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Most discussions of Soviet projection capabilities view those capabilities only with respect to direct or immediate U.S. interests—interdiction of SLOCs, for example, is a common and very important theme. This paper invites a wider view, a North American as opposed to the commonly more narrow U.S. view, and draws attention to other areas that might see Soviet naval involvement of their expanding capabilities.

SOVIET PROJECTION CAPABILITIES: A VIEW FROM NORTH OF THE BORDER

by

C.G. Jacobsen

The 1960s and 70s have seen the emergence of significant Soviet distant power projection capabilities, air and naval. While the original impetus for their development was strategic and defensive, at least in the case of the new naval means, it is clear that distant state and client interests, Third World presence requirements, have today become a major developmental determinant.

The emergence of the Red navy from a coastal defense formation to a force of global strategic importance unfolded through the 1960s and early 1970s. There were two original rationales. The most important was strategic, defensive. There was a need to counter the threat to the homeland posed first by U.S. carrier-based nuclear-armed aviation (since the mid-1950s), later and more dramatically by the Polaris Poseidon

fleet of strategic submarines. Subsequently, with the developing of a Soviet sea-based strategic capability, the defensive requirement for forward deployment came to be supplemented by an offensive dictate. (This offensive dictate could of course also be seen as defensive if one adheres, as most do, to the tenets of deterrence theory.) Early submarine-launched ballistic missiles, SLBMs, had limited range. It was a technological restraint that was seen by Washington to require forward deployment in the Mediterranean and especially the Norwegian Sea. Moscow was faced with analogous deployments in the western Atlantic or of securing the surge potential to suitable firing positions of forces deployed beyond their natural firing range. The latter alternative was preferred. The support vessels required for surge protection were procured.

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The situation changed in the early 70s. The Soviets began to deploy their long-range *Delta*-class SS-N-8 (and later SS-NX-18), submarine-launched ballistic missiles capable of hitting "San Diego, California, Quito, Recife, Mozambique, Indonesia and Hawaii from the haven of the Kola inlet."¹ The still modern *Yankee* class was also scheduled to receive improved range missiles.² Older SLBM submarines began to be phased out. Developments were obviating the need for surge capabilities, and for the protection thereof. A similar trend towards home water basing could be discerned in U.S. procurement of the long-range *Trident* system, scheduled for consequential deployment in the 1980s.³ Midocean ASW (antisubmarine warfare) and counter ASW capabilities, the never perfected but hauntingly plausible threat against the sea-based deterrent (crucial to prevailing strategic perceptions), were becoming redundant.

This is reflected in the changing composition of the Soviet strategic fleet, charted below. As will be seen, its dramatic growth tapered off after 1968, when numbers of hunter-killer submarines began to be contracted markedly. Through the mid-1970s the continuing growth of the SLBM "offensive" strategic submarine force only just sufficed to offset the diminution in numbers of attack submarines. So also with surface vessels, the numbers of which stagnated after 1968. One should note that all major Soviet surface combatants have ASW designations. On the other hand, the fact that numbers have steadied does not reflect on quality. It could be argued that quantitative stagnation or, in some cases, contraction, has been more than offset by qualitative improvements. But it should be noted that qualitative improvements have been catholic, focusing on the amalgam of needs associated with distant sea control ambitions; at least until very recently they did not noticeably favor ASW requirements.

With the apparent easing of the defensive requirement for a high seas fleet, of the need to defend against the ocean-based threat *per se* and to defend the seagoing deterrent, there appears to be emerging a greater Soviet capacity for sustained distant operations of a more general nature. Moscow is procuring capabilities that invite the entertainment of limited command of the sea notions. This may be related to the trends in Soviet strategic literature towards increased interest in concepts of intervention and increasing stress on the Navy's role as defender of state interests abroad.⁴ In the former case there may be room for debate whether expressed interests were causal, or whether they are post-facto rationalizations, whether such have in fact been an abiding consideration in the shaping of the fleet's growth, or whether they reflect the search for a new *raison d'être* for emerging and future capabilities at a time when the old justification may be being undermined.

As concerns the protection of state economic interests, however, there can be little doubt that this is a role or function with deeper roots. Although perhaps secondary to the strategic imperative, it was clearly an early consideration of substance. Since the late 1950s, and especially through the 1960s there was a dramatic growth in distant Soviet merchant shipping, fishing and other ocean wealth exploration and exploitation activities.⁵ By the late 1960s Soviet "ocean development" endeavors reached to every major expanse of the world's seas; of particular interest to this analysis: "blanket coverage" might be said to have been established in northern waters. The U.S.S.R. had developed the one condition, distant ocean financial interests, that has traditionally been seen to justify and even demand protective naval potential.⁶

Furthermore, while her existence might not yet depend on the inviolability of trade routes to the same

extent as did that of traditional maritime powers, in view of the reality of greater residual self-sufficiency in most basic resources, it had come to depend on the inviolability of ocean wealth extraction prospects. The harvesting of fish, crustaceans, krill and algae had come to constitute an important part of the nation's protein intake. It had become an increasingly indispensable supplement to the output of still problem-plagued agriculture. And its excess capacity was becoming an increasingly important source of foreign exchange, a source of disproportionate value to a nonconvertible currency nation. The harvesting of ocean and ocean floor mineral and energy potentials, while perhaps of lesser immediate urgency, was similarly associated with superficially disproportionate promise, owing to the severity of the geophysical and climatological restraints hampering the full exploitation of land prospects. And the value of excess production exports of these products was of course also at a premium, because of the very fact of its being convertible.⁷

Soviet "civilian" fleets clearly serve an auxiliary military function. Their character is determined by the Soviet proclivity towards military-civilian integration, where optimal. This proclivity is a function of the all-embracing part-Clausewitzian Soviet concept of strategic power, a concept that sees economic, military, political and other levers of power as explicitly intertwined and interdependent; no component has absolute worth, but gains relative weight through a calibration of domestic and external circumstances and requirements.⁸ Admiral Gorshkov's testimony that Soviet civilian fleets are regarded as part and parcel of Soviet naval might⁹ should therefