift in the pattern of the Soviet Navy's war-related deployments, reflecting a major reorientation of operational concepts.

This, of course, assumes that the Russians have been reasonably successful in their research and development. While it is usually possible to perceive the nature of the Soviet Navy's operational requirements, it is much harder to foresee their choice of response. Furthermore, I have consistently overestimated their capacity to move from an innovative design concept

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[32]Polmar, op. cit., states that a number of configurations of ekranoplan or wing-in-ground (WIG) effect vehicles are reported to be under development, ranging from small vehicles to the "Caspian Sea Monster," which may weigh some 500 tons. From information provided by H. Meier, I gather that U.S. research into this type of system in the early sixties (focusing on its potential for long-range strategic lift), showed that such a vehicle might carry a payload of 250 tons for 5,000 miles at about 90 knots, flying some 30 feet above the surface; this gives twice the range of comparable jet. Recent developments should enable the speed to be increased perhaps to 3-400 knots while retaining the same range. K.J. Moore suggests that there is no reason why small WIG vehicles should not be launched from a ship such as the Kiev, thus by-passing the hydrodynamic thrust/drag hump involved in taking off from the surface of the water.

[33]MMG, pp. 329, 324.

to its practical application. However, they have now been working at this problem for fifteen years and the style of their public pronouncements might suggest that something could be entering service within 2-3 years.* For the Russians are inveterate and unconventional innovators. Their use of explosive shells at Sinope in 1855 wiped out the Turkish fleet and signalled the demise of wooden-walled ships. One hundred years later in 1955, the Soviet leadership took the decision that cruise-missiles should become the main armament of the navy. In the war of 1877-1878, although totally without a Black Sea fleet, Russian sailors shattered the Turkish navy by the extensive and innovative use of torpedo-armed small craft. It seems possible that the centenary of that event may be as portentous for maritime warfare as that of the Battle of Sinope.

The surface warship position is much less clear. Assuming that surface construction has now been brought into line with the five- and ten-year planning cycle,[34] we might expect a new family of surface ships to begin delivery in 1980-1982. However, if the Soviet Union has been able to develop some really effective counter-SSBN system, relying mainly on satellite, submarine, remote-sensor system and land-based weapon, what role is left for the large anti-submarine ship (Kara, Kresta II and Krivak), which now makes up the bulk of distant-water new construction? It is, of course, unlikely that any system can be equally effective in all circumstances (e.g., heavy traffic zones or shallow, shoal-infested waters), but it would be bound to have some influence on the need for surface ships in the distant-ASW role. And, since the task of "defending the home fleet areas" has now been largely assigned to small-hulled surface units operating within range of shore-based support, the future of the larger surface ships could be in doubt. Gorshkov argues strongly that these ships are essential in support of submarine operations, and he is referring here both to ensuring the deployment of Soviet SSBN and to securing the "combat stability" of submarines deployed in the counter Polaris/Trident role. It is too early to know the final outcome of the argument, but the most likely one would be a continuation of existing resource allocations.

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*Past experience suggests there tends to be a two-year lead time between published claims and the initial operational availability of some capability.

[34]The original twenty-year post-war naval building program had an eight-year "Final Delivery Period," which for surface ships slipped four years and ran 1962-1969. For submarines this period was extended to ten years, and now runs on a 5 + 5 system.

The other component of the Wartime/Peacetime role is the deployment of Soviet ballistic missile submarines. The introduction of the SS-N-8 4200 nm. system, which allows the Delta SSBN to launch from within the fleet areas and the protection of Soviet ASW defenses, greatly increases the invulnerability of this system. It is possible that this improved viability, coupled with the lessons learned through the SALT negotiating process, may have caused the Soviet leadership to re-evaluate the Western-style concept of "nuclear deterrence" and to consider whether such a theoretical construct could serve as a basis for action. This could have implications for their willingness to risk physical confrontation with American forces.

Moving on to the purely "Peacetime" employment of Soviet naval forces, the shift to forward deployment began some fifteen years ago, and we, therefore, have a body of fairly concrete evidence concerning the navy's peacetime role. Soviet pronouncements refer to it in general terms as "defending (or securing) state interests," a nebulous formulation, whose scope has yet to be systematically researched.[35] They also talk of the navy's "international duty," of "increasing Soviet prestige and influence" and of "rebuffing imperialist aggression." While not losing sight of the all-encompassing scope of "securing state interests," it is useful to discuss Soviet naval activity in terms of four major categories: establishing a strategic infrastructure; countering imperialist aggression; increasing prestige and influence; and protecting Soviet lives and property overseas.

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[35] I suspect that there is some debate as to just what should be categorized as "state interests," and how far the Soviet Union should be prepared to go in promoting and protecting them. Gorshkov claimed that in 1941 the Red Fleet had the capability "to defend state interests in contiguous naval theatres" (Msb., August 1972, p. 24). In 1962, he gave it as an (additional) naval task, which was the particular responsibility of the submarine force; the context suggested that the term was possibly being used as a euphemism for "strategic strike," which could not properly fit within the meaning of "defending the homeland from attack from the sea." (Krasnaya zvezda [K.Z.] 30 October 1962). By 1965 it had been linked with the merchant fleet (K.Z., 13 July 1965). For an extended discussion of this term see J. McConnell, The Soviet Navy in the Indian Ocean, Center for Naval Analyses, Washington, Professional Paper No. 77, August 1971; reprinted in Soviet Naval Developments, pp. 392-400.

"Establishing a Strategic Infrastructure" covers the task of establishing the physical and operational geostrategic infrastructure required to support two categories of war-related operations: (a) posing a permanent counter in peacetime to Western seabased strategic delivery systems; and (b) securing the safe and timely arrival of military supplies to the Eastern Front in the event of war with China. The task is not referred to openly and I have inferred its implicit existence from the pattern of naval operations and port visits over the last ten years. I believe that this task provides the primary motive for a broad span of decisions ranging from promoting a coup in a client state, to acquiring base rights by barely concealed coercion. Because it concerns the security of the homeland, this task is likely to be backed by a high level of political commitment, and the evidence shows a willingness to accept political costs as long as the strategic objective is furthered. Of course, once such an infrastructure is established, it can be used to support other missions in the best Mahanist traditions. However, if the wartime/peacetime role is downgraded, or lapses, then the level of political commitment is likely to drop.

The need for bases in non-Bloc countries (and the reversal of long-standing policy which this implied), seems to have been acknowledged by the middle sixties and debate will have centered on the political-cost side of the cost/benefit equation. It is, therefore, significant that, notwithstanding Gorshkov's arguments, the Soviet Union withdrew her Air Defence units from Egypt in July 1972, and Soviet naval aircraft lost the use of those airfields. The Russians managed to persuade President Sadat to honor the five-year agreement on naval base facilities, which had been signed by Nasser in March 1968. However, the price for renewing that agreement in 1973, appears to have been the signing of a new arms supply agreement, which provided the means for Egypt's attack on Israel in October that year. But despite this Russian bribe, by April 1974, Egypt was once more reviewing the question of foreign access to her facilities, and during 1975 she imposed restrictions on the Soviet use of her ports and anchorages. The portents had, however, been clear enough, and from the end of the October War, Soviet naval units had begun to make increasing use of Syrian ports, and after April 1974 the navy stepped up its search for alternative facilities in the Mediterranean.

In the Caribbean, substantial facilities had already been provided to Cienfuegos, before development of the nuclear submarine base was halted in response to U.S. objections. However, it really only needed the deployment of a submarine tender for these facilities to be activated. Soviet naval units,

including submarines, continued to visit Cuba, and there appears to have been a deliberate policy of probing U.S. reactions to visits by nuclear-powered and/or missile-armed submarines. Meanwhile, Cuban airfields are used extensively by Soviet aircraft flying reconnaisance. On the other side of the Atlantic there has, however, as yet been no success in establishing comparable arrangements with a West African state, although Soviet maritime patrol aircraft do make regular use of the airfield at Conakry in Guinea, and it is also used to stage transport aircraft flying from Russia to Cuba and to states in southern Africa.

In the Indian Ocean area, Soviet naval units were already making regular use of Berbera on the Red Sea by 1971. However, in February 1972, Marshal Grechko visited Somalia to sign an agreement which provided for the construction of new facilities and a Soviet-Somali treaty of friendship was signed in July 1974. The naval base complex in the Berbera area now includes alongside berthing, refit and repair facilities, missile storage and maintenance shops, a tank farm and refueling points, and communications facilities which are comparable with those at the U.S. Navy's base at Subic Bay. A Soviet repair ship and a barracks ship are permanently berthed in the harbor and there are accommodation trailers ashore. An airfield for medium-range aircraft is already in use, two other existing airfields are being extended so as to handle all types of Soviet aircraft, and a fourth large airfield is under construction at Uanle Uen. A separate base facility is being developed at Mogadiscio on the Indian Ocean, which includes a missile facility capable of handling any of the tactical systems fitted in Soviet ships.[36]

Grechko's personal involvement may not be accidental. The Straits of Bab-el-Mandeb comprise a vital part of the sea line of supply to the Far Eastern front. Somalia can also serve as a point d'appui for Soviet military interests throughout the Indian Ocean region, including the threat to Russia's southern flank of Chinese political pentration in Pakistan and Iran.

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[36]B. Crozier, The Soviet Presence in Somalia (London: Institute for Conflict Studies, February 1975); Defense Space Business News, 13 November 1975; E.B. Atkeson, "Hemispheric Denial," Strategic Review (Washington, D.C.), Spring 1976, p. 33; Seminar on the Indian Ocean, University of California at Berkeley, May 19-21, 1976.

The price for this agreement included the training of Somalian officers in Russia. Which brings us to another aspect of strategic infrastructure which needs consideration. The supply of arms and military training is used to build up Soviet political influence. It has also played a role in "thwarting the imperialists' aggressive designs" by increasing the military strength of Third World countries, thus raising the costs of Western military intervention.[37] But in certain cases the supply of naval arms has served Soviet interests even more directly by diverting Western forces from their primary (anti-Russian) assignments. For example, the delivery of ocean-going submarines to Egypt in 1957-1958 introduced a complicating factor to Sixth Fleet operations in the Eastern Mediterranean. And the build-up of the Indonesian Navy in 1959-1962, including the supply of bombers armed with anti-ship missiles, had the effect of drawing a large number of British forces east of Suez, including the attack carriers nominally assigned to SACLANT. More interesting still was the shift of Soviet attention back to the Mediterranean in the early sixties at the time of the navy's move forward in strategic defense. Egypt's submarine force was upgraded with second-generation units and she too was given missile-armed bombers, thus posing a direct threat to the Sixth Fleet. And at the other end of the Mediterranean, newly independent Algeria was issued with an instant navy comprising Komar and Osa missile-armed patrol boats, which could attack U.S. forces in the eastern approaches to the Gibraltar Straits. Of course, there is no guarantee that client states will remain true to their patrons and, since "missiles don't know their mums," they can be turned against their donors. However, these arms deliveries did serve to complicate NATO's problems, and give some indication of Russia's geostrategic interests.

The second category of Peacetime employment is "Countering Imperialist Aggression." In the Soviet lexicon, the term "imperialist aggression" includes the deployment of U.S. seabased systems within range of Russia, countering which has already been covered under the war-related role. For our purposes it is more useful to limit the scope of this task to challenging/countering the peacetime employment of Western forces against the interests of "progressive states" and the "national liberation movement." In areas such as the Eastern Mediterranean, where additional naval forces were deployed during the 1967 and 1970 crises, this task is upstaged by the more important war-related task of countering the carrier's nuclear strike potential, and

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[37] The 1956 Anglo-French operation against Suez provides a good example. A major cause of this debacle was the overestimation of Egypt's military capability when using Soviet weapons, which led to the disastrous delay while an "appropriate" type of force was laboriously assembled.

Soviet naval units have clearly had the latter as their only priority until the danger of escalation was past. During the 1973 crisis the evidence is more ambivalent. The berthing of Soviet naval units in Port Said in 1967 might come within the category of countering imperialist aggression, except that it took place a full month after the end of the war, and reflected the newly gained access to Egyptian port facilities.

The first clear example of this task is, therefore, the establishment of the "Guinea Patrol" in December 1970, apparently to deter further Portuguese-supported seaborne attacks on Conakry. The next example was the dispatch of Soviet naval detachments to the Indian Ocean in December 1971, in reaction to the deployment of British and U.S. carrier task forces during the Indo-Pakistan war. This was followed by the reactive deployment of Soviet forces to the South China Sea after the U.S. mining of Haiphong in May 1972, and there were further reactive deployments to the Indian Ocean during the 1973 Arab/Israeli crisis. During that same period Soviet naval units moved to provide terminal control and cover to aircraft flying military supplies to Syria and Egypt.[38] In November 1974, when Syria feared an attack by Israel, a Soviet naval detachment visited Latakia.

The most recent example was during the Angolan crisis, when a Kresta class large anti-submarine ship was deployed from the Mediterranean, and took up station south of Guinea. On the basis of established practices, one can assume that there were one or more missile armed submarines in company, which one would expect to be spread on a patrol line covering the approaches from the North Atlantic. In addition to the Kresta deployment, the landing ship which normally patrols off Guinea moved down to Pointe Noire, Congo, and a SAM Kotlin took up position to the north of Angola, accompanied by an oiler. Drawing on the pattern of behavior in the Mediterranean, the landing ship may have been standing by in case of need, to evacuate key Soviet personnel and special value equipment, with the Kotlin having operational control and available to provide combattant support if necessary.

The third category of Peacetime employment is "Increasing Soviet Prestige and Influence." Showing-the-flag through naval port visits increased sharply after 1968, but the majority of such visits continue to be "operational" (i.e., to meet the operational requirements of the visiting ships), and include

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[38] R. Weinland, unpublished paper.

a very high proportion of submarines. However, the task of "increasing Soviet prestige and influence" assumed a new dimension in 1972. It has since encompassed port-clearing operations in Bangladesh (April 1972-mid-1974), naval involvement in the Iraq/Kuwait border dispute (April 1973), ferrying Moroccan troops to Syria (April-July 1973) and minesweeping the Gulf of Suez (July-November 1974). There were also the large-scale "Okean" type naval exercise/demonstrations in 1970 and 1975.

The fourth category of Peacetime employment is "Protecting Soviet Lives and Property Overseas." One clear-cut example of this task involved the deployment of three warships to Ghanian waters at the end of February 1969. This appears to have effected the release of two trawlers which had been held by Ghana for 4½ months, despite other forms of Soviet diplomatic and economic pressure. Other examples can be found in the deployment of amphibious units to stand off Syria and Egypt during war with Israel, and off Angola.

Any particular operation may further the objectives of more than one of these four peacetime tasks. The Guinea Patrol "deterred imperialist aggression" and "increased Soviet prestige and influence" in Africa. But its continuation after the Portuguese threat evaporated in 1974, suggests that its major justification may have been to "establish the strategic infrastructure" by securing access to base facilities in that area. Tasks may also be in conflict with each other, and there is probably a tendency for the military imperatives of the "strategic infrastructure" task to work against the more diplomatic requirements of "increasing prestige and influence."

Reviewing the last ten years of Soviet naval operations, the greater part can be explained by the war-related tasks, by the need to establish the strategic infrastructure to support these tasks, and by low-pressure political exploitation of the naval presence in distant waters. However, between 1970-1972 there was a marked increase in operational activity directly in support of the two peacetime tasks of "countering imperialist aggression" and "increasing Soviet prestige and influence," including the deployment of forces specifically to these tasks. This upward trend appears to have levelled off in 1972-1973, while the trend in ship/days on forward deployment levelled off in 1971-1972.[39] Meanwhile there appears to have been some

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[39] See R. Weinland, "Soviet Naval Operations: 10 Years of Change" in Soviet Naval Policy, op. cit., pp. 375-386. All areas peaked during 1971 except for the Indian Ocean, which saw a slight increase in steady state deployment in 1972.

softening in the tone of public pronouncements concerning the purpose of this forward deployment.[40]

This chronology matches the fluctuations in the debate on the role of a "Soviet Military Presence" and, if my analysis of that debate is correct, it would account for the change in trend of Soviet naval involvements. Although the policy would apply primarily to land-based units, it would also affect the naval task of "countering imperialist aggression" against client states. It implies a step back from military confrontation over lesser interests, although the Soviet naval response to Angola could be seen as going against this trend. The shift in policy would not, however, affect the task of establishing a geo-strategic infrastructure. That is directly related to the security of the homeland and, therefore, enjoys high political commitment. Which brings us to the question of bases. Although these are needed primarily to support forward operations, the Soviet Navy is obviously not unmindful that some have greater strategic advantages than others. In this context the base facilities at Berbera are of particular interest, covering as they do the north-west quadrant of the Indian Ocean and the Southern approaches to the Red Sea.

When then of the future? Perhaps the Russians did originally intend the forward basing of surface ships and submarines to be an interim measure, until they developed strategic systems which would not have to depend on political rulers overseas. But policies gain their own momentum, situations change and new opportunities present themselves. What is more, the Soviet military rarely discard anything which may have some residual use, and are great believers in both belt and braces.

There is also the special feature of naval strategy which "differs from military strategy in that it is as necessary in peace as in war. Indeed, in peace it may gain its most decisive victories by occupying in a country, either by purchase or treaty, excellent positions which perhaps could hardly be got by war. It learns to profit from all opportunities of settling on some chosen point of a coast, and to render definitive an occupation which first was only transient." This is from Mahan,[41] quoting an unnamed French author. And although the international political circumstances are now very different, and the nature of maritime warfare has changed out of all recognition, the last section of the passage could be used to describe Soviet behavior during the last seven years.

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[40] S.G. Gorshkov, "Na Okeanskoj Vakhte," K.Z., February 11, 1976; "Boevye Vympely Rodiny," Izvestia, April 29, 1975; "Morskaya Moshch' Strany Sovetov," K.Z., July 28, 1974.

[41] A.T. Mahan, The Influence of Sea Power on History: 1660-1783, London, Methuen, 1965, p. 22.

As we have seen, the geographical pattern of the Soviet Navy's interests in shore facilities fits well with the explanation that Russia's primary concern was to establish the strategic infrastructure needed to support the navy's war-related tasks. However, the question which now faces us is whether, irrespective of the original determinants of this policy, the Soviet Union has decided that naval forces are essential (or cost/effective) instruments of state policy in peacetime, and that a forward-base structure is necessary to support this role. The answer must lie in the future, although we can note that the Soviet political process militates against either/or decisions of this kind, and favors compromises, opportunistic decisions and incremental changes. Would the Soviet Union use its presence in Somalia, or other strategically located countries, to deny passage to selected ships or even to U.S. forces? There are countless scenarios involving the use of naval force in this and other ways, but it seems unlikely that the Russians have themselves reached any irrevocable decisions on this score. However, if they did decide to use force at sea, past experience suggests they would be more likely to employ a proxy. Meanwhile, in terms of their broader foreign policy objectives, they continue to have this major interest in stability at sea, so that they can use the oceans for their various purposes. As the inferior naval power, and having a considerable financial and political investment in merchant and fishing fleets, the Soviet Union may be more wary than most of disrupting the maritime status quo by interfering with the free passage of ships.

Which brings us to the question of the future availability of forces. The prospects for surface warship construction beyond 1980 are still unclear, but at that date we could expect the Soviet Navy to have 4-5 air-capable anti-submarine "cruisers," about thirty-five large anti-submarine ships of 6,000-9,000 tons and about sixty-five destroyer-sized units. The latter would include the twenty major conversions, whose hull and machinery would by then be twenty to twenty-five years old, the ages of the remaining ships being fairly evenly spread between one to eighteen years. As for submarines, besides some sixty strategic-ballistic missiles, the navy might expect to have about 130 tactical-attack nuclear units and perhaps as many as 150 nonnuclear units less than twenty-five years old.

It would appear that most if not all of the nuclear submarines will be assigned to the war-related roles, which require the continuous discharge in peacetime of what are essentially war-time tasks. If we are to believe Gorshkov, it would seem that a certain proportion of the surface forces will be required to operate in support of the submarines, and there will also be

some units required for in-area duties. Non-nuclear submarines have a primary role of fleet-area defense but are also used on forward deployment, and when replaced by nuclear units, they would become available for other employment.

There is relatively little to go on. What evidence there is suggests that until 1980 at least, present levels of deployment will be maintained, and the use of Soviet forces for political purposes will relate to the opportunities presented rather than some master plan. Beyond that, there are several questions outstanding. In particular, when (or if) the exotic new strategic ASW systems come into service, will surface ships be released from the role of countering seabased strategic delivery systems, and become available for other employment? Will surface warship construction continue at its present rate throughout the eighties, or will it be cut back? Or might it even be increased? And whatever the building rate, will the characteristics of the new surface classes reflect the general-purpose requirements of a peacetime role in support of state interests, or will they continue to be primarily configured for nuclear-missile war?

And there remains the question of naval bases. Assuming that the new strategic defense systems have been designed to avoid reliance on the goodwill of distant states, the cost/benefit calculus for naval support facilities in foreign lands will change radically. Egypt is reported to owe Russia $6 billion for military supplies alone, and repayment would seem uncertain. The political costs are also high, not only in terms of the Soviet image, but in the influence which it gives the host country over Russian policy. Can these costs be justified by the benefits accruing from the employment of naval forces in support of state interests? If not, and if the arrangements for shore support are allowed to lapse, this will affect the possible levels of forward deployment unless afloat support is provided in lieu. Because of the Chinese factor, Somalia is likely to remain an exception to this process, nor would any such change of policy apply to air-staging rights.

Much of the emphasis in this discussion has been on why the Soviets have acted the way they have, and may act in the future. The purpose is to identify the primary determinants of policy, which will give some indication of the level of political commitment behind the policy, and the level of risk which can be accepted in achieving its objectives. On the basis of the expenditure of resources, there is little doubt that there is a high political commitment to the mission of countering Western

seabased strategic delivery systems. There is also high political commitment to the containment of China and her defeat in war. We are, however, much less clear about the level of commitment to other policies, or even how the Soviets see the relative utility of various instruments of foreign policy; in particular, the role of military force outside the Soviet national security zone.

But besides political commitment, there is also the question of effective military capability. The deployment of a U.S. carrier task force to the Indian Ocean in December 1971 during the Indo/Pakistan war may have been counter-productive in political terms, but at least the force had a demonstrable military capability, which could be used if so wished. Not so in the Soviet case, despite the missile armament of their surface ships and submarines. Under what circumstances would these units have been ordered to attack the carrier? As soon as it readied its aircraft for take-off. . . .to an unknown destination with an unknown weapon load? Or perhaps only after the aircraft had struck home target ashore? Perhaps the Soviet Union could claim they got some political mileage out of this operation, although they certainly risked being exposed as paper tigers. But their next deployment, in response to the mining of Haiphong was both militarily and politically pointless; a fairly substantial force of surface ships and submarines sailed to the South China Sea, hung around for a few days, and then returned home. There was nothing effective that they could do. These kinds of issues seem to have lain at the heart of the prolonged debate over the future direction of Soviet policy. They involve questions concerning the utility of military force, the risks and benefits of "countering imperialist aggression" against client states, and the cost-effectiveness of naval forces in furthering the Soviet Union's international goals in peacetime.

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As the final element of this background review, we must address the question of changes in the political and military background.

I should perhaps start with a general warning against misleading recollections of Pax Britannica. Not only is much of the conventional wisdom misleading, but even since the last war, political attitudes and circumstances have changed radically. Of the latter, the most significant would seem to be the proliferation of nation states and their membership in the United Nations. The corrolary of this has been the progressive dismantling of the administrative infrastructure, which played such an important role in bringing imperial retribution to bear.

There has also been a change in general attitudes towards the acceptability of coercive force. The circumstances in which long-range intervention is likely to be acceptable have been progressively circumscribed, and in the last thirty years, coercive intervention by major powers has been successful only within their respective contiguous national security zones, where power gradients and political commitment are both high. Effective intervention overseas now requires a favorable balance of political forces in the "host" country, as well as sufficient weight of sustained response.

But even if attitudes had not changed, warships would no longer be able to serve as the autonomous wielders of graduated retribution. The specialized demands of modern warfare mean that naval units now lack the military flexibility of the pre-war general purpose cruiser, with its numerous guns and comfortably large ships company. Meanwhile, the proliferation of sophisticated weapon systems means that warships are no longer invulnerable when lying offshore. Sensors have to be manned continuously with weapons ready at standby alert, and it is hard to spare a landing party without hazarding one's ship. The modern equivalent of the cruiser with its landing party is the carrier task force and its marine battalion landing team. But while the political effect that each could achieve may be comparable, the political stake involved is obviously very different. None of this means that military intervention by sea is no longer likely or possible. But it has placed constraints on the almost casual use of force which used to be the norm. And it does mean that the economic and political costs are likely to be very much higher, and that the chances of a successful outcome are far less.

Next, I want to dismiss developments in Law of the Sea as being significant in the context of this paper, for reasons I suggested in the first section. Pressure on resources and improved technology will increase the possibility of interstate conflict in the region, but such causes are less likely to draw in Super Power support than other issues.

Third, we have the advances in technology which have enabled quantum jumps in such fundamental weapon characteristics as range, accuracy, payload and systems reliability. These have been matched by an exponential increase in the capabilities of sensor and surveillance systems. By depriving the seas of their capacity for concealment, the improved surveillance systems have simplified the problems of ocean interception by warships. They can also provide the target location data which allows long-range weapon systems to be brought to bear. Tactical systems with ranges from 300 miles (cruise missiles) to 1500 miles (aircraft) have been in service since the end of the fifties, but the emerging capability to strike moving targets with ballistic missiles at intercontinental ranges, is introducing a new dimension to maritime warfare.

As long ago as 1972, the Soviet Union claimed that "naval groupings" were targetted by the Strategic Rocket Forces, and we know that they are developing a homing re-entry vehicle for a medium-range ballistic missile. We are now moving into an era where maritime warfare will be fought as much by land- as sea-based weapon and sensor systems, and it is becoming necessary to distinguish between the "reach" of different systems and to think in terms of "global" and (for want of a better term) "local" systems. In the middle ranges, such distinction will be somewhat arbitrary, but it becomes clearer if we allow that "reach" covers response-time as well as range. Thus an IRBM would come within global systems, while a medium-range bomber would be at the high end of the local systems. Perhaps more important is the concept that "global" systems are of a kind that can be launched from national territory (or from a strategically located submarine), to strike like a bolt from the blue at maritime targets in distant sea areas, across intervening seas or territory, whereas "local" system implies a more direct relationship between adversaries. Global systems will be extremely sophisticated and expensive, and in the main they are likely to be limited to the superpowers. Several components for such systems are already in service, and it seems clear that the Soviet Union (at least) intends to adopt an integrated "all arms" approach to maritime warfare.

The other major development has been the proliferation of sophisticated conventional weapon systems among coastal states. The effect has been to increase the ability of these nations to defend themselves against external intervention and, in several cases, to prevent the use of their coastal seas. The implications of this are less serious in the South Atlantic than elsewhere, because of the absence of narrow international waterways.

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We are now in a position to consider the navy's potential contribution to the maintenance of Soviet interests in the South Atlantic region. Referring back to the conceptual framework established in the first section of this paper, we can address this question under three main headings:

a. Securing the use of the sea for Soviet purposes

b. Preventing the use of the sea to Soviet disadvantage

c. Projecting military power in the area

But first, we must briefly review the nature of Soviet interests in the region, the pattern of past naval activity, and the Soviet Navy's capabilities in the area.

Under the category of strategic defense, the Soviet Union has a general interest in the whereabouts of Polaris/Trident submarines, but in particular terms, the South Atlantic ranks low in the order of threat. The Soviet Union has, however, shown a consistent interest in the latitude band 10°N - 20°N, which takes in the bulge of West Africa, the Cape Verde Islands, and the southern half of the Caribbean. This adjoins NATO's southern limits, and if the Soviet Navy could establish themselves in the area with effective shore support the advantages would be considerable. It would provide them with surveillance access to the North Atlantic basin, bring them closer to the east/west lines of communications with the Mediterranean, and place them in a blocking position should U.S. naval strike units (particularly carriers) seek to wait out the initial exchange in the South Atlantic.

Under the category of domestic economic welfare, the Fishery Industry has a major interest in the fisheries along the whole African coast. In 1974, the catch for the East Central and North West Atlantic fisheries was about the same at 1.15 Mn metric tonnes, while the South East Atlantic provided about half this amount (0.45 Mn). The latter fishery is static, but the East Central fishery is growing steadily. The Soviets have a joint agreement with Spain to develop the Canary Islands as a supply and transhipment base area for the Soviet fishing fleet in the East Central area, and new port facilities have been built at Las Palmas and Santa Cruz de Tenerife.[42] It is believed that the Soviets have recently concluded comparable arrangements with the new regime in Angola.

The other major domestic interest in the region is raw materials, but I do not know the pattern of Soviet supplies or the range of bilateral agreements. As an example of the latter, the Soviet Union has constructed a mining enterprise in Guinea, which will supply it with 2 Mn. tons of bauxite (one of its strategic imports) annually over the next thirty years.[43]

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[42]Kravanja, op. cit., pp. 402-405, 442.

[43]Valkenier, op. cit., p. 222.

Under the category of influence-building, Russia has been persistently putting her fingers into pies throughout the region for the past twenty years, with no success in South America and varying results in Africa. The withdrawal of Portugal has opened up a new range of opportunities which are latent in Southern Africa, and extremist whites in Rhodesia and Namibia help to keep them alive. A future opportunity which the Soviet Union must have in mind is a United Nations resolution calling for mandatory sanctions against the Republic of South Africa, enforced by naval blockade. Western ambivalence to the Black-White struggle makes it possible (even likely) that the Soviet Union will be the only major power standing ready to offer its navy for this purpose. The characteristics of South Africa's naval forces show that they, at least, see the threat of naval blockade (from whatever source) as a real one.

The Soviet Union also has a major interest in the South Atlantic as a waterway. When the Suez Canal was closed, about 8 per cent of the ships rounding the Cape were Soviet flag. With the canal open, this proportion will drop substantially, partly because the Soviet Union has relatively few super-tankers, but mainly because the figures included fishing vessels. The Black Sea Administration is responsible for the Indian Ocean (the Pacific Administration being fully occupied with the single largest Soviet fishery), and its vessels will always take the Canal. Nevertheless, the Cape Route maintains its long-term strategic importance as a link with the Soviet Far East. The Northern Sea route is only open for about one-third of the year, shipping must move in convoy, and passage is never certain; the other two routes both pass through canals which lie within foreign jurisdiction. Only the Cape Route can provide certain all-year-round passage through international waterways.

Turning next to naval activity in the region, we see that in general it has been relatively slight. The most significant activity is the "Guinea Patrol" which was established in the wake of the Portuguese-supported attack on Conakry in December 1970 and which usually comprises a landing ship or some older combattant. There are reports that a similar presence has now been established off Angola. Deriving from the Guinea Patrol is Soviet access to Conakry airfield, this provides the third corner of the Atlantic surveillance triangle, linking the Northern Fleet airfields with Cuba and West Africa and is an important staging post in the network of strategic communications.

Current information on naval port visits is hard to come by, but we have a fair amount of detail through 1973,[44] and the pattern does not appear to have changed substantially since then. The majority of visits by naval combattants have been concentrated in westernmost Africa (Morocco, Senegal, Guinea, Sierra Leone) and in the case of the last three, the initial visits could be linked with political developments ashore.[45] For the rest, visits by combattants could usually be tied to transfers to the Pacific Fleet, and since the opening of the Suez Canal, these have virtually ceased. With the exception of Guinea, no significant inferences can be drawn from the pattern of port visits, except to note that almost complete neglect of South American ports in the last few years. The other point to note is that the majority of visits are made by naval non-combattants, particularly hydrographic research ships and space-support ships. The South Atlantic has been a regular beat for the latter since the early 1960s.

There have been no sustained naval deployments in the region, nor does it figure in the quiquennial Okean/Vesna naval exercises/demonstration. However, in the summer of 1967, a Soviet submarine tender and a missile support ship spent five months in the general area of the Cape Verde islands, in company with a number of submarines, underlining Soviet strategic interest in the area to the north of the region.

Moving on to Soviet naval capabilities in the South Atlantic Region, we note that it is relative capability which is important, and, since the prime characteristic of naval forces is their long-range mobility, we can only make rather general statements.

We can perhaps start by recalling Russia's requirement to defend four widely separated fleet areas, as well as having to pose a counter to strategic delivery systems in distant sea areas.

Next, we have the fact that during over the last twenty years the West has been building 2-3 times as many surface ships over 1000 ton displacement as has the Warsaw Pact; if we take account of size and combat capability (important factors in distant deployment) the disparity is more like 2-4 to 1. The West was also outbuilding the Warsaw Pact in nuclear submarines

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[44] See my "Foreign Port Visits by Soviet Naval Units" in Soviet Naval Policy, op. cit., pp. 402-405.

[45] See my "Evolution of Soviet Naval Policy: 1960-74" in Soviet Naval Policy, op. cit., p. 525 and note 55.

during the first ten years of the period, but for the second ten years, Soviet production was 2-3 times greater; construction of ocean going diesel submarines during the period was comparable.[46]

Third, we should note that in this comparison of building rates, we have limited the "West" to NATO nations, plus Australia, New Zealand and Japan. We did not include various countries which are basically anti-communist such as Spain and Taiwan, nor those which directly adjoin certain Soviet fleet areas such as Sweden and China (which has seventy submarines), nor the various regional powers such as India, Iran and, more particularly, the Brazilian, Argentinian and South African navies.

By the end of the 1980s, if present building rates continue, and assuming a rather generous twenty-five years age of obsolescence, the Soviet Navy could comprise about 235 nuclear submarines (of which some sixty SSBN) and perhaps about sixty to seventy diesel units. The distant water surface force could comprise some nine to ten units in the 20-40,000 ton range, now represented by the Moskva and Kiev classes; about forty-five cruise-sized units, now represented by the Kara and Kresta class of large anti-submarine ships; and about sixty-five destroyer-sized ships, now represented by the Kashin and Krivak classes. The strength of the fleet lies in its submarine force, and the surface element, as now, will be hard stretched to meet its standing commitments. This does not mean that a task force could not be formed for operations in the South Atlantic, but it would probably have to be at the expense of some element of the present-day (1977) deployments. For naval purposes, Russia is severely handicapped by her geography, and the United States has considerable advantage in this respect.

When we look at the comparative capabilities of the Soviet and U.S. navies for military operations in the South Atlantic, in general terms the balance of advantage appears to lie with the Americans. Unlike the Eastern Mediterranean and the South Norwegian Sea, where the power gradients favor the Soviet Union and where land-based weapon systems can reinforce an existing strong concentration of Soviet naval force, in the South Atlantic the

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[46]See "Comparative Warship Building Programmes" in Soviet Naval Developments (1973) and Soviet Naval Influences (1977).

power gradients generally favor the United States, and it is as good an operating environment for full blown aircraft carriers as can be found today. Even if the Soviets remain relatively close to shore, they will have trouble in securing effective air cover throughout the area, and unless there is a radical improvement in Soviet VTOL aircraft, Kiev type ships will not solve that problem. The result of any encounter between the two navies would, of course, depend on the forces deployed within the engagement zone, but we should not limit ourselves to considering operations within the region, since the introduction of submarine and surface forces moving to the area is to be expected. The final outcome would also depend on whether the engagement was limited to local weapon systems, when the United States would tend to have the advantage, or was extended to include global systems, which might give Russia the edge.

What differences would bases in the area make to Soviet naval capabilities? A forward operating base brings two types of advantage, one affecting sustained operations and the other affecting unforeseen contingencies. In the first case, the purpose of a base is to obviate unproductive transit time to and from the operational area and it gives you two options. You can either maintain the same number of operational units on station with a smaller total force; or you can maintain a larger number of units on station with the same total force. In the second case, the purpose of a base is to permit speedy reaction to unforeseen developments in the area, on the principle that a stitch in time saves nine, or getting there firstest with the mostest. Before we can answer whether a base would improve Soviet capabilities in the region, we must, therefore, ask "capability to do what?" As we have seen the Soviets found it necessary to have a base in the Eastern Mediterranean in order to be operationally effective, and they have also chosen to have a base in Somalia, which may, however, be for reasons of economy. But there is always a political cost and this has to be weighted against the gains which the base may bring. If we are thinking of a base in order to sustain warlike operations (such as attacks on shipping), then we must ask why the Soviets would expect such a base to be left intact, and available for use.

We can now turn back to our conceptual framework, and start by considering the requirement for the navy to secure the use of the sea for Soviet purposes; we will do this under the two headings of "resource exploitation" and "navigation."

Although a naval demonstration helped to release two Soviet fishing vessels from Ghana, these had been held for four months on a charge of involvement in an attempted coup hence this is not a typical case. The behavior of Soviet distant

water fisheries is assertive and their joint ventures are often exploitative, but so far the Soviet Union has been willing to enter into bilateral and multilateral fishery agreements and then abide by them. Even where she does not accept a state's unilateral claims, as used to be the case with the South Americans, she has not reacted to the seizure of her vessels, or even when they have been damaged by gunfire. The partial exception to this rule might be in the Seas of Japan and Okhotsk, but here the circumstances are very different. Naval units are not used for fishery protecting duties (unlike several European countries), and indeed a wedge-shaped formation of 3500 ton stern trawlers is powerful enough to assert its own rights in most situations. But they have not even used this ploy, and the indications are that within the present framework of Soviet foreign policy, such action is considered counter-productive both in terms of influence-building and in the broader interests of Russia's worldwide fisheries.

While the Soviets doubtless find it reassuring to have a navy in the background, protection of the fishing fleets does not at present rank as a significant role and, unless things change considerably at sea, is unlikely to do so in the future. Nor does the protection of mineral exploitation, whether from the deep seabed or the continental shelves of distant states. And in the latter case we are not talking of protection, but of military intervention.

Moving on to securing the navigational use of the sea, here again the navy has a role in the background, but for general trade the Soviets rely on, and abide by the accepted precepts of international law. Nor have there been publicized cases of the Soviets reacting militarily to physical affronts to their flag. Their ships have been sunk or damaged (as in Hanoi and Lattakia), but little was said. There seems to be a general policy of down playing seizure and damage of Soviet property overseas, and it seems unlikely that they would react militarily to a Mayaguez-type of incident unless it were in waters adjacent to their fleet areas.

The supply of a client state by sea is a special cateogry of navigational use, particularly if it involves the shipment of mean and supplies in the course of battle. In the 1973 Arab/Israeli war and in the Angolan affair, Soviet forces took up stations which could be seen as "interpository," and intended to discourage U.S. naval intervention with the free flow of supplies. The evidence is not yet clear, but I suspect that the naval role of "securing the seaborne supply of a client state" will become more important in the future, and this will have considerable relevance to Southern Africa.

NEW TECHNOLOGY AND NAVAL FORCES IN THE SOUTH ATLANTIC

By

Dr. David Kassing*

INTRODUCTION:

There is a growing belief that new types of weapon systems will have major implications for non-nuclear warfare. The weapon technologies that are mentioned most often are: precision-guided munitions, remotely-piloted vehicles, VSTOL aircraft, surveillance and targeting systems, electronic warfare measures and countermeasures, and command, control and communications techniques. One main theme is that the new technology favors defense forces. Large, visible, attacking units, such as tanks, helicopters and attack aircraft, are thought to be more easily detectable by the new sensors and more vulnerable to attack with the new weapons.

Most attention has been given to the implications of these technologies for land warfare, particularly warfare on the central front in Europe.

There has been much less discussion of the consequence of the new technologies for naval warfare, though some of these "new technologies" have been in naval use since 1958. Since Soviet-made Styx missiles sank the Eilat in 1967, perhaps 100 to 150 antiship missiles have been fired in anger, sinking another destroyer, 10-15 smaller naval craft, and about 5 neutral merchant ships.

This paper examines the implications of the new technologies for the naval situation in the South Atlantic. It begins with an examination of maritime interests and the current state of the navies there. Next comes a discussion of new technologies for naval warfare, concentrating on weapon systems directed against surface ships and submarines. The paper ends with a discussion of the prospects for proliferation of new conventional technologies into the South Atlantic and the implications for naval warfare in that area. Because there are many naval missions, many new technologies, and many nations, what is offered here should be viewed as a sample of the important issues.

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*The views in this paper do not necessarily represent the opinion of the Center for Naval Analyses or the Department of the Navy.

MARITIME INTERESTS IN THE SOUTH ATLANTIC

Maritime interests are typically divided into such categories as sea lanes, fisheries, seabed resources, and ports and bases.

Expressed in these terms, the most important maritime interest in the South Atlantic is clearly the sea lanes. It is not necessary to dwell on the growing importance of Persian Gulf oil to the U.S. and Europe. About 90 per cent of that oil is shipped around the Cape and, then, northwest through the South Atlantic. Although the Suez Canal will be widened and deepened to accommodate larger ships, the volume of imports from the Persian Gulf will continue to grow, and the Cape route will retain its predominant importance.

The South Atlantic region is also a source of raw materials. The volume of these shipments to the U.S. in 1985 is projected in Table 1.

TABLE 1

ESTIMATED U.S. IMPORTS OF DRY BULK COMMODITIES FROM SOUTH ATLANTIC -- 1985
(Thousands of long tons)

	South America	West Africa	South Africa	Total	South Atlantic share of total imports by U.S.
Foodstuffs	1,515	9	92	1,615	17.4%
Woods	2	6	-	8	2.9
Fertilizers	-	65	-	65	1.7
Stone, sand, and gravel	6	-	12	18	0.1
Iron ore/products	7,287	2,753	69	10,109	16.5
Nonferrous ore/ concentrates	717	677	508	1,902	10.3
Coal, coke, and briquets	-	-	388	388	6.2
Total: Dry bulk	9,527	3,509	1,069	14,105	12.3%

Source: Maritime Administration estimates and author's calculations.

Imports of iron ore and semi-finished products account for most of this volume. Other metal ores and concentrates that the U.S. imports in quantity from South Atlantic nations are: beryllium, cobalt, columbium, manganese, platinum, tantalum, and vanadium. But the U.S. does not depend heavily on imports from the South Atlantic, and the volume of shipping required is not large.

The manufactured products that are transported through the South Atlantic do not require much shipping. Moreover, they are of small economic importance, at least to Northern Hemisphere nations.

On a typical day in the late 1980s, there will be about 1,200 oceangoing merchant ships at sea in the South Atlantic.[1] These ships will not, of course, be spread evenly over the area. They will be concentrated in the main sea lanes to North America and Europe. Along the main trade route to Europe, for example, shipping density will be something like one ship per 1,250 square miles, i.e., one ship per 35-mile square.

A second major maritime interest is fishing. About 12 per cent of the world's salt water fish catch is taken from the South Atlantic.[2] Half of this is taken by South Atlantic nations (Table 2). European Communist nations --

TABLE 2

SOUTH ATLANTIC FISH CATCH
(As percentage of total world catch)*

	1971	1975
South Atlantic nations only	5.6%	6.1%
All South Atlantic catch	10.5%	11.7%

*Excluding catch in inland waters

mainly the Soviet Union -- account for more than half the remaining catch. A wide variety of other nations -- including

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[1]Planning Systems Incorporated, Ship Density Estimates for Traffic along Selected Routes in the Year 1990, 15 December 1975

[2]Calculated from data issued by the Food and Agriculture Organization, Yearbook of Fishery Statistics: Catches and Landings, 1975, vol. 40, FAO (1976).

Spain, Japan, and Cuba -- account for the remainder of the catch. The South Atlantic does not appear to be an important fishing ground for the U.S. fishing fleet.

The bed of the South Atlantic, like other ocean bottoms, contains a wide variety of resources, but in quantities far smaller than are available elsewhere. For example, oil off the shore of West Africa amounts to only 3 per cent of the estimated world reserves of offshore oil; even if the oil under the waters of the Persian Gulf is excluded from the calculation, the proportion rises to no more than 7 per cent.[3]

Manganese nodules are another seabed resource that is often considered to be economically recoverable in the not-too-distant future. Nodules have been located in the Rio Grande rise, about 800 miles off the coast of Brazil and on the Agulhas Plateau, 300 miles or so off the coast of South Africa. These nodules contain a variety of minerals in addition to manganese -- nickel, copper, and cobalt, for example. But known reserves of these minerals on land amount to at least 30-50 years' supply; large-scale exploitation of these resources at sea, therefore, is likely to be many years away, especially in the South Atlantic.

In sum, the main maritime importance of the South Atlantic to the West is as the route for Persian Gulf oil to reach Europe and North America. As a source of other resources, the area is of only secondary maritime importance.

The South Atlantic has not been an area of direct competition between superpowers. There has been little to draw their fleets there. U.S. Navy ships transit the area and periodically exercise with South American navies but maintain no regular presence in the South Atlantic. The Soviet navy has conducted minor operations off West Africa since December 1970.

The motivation for Soviet naval activities in the South Atlantic is not clear. Acquiring naval facilities is only an intermediate goal. Forces operating from West African facilities could protect Soviet clients, intervene to promote Soviet interests, guard Soviet fishing fleets, or prepare to cut the South Atlantic sea lanes. Some of these motives suggest a Soviet interest in projecting power ashore; others

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[3]Calculated from data cited by Don E. Kash et al., Energy Under the Oceans (Norman, Okla.: University of Oklahoma Press, 1973), pp. 310-311.

suggest an interest in sea denial or sea control.

Bases in such places as Luanda or Conakry can serve either purpose. Ranges from these areas to the shipping lanes vary from 800 to 2,000 miles. Such ranges are easily within the combat radii of Soviet ships and land-based naval air. (They are, however, not within the reach of local air or naval forces.)

NAVAL FORCES OF SOUTH ATLANTIC NATIONS

If states as far north as Venezuela and Mauritania are included, there are 26 nations around the rim of the South Atlantic: 20 in Africa and 6 in South America.

According to the latest edition of Jane's Fighting Ships, 22 of these 26 nations have naval forces of some kind.[4] Generally, these are small forces with defensive, surveillance, and coast guard functions. For even these relatively simple functions, their capabilities are small and newly developing.

There is no data about naval budgets for the area, and adding up totals of diverse kinds of ships is a notoriously dangerous way of measuring naval capability. Naval manpower, however, can serve as a rough measure of the relative size of the effort. As Table 3 shows, the larger navies are those in South America. Nearly 90 per cent of the naval personnel in nations bordering the South Atlantic are in the South American forces, most of them in the Brazilian and Argentine fleets.

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[4] John E. Moore, ed., Jane's Fighting Ships, 1976-77 (New York: Franklin Watts Inc., 1976). Jane's shows only 21 naval forces; a modest Angolan force has been added, giving 22.

TABLE 3

NAVAL MANPOWER OF SOUTH ATLANTIC NATIONS

	Naval manpower	Ocean-going combatants*	Submarines	Aircraft
South America				
Brazil	45,300	13	10	90
Argentina	38,900	18	4	150
Venezuela	7,500	10	4	15
Uruguay	3,500	4	0	19
Africa				
South Africa	4,700	9	3	36
Nigeria	2,800	1	0	0
Ghana	1,300	0	0	0
15 other nations	2,700	0	0	0
TOTAL	106,700	55	21	310

*Ships of 1,000 tons or more

Source: Jane's Fighting Ships, 1976-1977.

The 100,000-plus naval personnel constitute about 10-12 per cent of the total military forces of the area. The NATO nations, by contrast, place about twice this proportion of manpower in naval forces.[5]

There are good reasons for the modest investment in naval forces by the South Atlantic nations. Most of them are poor; in the aggregate, they produce less than 4 per cent of the world's gross domestic product. Only four (Argentina, Gabon, South Africa, and Venezuela) have a per capita GNP greater than $1,000.

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[5]Manpower data taken from Jane's, as well as The Military Balance, 1976-1977 (London: International Institute for Strategic Studies, 1976), pp. 80-81.

Little is spent on military forces of all kinds, in only two of these countries was more than $1 billion spent on the armed forces in 1974.[6] On a per capita basis, the two largest spenders -- South Africa and Venezuela -- spend about a tenth as much as the U.S. and the USSR. If naval expenditures amount to about 25 per cent of total military spending, Brazil is now spending $500-700 million; Argentina, $200 million; and South Africa, $300-400 million. The U.S. Department of the Navy, by contrast, will spend more than $36 billion in FY 1977 ($33.5 billion for the Navy, $2.9 billion for the Marine Corps.)

There are other reasons as well. In most of these nations, manpower does not cost much. Navies, which are more capital-intensive, are harder to finance. Moreover, between 1945 and 1970, there was next to no extraregional naval presence in the area to raise concerns about the need for naval defenses. Probably the main explanation is that for most of the South Atlantic nations, the more immediate threats are internal or just across their land borders.

At this point, let us look briefly at six of the South Atlantic nations.[7]

> Brazil. The Brazilian navy now operates a 30-year old, 200,000-ton ASW (antisubmarine warfare) aircraft carrier. It carries 7 20-year-old S-2 aircraft and 4 old SH-3 ASW helicopters and a variety of other helos. The Brazilians have been operating 12 ex-U.S. World War II destroyers and 7 30-year-old ex-U.S. diesel submarines. They are acquiring 6 new missile-equipped destroyers (Vosper-Thorncroft MK-10 designs) and 3 new diesel submarines (British Oberon class). They have 16 oceangoing patrol craft, 6 minesweepers, 2 LSTs, 4 transports, 3 oilers, and a variety of smaller support ships -- survey ships, tugs, assault craft, and so on.

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[6] For data on Brazil or South Africa, see U.S. Arms Control and Disarmament Agency, World Military Expenditures and Arms Transfers 1965-1974 (Washington: U.S. Government Printing Office, 1976), pp. 21, 45 of Table II.

[7] These six forces were selected to show the variation in forces now operated by South Atlantic states.

The main missions of the force seem to be coastal defense and antisubmarine warfare. Protection of shipping along Brazil's 4,700-mile coastline is probably another mission. The need to defend seaborne imports of oil -- from Nigeria and elsewhere -- may shape the future of the navy. For example, Brazil is reported to be considering acquisition of a new helicopter carrier, presumably to replace the old carrier, thereby retaining the ability of the fleet to conduct "blue water" ASW operations.

The first of the new Niteroi 3,800-ton destroyers was expected to be commissioned this month. This will be Brazil's first missile-equipped ship.

Argentina. The Argentine navy operates a carrier of the same age and class as the Brazilian navy, but flies fixed-wing A-4 attack aircraft in addition to S-2 ASW aircraft and SH-61 ASW helicopters. The Argentines have 2 pre-World War II ex-U.S. cruisers, 8 ex-U.S. World War II destroyers, and 2 ex-U.S. diesel submarines. They recently acquired 2 British Type-42 destroyers, each equipped with 2 Sea Dart launchers. (The Sea Dart is a dual-purpose -- surface-to-surface and surface-to-air -- missile launcher.) In 1974 they acquired 2 new German-designed and built diesel attack submarines. In addition, the Argentines have 2 250-ton, 38-knot attack boats, armed with Israeli-manufactured Gabriel antiship missiles. The Argentine fleet includes, in addition, 17 other oceangoing corvettes or patrol boats, 6 minesweepers, 4 large amphibious assault ships, 2 transports, 3 tankers, and a variety of smaller icebreakers, tugs, survey ships, assault craft, and so on.

Like the Brazilian navy, the Argentine force appears to have coastal defense and antisubmarine warfare functions. Protection of coastal shipping is the mission for this force. To modernize the force, the Argentines reportedly plan to acquire 6 missile-equipped frigates of British design. In addition, the Argentine navy seems to have a modest sea-based offensive capability.

South Africa. The South African navy's main missions seem to be defense against sea-launched attack, protection of shipping around the Cape, and prevention of infiltration from the seas. But the navy appears to be too small to offer much protection to the 70 or so ships that round the Cape every day, even if they were formed into a single convoy.

At present, the South African fleet operates 2 33-year-old British destroyers, which carry helicopters but no antiship missiles. There are also 3 12-year-old frigates and 4 more formerly British ships from World War II days. When the British refused to supply submarines, the South Africans turned to the French, who supplied 3 Daphne class diesel submarines in 1970-71; 2 larger Agosta class attack submarines, ordered from France in 1975, should be ready before 1980. There are 5 20-year-old, 160-ton patrol craft in the force, soon to be greatly strengthened by the acquisition of 6 Reshef class fast attack boats, each armed with 4 Gabriel antiship missiles. In addition, the South African navy includes 10 20-year-old minesweepers, a fleet replenishment ship, and several smaller support ships.

Nigeria. The first warship ordered for the Nigerian navy was a 160-ton patrol craft, commissioned in 1961. In the mid-1960s, 3 10-year-old ships of the same design were bought from Britain. The Nigerian navy operates the only oceangoing naval ship -- more than 1,000 tons in displacement -- along the west coast of Africa. The 2,000-ton Nigeria was built in the Netherlands in 1964, at a cost of $14 million. Six patrol craft, none of them missile-equipped, were delivered in the early 1970s. At present, there are 6 small combatant ships on order; 2 will be equipped with a single Seacat surface-to-air missile launcher. The Nigerians also have 4 small landing craft, are building a new survey ship, and operating a tug.

The mission of the force seems to be coastal defense and, perhaps, support of forces ashore. The Nigerians have little modern naval power, and the effectiveness of their forces is questionable because of problems with training and maintenance.

Senegal The Senegalese have 3 P-4 class 250-ton patrol craft, which were built in France. Each carries 8 of the French SS-12 surface-to-surface antiship missiles. There are also 2 82-ton, 20-year-old ex-French patrol craft and 15 patrol boats less than 50 feet in length. The forces appear to have local defense, coast guard, and customs functions.

Guinea. The Guinean fleet contains 4 ex-Chinese Shanghai gunboats of 155 tons each and 8 ex-Soviet patrol boats of less than 100 tons apiece. When these ships are in operating condition, they can provide some surveillance and point defense capabilities.

At present, as we can see, the South Atlantic navies have only local defense functions and largely outdated equipment for performing them. The countries are modernizing their forces more with an eye on each other than with any plan to counter the forces of larger naval powers, such as the U.S. USSR, UK, or France. They may help deter naval attack by neighbors, and some could undoubtedly win local naval conflicts, but none is equipped to control local seas or project military power ashore.

NEW TECHNOLOGY FOR NAVAL WEAPONS

A review of developing naval technology should begin with an assessment of U.S. and Soviet naval developments. There are two good reasons:

First, much of the technology that will be in the hands of smaller navies 10 to 20 years hence is likely to be what is being developed and deployed now by major navies. In fact, many nations have acquired secondhand navies composed of older equipment that was given, lent, or sold to them by the superpowers.

A second reason for paying more attention to developments in the U.S. and Soviet navies is that the balance between them can have important implications for power relationships and local naval developments in the South Atlantic. If either the U.S. or Soviet naval forces should, by technological advance, gain clear superiority, local governments might well reconsider their interests and decide to improve relations with the stronger power, or revise their own naval plans or react in some combination in these ways.

A review of technological development for conventional warfare by the U.S. and Soviet navies shows much concentration on sophisticated and costly technology.

Consider the latest assessment by the Director, Defense Research and Engineering:

> In the maritime balance ... we still probably lead. The Soviets are developing formidable attack submarine technology, a variety of offensive strike cruise missiles, global command and control involving use of satellites, and a world-wide land-based naval aviation arm in the Backfire -- all of which lead to the ability to interdict the sea lanes so vital to the Western world.[8]

In the opinion of DDR&E, the U.S. lead on the oceans is eroding and, if we do not act, the Soviets may gain superiority.

Soviet Naval Development. Information about research and development by the Soviets in new naval technology is obviously limited. We know much more about their current forces than about the capabilities they may be developing for the 1980s and 1990s. Nonetheless, one may venture a few educated guesses.

More and better Soviet satellites -- for surveillance and communication -- are likely to be in the works.

The Soviets have been using satellites for ocean surveillance for 10 years. Their radar satellites have scanned the ocean's surface since 1967. During Okean-75, 2 radar satellites reported on a simulated convoy in the Bay of Biscay. According to Aerospace Daily (2 June 1976), "The radar spacecraft are able to sweep large areas with a signal strong enough to provide data that can be analyzed by commanders on land or sea." A radar satellite could detect large surface ships but might have difficulty distinguishing warships from large, fast merchant ships.

The Soviets deployed a second type of ocean surveillance satellite in December 1974. Satellites of this type do not use radar and are therefore assumed to be electronic listening or television devices. Either type of sensor could help with the problem of ship identification. An electronic listening

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[8]Malcolm R. Currie, Director of Defense Research and Engineering, Statement on the Department of Defense Program of Research, Development, Test and Evaluation, FY 1978, 18 January 1977, pp. 1-5.

satellite, of course, requires a "cooperative target," one that is operating its radars or radio communications.

The Soviets also seem to be developing anti-satellite systems. Development of anti-satellite capabilities resumed last year. Although the main purpose of these systems is not destruction of U.S. fleet satellites, such a capability, once developed, can certainly be used against them. If the U.S. Navy becomes heavily dependent on satellites for communications, command, and control, they will become attractive targets for the Soviets' anti-satellite capabilities.

History suggests that the Soviets will, almost certainly, improve their antiship missiles -- designing them to penetrate U.S. defenses better and to home on selected targets. They have had radar homing, antiship missiles -- PGMs of a sort -- mounted on oceangoing ships since the early 1960s. They now have 9 or 10 different types of antiship missiles deployed, and new classes are expected. Some will be replacements for systems that are now at least 15 years old; some will represent wholly new capabilities. All are likely to be more capable, with longer ranges, greater speeds, less vulnerable flight profiles, and improved seekers. The Soviets are well aware of the U.S. Navy's long and expensive programs to develop large, sophisticated, seabased air defense systems and will no doubt, avail themselves of electronic warfare measures to blind our defenses during coordinated missile attacks.

In the race against Western ASW technology, the Soviets have regularly introduced new generations of submarines. We can expect quieter Soviet submarines, with better sensors and more effective weapons. Here, too, we may see replacement of older units with improved capabilities, rather than increases in force levels.

Antisubmarine warfare enjoys high priority in the Soviets' doctrine and forces. All of their large new ships, including the carriers of the Kiev class, carry an ASW designation. Presumably, this designation is supported by a research and development program of equally high priority.

But ASW remains a formidable technical problem. According to one informed estimate, the Soviet navy might be able to sink 10 per cent of the opposing submarines in a short war at sea.[9]

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[9]Vice Admiral F.J. Harlfinger II, USN (ret.), cited by Norman Polmar, "Thinking About Soviet ASW," United States Naval Institute Proceedings, vol. 102, Number 879 (May 1976), p. 110.

Even Gorshkov admits that ASW remains difficult. In his recent book, he mentions "completely new principles of anti-submarine warfare." He suggests that detection ranges have been lengthened, that homing weapons have been improved, and that the speed and range of torpedoes have been increased.

About other dimensions of the Soviets' ASW capability, however, little is known. For example, the latest Jane's, which tabulates data about the sonar equipment of six navies, includes nothing about Soviet sonar. The book also lists two Soviet torpedoes but gives no data about their design and performance. This is not surprising; operational capabilities, such as detection ranges and torpedo guidance techniques, are much harder to observe than such design characteristics as ship's speed and numbers of missile launchers. It seems reasonable to assume, however, that the Soviets are improving their ASW sensors and weapons while they develop and deploy new types of ships and aircraft.

The Soviets have shown considerable interest in what are called unconventional or non-acoustic ASW techniques. They have worked with infrared, laser, magnetic, radar, and various other techniques to detect the presence of submarines. They have also made reference to satellite detection of submarine wakes. Soviet progress in these areas is counted among the gaps and unknowns in U.S. knowledge of Soviet naval R&D.[10]

The Soviets also seem to be adding a projection or intervention capability to their navy. Certainly, this is one potential use of the Kiev and the Yak-36 Forger VSTOL aircraft it carries. Moreover, the Soviets' amphibious capability, though small, is growing, and they have deployed amphibious ships to all of the major oceans. They also have the command ships and gunfire support forces usually associated with projection operations.

Lack of support is often called a main weakness of the Soviet navy. It is not that the Soviets lack the technology; they know how to replenish while underway. In fact, a review of ship construction programs during the past decade shows that support and underway replenishment are among the fastest growing sectors of the Soviet navy. In short, this deficiency is rapidly being corrected.

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[10] Ibid., p. 128

TABLE 4

NEW SHIPS ADDED TO
SOVIET GENERAL PURPOSE NAVAL FORCES
1966-76

	Number of new types	All types	
		Number of ships	Standard displacement
Nuclear submarines	6	53	234,600 tons
Support ships	3	38	181,900
Replenishment ships	5	23	144,075
Cruisers	3	17	123,360
Amphibious warfare ships	2	63	98,900
Destroyers	1	26	92,550
Diesel submarines	2	37	92,500
Smaller combatants	4	232	70,070
Carriers	2	3	70,000
Mine warfare ships	3	109	39,000
Frigates	0	40	38,000
Total	31	641	1,184,955 tons

U.S. Navy Research and Development. Let us turn to the U.S. Navy. The U.S. is now spending over $1 billion a year for research and development for sea control capabilities.[11] What kinds of programs are we buying?

The U.S. Navy is working hard to integrate its capacity for surveillance and target acquisition. By improving the amount of knowledge about enemy force dispositions and speeding the dissemination of this information, the Navy can enhance its effectiveness significantly. Some of these programs will employ aircraft and some will use satellites. The Navy is exploring the use of remotely-piloted vehicles (RPVs) for surveillance, seeking the answers to problems of range, speed, information rate, and launch and recovery operations.

The great advantage of the U.S. Navy lies in its carrier striking forces. The carriers' capabilities to project power ashore are greatly enhanced by precision-guided air-delivered munitions. Since fewer sorties are required to destroy specific targets, more targets can be attacked. The so-called "smart bombs" will also enable the fleet to take enemy overseas bases under fire with less risk of unintended damage to surrounding areas.

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[11] See H. Tyler Marcy, Assistant Secretary of the Navy for Research and Development, Statement on Support of Research, Development, Test and Evaluation, Navy, FY 1978 Budget Request, 24 February 1977.

The U.S. Navy is also developing its own antiship cruise missiles -- Harpoon and Tomahawk -- and plans to deploy them in submarines, aircraft, and surface ships for attacks on enemy surface ships. These weapons are accurate, long-range, and relatively inexpensive. But they will rely heavily on improvements in surveillance and communications.

Defense against antiship missiles is also receiving major emphasis in the Navy. This money is supporting development of an integrated, fast-reaction, and very expensive ship-based anti-missile system called Aegis. The Navy is also funding development and production of short-range, self-defense systems -- as well as electronic warfare measures -- for surface ships. Whether these systems will yield real gains relative to newly developing missile capabilities cannot, of course, be predicted now.

Antisubmarine warfare is also funded at a figure which does not include expenditures for underseas surveillance. At present, the main sensor employed for detecting submarines is the passive sonar. This device listens for the noise made by the hull or machinery of the submarine as it moves through the water. The emphasis in new sonar technology is to make the "ears" more sensitive, to enable them to hear weaker or more distant noises. But detection ranges remain small relative to the expanses of ocean, and ASW still awaits the "technological breakthrough" that is needed to offset the advantage now held by the nuclear submarine.

The Navy is improving its present underseas surveillance systems. (New effects are underway to provide a mobile underseas surveillance capability that can be deployed into the South Atlantic. Data from these platforms can be sent to shore by satellite for processing and the results sent back to the fleet for tactical action. These efforts will improve naval capabilities significantly, at relatively modest cost. Improvements in fleet ASW include the acquisition of better sensors, improved data processing, and new weapons.

Implications for U.S./Soviet Naval Balance. Where will all this leave the balance between the U.S. and Soviet navies? The question cannot be answered in detail, but seven broad judgments about how naval warfare might go in the future are offered here:

1. Although basic naval missions remain unchanged, new developments are raising the possibility of application in the South Atlantic. The Soviets seem to be acquiring the capability to intervene against modest opposition. U.S. ASW capabilities in the South Atlantic, on the other hand, may gain real potential from mobile surveillance systems. But neither power may find it an attractive area for conflict because of logistics or political problems.

2. Both the U.S. and Soviet navies are relying more and more on satellite systems for surveillance and command and control. This means that the ability to conduct naval warfare will be less dependent on geography than in the past. Control will become more centralized, and naval leaders will be able to control naval operations in the South Atlantic as easily as operations in home waters. It may therefore be possible to limit -- in time and space -- a naval conflict that breaks out by mischance.

3. In a full-scale war, satellites can be so important that they may be attacked and destroyed. If they are, the pace of naval warfare may turn out to be far slower than we now envision.

4. Whatever the fate of satellites, large surface ships are likely to be the first major force to sustain large losses. This is as true of the Soviet Kievs, Krestas, and Karas, as for the U.S. carriers and cruisers. The most likely outcome of naval combat on the surface of the oceans is a double knock-out, with both sides losing large portions of their surface forces.

5. When surface forces are intermixed, the one that strikes first gains an advantage; a surprise attack increases that advantage. That side is sure to get off its surface-launched antiship missiles, and if tactical surprise is achieved, may delay or even avoid retaliation. The vulnerability of surface ships to antiship missiles, therefore, makes for an unstable situation when two surface forces are in the same area at a time of high tension.

6. The continuing naval battle -- if there is one -- will be fought out under the seas. There the situation is different. If there is no unexpected technological breakthrough a quick victory over submarine forces is impossible. But the West has important advantages in both submarine and antisubmarine warfare, and U.S. ASW capabilities relative to the Soviet submarines seem to be growing. In a long war, then, the Soviets would lose not only their surface forces but their submarines as well.

7. On land, precision-guided munitions are said to reduce the likelihood of damage to unintended targets. At sea, this problem remains. A radar homing missile, for example, will attack any target that comes within its seeker pattern, be it neutral merchant ship or enemy destroyer. Military commanders have generally taken this kind of risk and neutral ships have been hit by antiship missiles in both the Indo-Pakistani war of December 1971 and the Arab-Israeli war of October 1973. But, given the density of shipping in the South Atlantic sea lanes, navies are likely to have difficulty in hitting the ships of a single nation.

NEW TECHNOLOGY FOR SOUTH ATLANTIC NAVIES

How much of this new U.S. and Soviet technology is likely to see its way into the navies of South Atlantic states in the next 10 to 20 years? What are the implications of this trend?

It seems unlikely that new technologies, per se, will add new missions for the navies of the South Atlantic states. Most likely, their missions will remain local defense, surveillance, and ASW. The main effect of new technology will be in enhancing their capabilities for these missions.

Satellite surveillance systems are probably beyond the means of all but the superpowers. The costs of nuclear submarines will preclude their development and acquisition by all but a few states, none in the South Atlantic. This is also true of most modern ASW systems.

But there are now a variety of naval missile systems as well as small ship sonars, radars, and combat information systems on the market. Some of this technology is now in the hands of South Atlantic navies; for example, the Gabriel, the Seacat, the Otomat, the SS-12, and more will undoubtedly be acquired. Table 5 lists the main missile systems now available for naval applications.

TABLE 5

PRESENT NAVAL MISSILE SYSTEMS

A. SURFACE-TO-AIR MISSILE CHARACTERISTICS

Developer	Name(s)	Guidance	Range (miles)	Speed
France	Masurca	Command, SAR	20	M3.0
UK	Seacat	Command	15	Subsonic
UK	Seadart	SAR	50	M3.0
UK	Seaslug	Beam radar	28	M1.0+
UK	Seawolf	TV plus radar	4	M2.0

B. SURFACE-TO-SURFACE MISSILE CHARACTERISTICS

Developer	Name(s)	Guidance	Range (miles)	Speed
Australia	Ikara	Command, homing torpedo	?	Subsonic
France	Exocet	Inertial, radar homing	28	M0.95
France	Malafon	Radio command	7.5	Subsonic
France	SS.12M	Wire guided	3.7	Subsonic
Intl	Otomat	Radar homing	32	?
Israeli	Gabriel	SAR, TV	12.5	Subsonic
Italy	Seakiller	Beam radar	6.0	Subsonic
Norway	Penguin	Inertial, IR	17.3	M0.7
Sweden	Rb08A	Radio command	150.0	M0.85
USA	Asroc	Homing torpedo	6.0	Supersonic
USA	Harpoon	Radar homing	60.0	Subsonic
USA	Tomahawk	Radar homing	300.0	Subsonic

Source: General Dynamics Corporation, The World's Missile Systems, 3rd edition, November 1976

The acquisition of these kinds of capabilities by littoral states is likely to continue. But the implications for the regional naval situation depend on how far it goes, and this raises the question of affordability.

This is a hard question to answer. Good data about the costs of new naval systems is rarely available. There is not (and there cannot be) any data on the costs of Soviet arms transfers. Moreover, naval budgets for South Atlantic nations must be estimated with rough techniques on rough data. The affordability of new forces and capabilities depends on the availability of credit, as well, and this ties back to broader strategic issues.

Table 6 gives estimates of the unit costs implied by transactions involving naval systems between 1973 and 1976. Where appropriate, the estimates have been adjusted to put them on a common basis of 1976 dollars. The available data -- taken from the IISS Military Balance, General Dynamics' The World's Missile Systems (1976), and such periodicals as the International Defense Review -- seldom tell anything about the conditions of sales; i.e., support, training, spare parts may or may not be included.

TABLE 6

UNIT COSTS OF NAVAL SYSTEMS

ANTISHIP MISSILES	
Exocet - including launcher	$ 600,000
Otomat	280,000
Gabriel	90,000
Seakiller	60,000
Harpoon	500,000
SEA-BASED ANTI-AIR MISSILES	
Masurca	$ 340,000
Seawolf	41,000
AIRCRAFT	
P-3C land-based ASW	$18,600,000
S-3 ASW aircraft	12,500,000
F-4E fighters	4,600,000
Lynx helicopters	2,500,000
Super Frelon Helicopter	3,000,000
Sea King helicopter	3,270,000
SHIPS	
Diesel submarines	$ 37,100,000
Large destroyers - 7000 tons	110,000,000
Frigates - 1,500 tons	84,500,000
Missile Patrol Boat - 234 tons	12,000,000
Missile Patrol Boat - 140 tons	5,900,000
Gun Patrol Boat - 120 tons	2,600,000

The next step in examining how much of such technology can be acquired by South Atlantic navies is to estimate their budgets. This, too, can only be done in a rough way. ACDA publishes data on military expenditures but shows only total spending, not the proportion allocated to navies or investment in new naval capabilities.[12] Table 7 gives the ACDA data on arms imported by 19 of the 26 South Atlantic states; military imports by states omitted by ACDA are presumably smaller.

TABLE 7

TOTAL ARMS IMPORTS BY SOUTH ATLANTIC NATIONS, 1965-1974
(Millions)

Brazil	$475*	South Africa	$358*
Argentina	293*	Nigeria	131
Venezuela	291	Zaire	112
Uruguay	47	Guinea	33
		Ghana	25
		Ivory Coast	18
		Congo	11
		Cameroon	6
		Dahomey	6
		Senegal	6
		Togo	6
		Equatorial Guinea	3
		Gabon	3
		Mauritania	2
		Liberia	1

*Nations with significant indigenous shipbuilding and weapons assembly capabilities

For those nations which do not have local arms-producing industries, arms import data provides a measure of ability to finance new hardware acquisitions. Of course, not all the expenditures shown in Table 7 procure naval systems. Since navies generally have a higher ratio of hardware costs to manpower costs than other forces, perhaps 50 per cent of these expenditures go for new naval systems. If this past history is a reasonable predictor of the future, funding available for naval procurement will remain quite small, even if substantial growth rates are assumed.

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[12] U.S. Arms Control and Disarmament Agency, op. cit., table IV.

Table 8 describes and costs a nominal small, but modern, navy for the 1980s. At an annual cost of $115 million, such a navy seems to be easily within reach of the regional powers -- Brazil, Argentina, South Africa, and Nigeria.

TABLE 8

NOMINAL "SMALL" NAVY FOR 1980s
(Million)

Number in force		Procurement cost	Annual operations	Twenty-year systems cost
3	Diesel submarines	$ 37.0	$ 3.5	$ 321
2	Missile frigates	84.5	5.0	369
2	Frigates	70.0	4.0	300
5	Corvettes	40.0	3.0	500
10	Fast patrol boats	12.0	0.7	260
10	P-3 aircraft	18.0	0.8	340
10	ASW helicopters	3.0	0.3	90
	SUBTOTAL - Force investment and operational costs			$ 2,180
	Command, training and administration (1/3 of operating costs)			115
			Total cost	$ 2,295
			Average annual cost	$ 115

Thus, one result of the spread of new technology might be an increasing imbalance between the naval strengths of the regional powers and those of the less developed South Atlantic states. On net, these larger regional powers should be better able to carry out offensive naval actions against their poorer neighbors. This contrasts with the common belief that the new technologies will favor the defense. The reason is not necessarily in the technologies themselves, but in the relative economic strengths of the South Atlantic nations.

Last, there is a question of whether the regional powers' navies -- with larger forces of frigates and patrol craft armed with sophisticated antiship missiles, new diesel submarines, land-based air, PGMs, etc. -- could deny the superpowers the naval capability to project forces into the South Atlantic. The answer is: probably no. And the reason is relative economic strength as well. No doubt, a "new technology navy" could

inflict an initial shock if it struck first at a U.S. or Soviet force in the South Atlantic. This possibility should make the superpowers less likely to engage in casual "gunboat diplomacy" against any nation with such a navy. But it is clear that either the U.S. or Soviet fleets could soon muster the naval forces to destroy completely even the largest of the regional navies.

The Soviet Union and the South Atlantic: Political and Economic Considerations*

by

Uri Ra'anan

Soviet policies and operations have to be examined on two levels (or, perhaps, viewed in two dimensions): In some ways, the Soviet leadership performs in a manner resembling the actions of more conventional powers, concerned with resource and other economic problems, defense considerations, the promotion of diplomatic relationships, etc.; however, the fact remains that the U.S.S.R. is subject also to less conventional drives and motivations, subsumed, for the sake of convenience, under the heading of "ideological," including global hegemonistic aspirations.

The first of these two aspects, of course, provides a more convenient framework for discussion, dealing, as it does, with relatively concrete topics. Among these, the question of resources and resource constraints looms in the foreground.

The Achilles heel of the Soviet economy, as always, remains agriculture -- to be specific, the disproportionate investment in manpower and money devoted to the rural sector, compared with the (low) return it produces, particularly in terms of its ability to feed the Soviet population adequately and at a consistent level. For ideological reasons, the Soviet leadership remains wedded to two decidedly non-economical propositions: (a) That the U.S.S.R. require autarchy in grain; and (b) that collectivization must be intensified remorselessly, as a categorical imperative. Given the climatical constraints within which Soviet agriculture has to labor, proposition (a) is less than rational; given the fact that, on an insignificant proportion of the total arable soil of the U.S.S.R., the so-called "private plots" manage to produce a lion's share of the land-grown protein intake of the Soviet urban population, the periodic "campaigns" to pursue proposition (b), i.e. reduce the size and manhours devoted to these tiny plots, are decidedly counterproductive.

In view of these factors, for a number of years already the Kremlin has been implementing a "drive to the sea," as the phenomenal growth in the Soviet fishing fleet and

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*This paper was prepared subsequent to the last seminar session for the purpose of providing additional background material.

industry demonstrates, to compensate for the limited protein production on dry land that has resulted from the economic irrationalities described here. On the sea, the Soviet leadership does not feel constrained by its inner compulsions to practice extensive, rather than intensive, cultivation or to tighten the reins of collectivization, irrespective of the costs.

Therefore, quite apart from the extremely useful "by-products" of the vast increase in Soviet trawlers (e.g. electronic eavesdropping and other sophisticated technologies devoted to the precise location and tracking of U.S. nuclear submarines and other vessels), the Soviet fishing industry is playing an increasingly important role in feeding the Soviet population; indeed, it is beginning to sell parts of its catch, in the less-developed portions of the globe, sometimes to the very governments off whose shores the fish are caught.

During the last decade, the Atlantic as a whole has occupied an extremely important place in the expanding Soviet fishing industry, and is intended to continue to do so in the current Tenth Five-Year Plan, judging by the data available. Since the early 1960s, the Atlantic has increased its share among the main Soviet fishing areas from well under one-half to well over fifty percent of the total, and this proportion of the catch is to be maintained, if not enlarged. However, it is the North Atlantic from which the additional tonnage has emanated and this portion of the ocean is planned to continue serving as the prime contributor to Soviet fishing.

On the other hand, the region of direct concern to this study (subdivided into the sectors of the "East-Central Atlantic, West-Central Atlantic, South-East Atlantic, and South-West Atlantic"), has remained relatively stable in its contribution to the total Soviet fish harvest, being the source of somewhere between one-sixth and one-fifth of the total catch per annum during the last decade. What has changed dramatically, however, are the contributions of the individual sectors within this region:

A decade ago, by far the largest share was produced by the "South-West Atlantic," ie. off Latin America's Atlantic coast. In recent years, however, this sector has declined into insignificance, being replaced by the "East-Central Atlantic," i.e. the waters off the shores of West Africa. The reason, of course, is primarily political, the Soviet Union having been involved in some extremely nasty altercations,

between 1967-68 and 1970-71, with the three Latin American states concerned -- Argentina, Uruguay, and Brazil -- over unlicensed Soviet fishing activities in their respective economic zones.

In view of this development, Soviet South Atlantic trawlers recently have concentrated more on West African littoral waters, that now contribute the same twelve percent of the total annual Soviet catch that emanated once from the seas off the Latin America shore. West African littoral states even have become customers for the Soviet catch, although it is doubtful how long this state of affairs will continue and how soon the Soviet fishing fleet will encounter the same political problems with West African governments that led to earlier conflict with the Latin Americans.

In the case of southern Africa, i.e. Angola, Namibia, and the Union of South Africa (the "South-East Atlantic"), major fluctuations have occurred already: From four percent, a decade ago, this region, by 1972, had increased its share of the total Soviet catch to almost ten percent, only to decline once more to the previous dimensions.

Whatever may be the Soviet fishing industry's current plans, the political problems it encountered off the Latin American coast, in the late 1960s and early 1970s, have been replicated recently off the shores of New England and Canada. Consequently, the projected North Atlantic catch may be encountering obstacles that could trigger a renewed Soviet fishing thrust into the South-Central and South-Atlantic regions, some of which witnessed similar conflicts in the past, but where a growing Soviet naval "presence" now may be calculated more effectively to overawe the relatively weak littoral states.

In this context, there may be bureaucratic problems complicating full Soviet utilization of maritime resources in the South Atlantic area, particularly if Soviet naval "back-up" were to be required. For instance, from open sources it is not entirely clear precisely which of the four main Soviet Fleet Areas (Northern, Baltic, Black Sea, Pacific) bears responsibility for the South Atlantic region. According to some data, responsibility in the past may have been shared (perhaps between the Baltic and Northern Fleets); if this is correct, such arrangements would not make for particular efficiency. If the South Atlantic really was "no one's baby," at least prior to the "Guinea Patrol," this might explain its relative "benign neglect" (at least from a naval viewpoint) during previous decades. Nor is it entirely clear to what

extent Soviet naval and maritime activities in this region are fully integrated now -- apart from tracking and electronic eavesdropping operations by the "trawlers" of the U.S.S.R.

The question of responsibility and coordination may not be the only bureaucratic constraint under which Soviet activities in the South Atlantic region have labored, at least until the beginning of the present decade. Perhaps a more serious obstacle for effective policy analysis and decision-making has stemmed from a dirth of Soviet expert "cadres."

The regional "Institutes" under the formal sponsorship of the Soviet Academy of Sciences (staffed, at least in part, by members of the Soviet security and intelligence communities and supplied with classified material) began only during the 1960s to concern themselves with the areas that constitute the focus of this study:

The African Institute, under the leadership of Academician Potekhin, was founded only in 1959 and underwent considerable vicissitudes with regard to policy direction. In its initial period, there was a tendency to stress the artificiality of the post-colonial frontiers of newly-independent Sub-Saharan states (cutting, as they do, across more "natural" ethnic and linguistic lines); consequently, the Institute's publications indicated that massive territorial revision, accompanied by military confrontation, probably was unavoidable in Africa. As the "out-power," the U.S.S.R. had little to lose and much to gain from such conflict. However, very soon it transpired that the individual African governments, with a few exceptions, were wedded to these same artificial frontiers and most reluctant to tolerate territorial revisionism that would endanger their respective states to a greater or lesser extent. Moreover, apparently it also occurred to the decision-makers in Moscow that the game of support for irredentism might be a dangerous pastime for the leaders of a multi-ethnic state like the U.S.S.R., with a large number of oppressed and resentful nationalities of its own. Consequently, the staff of the African Institute was transformed into solid, conservative upholders of the African territorial status quo, a posture that received operational expression in overt military support of Nigerian centralist forces against the Biafrans. However, even this attitude is not entirely tenable, at least with any degree of consistency, because of Soviet involvement (on both sides of the fence) through military aid to countries engaged in violent frontier disputes -- to mention only Somalia and Ethiopia. Moreover, needless to say, Soviet support of the territorial status quo always excluded Portuguese possessions

and southern Africa (precisely the area now reaching "the top of the agenda").

With regard to Latin America, the dirth of trained Soviet cadres and consequent staffing problems were even more pronounced. As late as the Twentieth Party Congress of the C.P.S.U., in 1956, Anastas Mikoyan complained that, in previous decades, only about one or two dissertations had been written in the whole Soviet Union on topics relating in any way to Latin America. Under these circumstances, the establishment of a properly functioning Institute on Latin American affairs, equipped with the necessary expertise, constituted a more difficult and drawn-out project even than the development of the African Institute. Of course, the advent of Castro and Castroism provided an important catalyst for Soviet involvement in Latin American affairs; however, with the exception of the immediate periphery of Cuba, Soviet activities in this region began to blossom fully only at the beginning of the present decade. (In this connection, it is noteworthy that Soviet trade with Latin America, particularly Brazil and Argentina, has increased substantially; Soviet sale of arms has gone up also, but so far mainly on the Andean portion of Latin America -- e.g., Peru).

It is not suggested that any of the constraints mentioned here have done more than delay the advent of serious Soviet operations in the countries bordering the South Atlantic on its African and Latin American shores. In West Africa, Soviet involvement was initiated, at the beginning of the 1960s, with surrogate military operations in the Congo (at Stanleyville), and with the recognition, at the Twenty-Second Party Congress of the C.P.S.U., of the single-party elites of Ghana, Guinea, and Mali as honorary fraternal associates of the international communist movement (Congo-Brazzaville being added to their number subsequently). In the case of Ghana, the Soviet commitment increased to the point at which Soviet and East European security personnel actually fought on Nkrumah's behalf, against the supporters of the coup that achieved his overthrow. In the Nigerian Civil War, Soviet military assistance to the centralist forces was direct in terms of materiel and surrogate with regard to personnel (Egyptian pilots).

However, the incidents referred to could be regarded still as sporadic and episodic; with the climax of conflict in the Portuguese colonies, on the other hand, i.e. with the beginning of the present decade, the Soviet role in West Africa became far more systemic, as is demonstrated by the events

leading to the establishment of the "Guinea Patrol" and subsequent shore facilities of one kind or another that Soviet representatives arranged with Guinea-Bissau, Cape Verde Islands, Senegal, Sierra Leone, Nigeria, and Guinea itself. This qualitatively new stage of developing the infrastructure for an eventually significant Soviet "presence" passed its first test with the "Cuban" surrogate operation in Angola, based on massive Soviet "lift" and logistical endeavor. There is little doubt that this enterprise constituted a mere prelude to much larger operations in southern Africa, to be implemented when the political constellation is deemed favorable.

The general thrust of Soviet plans for the region as a whole can be distilled, to some extent, from the policy slogans published biannually in Moscow, on the occasion of May Day and the Anniversary of the October Revolution. Until a decade ago, these slogans were extremely detailed, covering practically the whole gamut of the Soviet Union's international relations. During subsequent years, the number and specificity of these slogans diminished, in part perhaps because the Soviet leadership realized that this material provided a valuable "code" concerning the Kremlin's intentions -- and that Western analysts had learned profitably to "decipher" this material. Another reason may have been that the Soviet bureaucracy increasingly was encumbered by having to review, in toto, Soviet relations with an ever larger number of states, regimes, and movements, at brief intervals of a mere six months or so. However, recently the number of the slogans has begun to increase once again: In preparation for May Day of 1977, Moscow published twenty-four slogans on international affairs, of which one concerned the Third World in general, and three others dealt more specifically with the region analyzed in this study. One of these slogans concerned Latin America as a whole, but the other two dealt with specific African Atlantic-coast countries -- one mentioning, by name, Angola, Guinea-Bissau and Cape Verde Islands (as well as East African Mozambique), while the other was devoted to Namibia and the Union of South Africa (as well as to Zimbabwe). This list would seem to provide a fairly reliable indicator of the Soviet operations plan for the (medium-range) future.

Several strategic factors are likely to stimulate this plan for the better part of the coming decade. In this connection, it has to be remembered that major and vital Western Sea Lines of Communications with Middle Eastern oil sources now pass around the Cape of Good Hope (and will

continue to do so, despite the reopening of the Suez Canal). These SLOCs run fairly close to the Atlantic shores of South, Southwest, and West Africa. Moreover, given the greatly extended ranges and improved accuracies of the new generation of sophisticated weapons (particularly the Precision Guided Munitions), the relatively narrow gap between the West African coast and the northeastern "bulge" of Brazil rapidly is becoming a strategic "choke point." Thus, the southern and central portions of the Atlantic now must be viewed as areas of obvious and growing Western vulnerability that are likely to attract Soviet attention increasingly during the coming years.

Moscow's development of a mid-Atlantic "security triangle," between Cienfuegos, Conakry and the Cape Verde Islands, provides an excellent listening post from which the U.S.S.R. can monitor Western traffic transitting the South Atlantic on the way from the Persian Gulf to the Mediterranean and North Sea. Moreover, it provides a springboard from which the Soviet Navy could interfere with American "lift" and resupply operations to NATO allies, in case of a confrontation in Europe.

In this connection, one has to take seriously Soviet defense literature and its lucid reflection of Soviet thinking about a full scale conflict between the superpowers, including a nuclear exchange. Unlike many Western analysts, Soviet military experts specifically reject the concept of a war lasting no more than a few days. Soviet defense literature insists that, even after a nuclear exchange, however devastating, the conflict will continue, and indeed, can be won, by the classical method of seizing and holding vital ground. Consequently, fighting will continue for many weeks and even months, so that reinforcements, military resupply and replenishment (particularly of fuel) will play a vital role, as in pre-nuclear conflicts. Given the U.S. defense posture, with its heavy dependency upon America's ability to rush across the required reinforcements in men and materiel to our European allies, a Soviet mid-Atlantic capability of interferring seriously with such traffic must be viewed with considerable concern. In this context, it should be recalled that Admiral Gorshkov, both in his famous series and in the subsequent book, devoted inordinate space to the Battle of the Atlantic, both in World War I and II, and identified so closely with the role of German U-boat commanders, that, in a Freudian slip, he referred to the Allies in the Second World War as "the enemy" (forgetting, apparently, that this "enemy" included the Soviet Union itself!)

However, no less important than this projected wartime role of the U.S.S.R. in the Atlantic, is the part to be played, particularly by the Soviet Navy, "in times of peace" (a topic to which Admiral Gorshkov devotes a special chapter, both in the series and in the book). Here, the South Atlantic is of special interest, precisely because it has become one of the major arenas of Soviet "surrogate operations," as demonstrated by the "Cuban" action in Angola.

The "surrogate" approach, paradoxically, may have derived a major boost from the very symbol of the recent "detente" period, naemly, the May 1972 Moscow Summit between Mr. Brezhnev, President Nixon, and Dr. Kissinger -- to be more precise, the Declaration of Principles that followed the Summit. That Declaration reflected U.S.-Soviet discussions, during the meeting, devoted to "gray areas," i.e. regions outside the immediate NATO-Warsaw Pact perimeters in which conflict in endemic but where the superpowers had not laid down "ground rules" for themselves. An implicit understanding was reached that the superpowers and their allies would not exploit trouble in such regions to gain unilateral benefits for themselves, would not fuel and stir up such conflicts, but, on the contrary, would inform each other of impending conflagrations and coordinate action to contain fighting and to bring it to an early end.

The U.S.S.R., as on many other occasions, apparently took a narrow legalistic approach toward this understanding, i.e. that it applied perhaps to the members of the Warsaw Pact, but certainly not to three communist states that happened to lack formal membership in that Pact, namely Cuba, Vietnam, and North Korea. This interpretation, of course, opened the road to various "surrogate" operations by forces of these three countries (prior to Angola, during October-November of 1973, elements from all three were injected into the Middle Eastern war zone).

These "surrogate" operations, however, require a very significant role to be played by the Soviet Navy, not merely in providing the required "lift" and other essential logistical support, but also, if necessary, to interpose itself between a victorious, pro-Soviet, "surrogate" force and any potential Western counteraction.

Considerable attention is devoted in Gorshkov's writings to such "picket fence" naval actions, to isolate a battlefield in which "our side" is doing well. For instance, in his book, he states:

> "The importance of navies in peacetime is confirmed by many examples from Russian history. The power of the Russian Navy under Peter I was the main factor which deterred the militarist intentions of the British who were attempting to come to the aid of a Sweden suffering defeat in the war with Russia.....
>
> In 1783, the Czarist government, utilizing the superiority of its fleet in the Black Sea, annexed the Crimea without a war, and brought it into the structure of the Russian state, while in 1830 a favorable defensive alliance with Turkey was concluded without conducting military operations. Owing to this alliance, the presence of major forces of the Russian Navy and ground forces in the area of the Bosphorus and the Turkish capital was established."

It would be an understatement to say that these analogies are most revealing. In all three instances of "peacetime use" of the Russian Navy, the Russian state achieved an expansionistic goal: In defeating Sweden, Russia annexed the Baltic coast, from the Karelian Isthmus to Riga, while in 1783, the Crimea (territory under Turkish suzerainty) was seized before the British and Turkish fleets could prevent this act of annexation, and, in 1830, Turkey became a Russian protectorate, with Russian troops and naval units sitting in Turkey's capital city, again, with the Russian Navy "blocking" any British rescue operation. In other words, Admiral Gorshkov is praising the role of the Russian Navy, in "peacetime," not as a defensive tool, but as a shield behind which an expansionistic policy could be carried through without hindrance from the allies of the victims. As any student and analyst of Soviet affairs knows, historical analogies are utilized in Soviet political and defense literature as Aesopian references to highly current matters. The descriptions given in Gorshkov's book fit in very neatly with the "picket fence" concept discussed in this study. Indeed, this is precisely the reason for which the "Guinea Patrol" was established, so that this topic has particular relevance to future Soviet activities in the South Atlantic region -- certainly in the southern half of Africa, and, who knows, perhaps, one day, even along the southern shores of the Caribbean.

It may be objected that, at this stage, the Soviet Navy does not necessarily possess the capabilities required to perform the role outlined here. However, this objection

may be irrelevant, since it would come into play only if the United States were to challenge interposition of Soviet vessels. (The capabilities in question and related qualitative and quantitative issues, including force structure, are discussed in another study). A decision to challenge, it must be remembered, is a political and perceptual issue, rather than a purely military question. In this connection, the Leninist penchant for seizing and keeping the initiative, which is so typical of the Soviet modus operandi, plays a very important role. In a "picket fence" operation, the Soviet Navy would have established a fait accompli, and it would be up to the United States to "do something about it," i.e., if necessary, to "fire the first shot across the bow." That, however, is a very difficult decision to make, particularly for an open society laboring under significant constraints -- bureaucratic, congressional, ethical, etc.

The Soviet leadership and, particularly, Admiral Gorshkov have demonstrated considerable aptitude for comprehending and manipulating these perceptual factors. It may be appropriate, therefore, to conclude with another quotation from Admiral Gorshkov's work:

> "One more trait is inherent in the Navy as a component part of the armed forces, and that is the ability to demonstrate clearly the real combat might of one's own state in the international area. This feature is usually employed by the political leadership ....to deter potential enemies. It should be noted that the arsenal of the means for such demonstrations utilized by the diplomats of these countries is constantly expanding.
>
> As we know, in recent years there have been frequent exhibitions of missile weapons, military aircraft, and diverse military equipment conducted on an international scale, which, in addition to their commercial purposes, are aimed at another goal -- to demonstrate to potential enemies the perfection of this equipment, to have an effect on their morale, to intimidate with the power of their weaponry while still at peace, and to fill potential enemies beforehand with the thought of the hopelessness of their efforts to combat aggression....It is far from true that this type of propa-

ganda method always leads to the intended goals, primarily because the weapons being demonstrated appear before the viewers only as a potential threat. The navy is another matter. Warships appearing directly off the shore represent a real threat of operations whose time and execution is determined by those in command. Whereas such a threat was quite great in the past, today it is much more so, since modern warships are platforms for nuclear-missile weaponry and aircraft whose range can cover the entire territory of a state.

In many cases naval demonstrations have made it possible to achieve political goals, without resorting to an armed struggle merely by exerting pressure through one's own potential power and by threatening to initiate military hostilities.

Thus, the navy has always been an instrument of state policy, and an important support for diplomacy in peacetime. This is fostered by the very nature of a navy and the properties inherent in it, namely a constant high degree of combat readiness, mobility, and the ability to concentrate one's own forces in selected areas of the ocean in a short time. Moreover, the neutrality of the waters of the World Ocean makes it possible to carry out the movement and concentration of naval forces without violating the provisions of international law and without presenting the opposing side with formal reasons for protest or other forms of counteraction.

The ability to threaten a potential enemy by the very fact of their existence has transformed ....navies....into a deterrent force and has raised the building of them to the level of one of the most important issues of the political contest in the international arena."

"To fill potential enemies beforehand with the thought of the hopelessness of their efforts to combat aggression..." -- what a pregnant thought this is and how applicable to the type of naval demonstrations described

by Admiral Gorshkov! For the reasons discussed and presented in this study, the South Atlantic is likely, during the coming decade, to provide an almost ideal arena for Soviet politico-military operations of this kind.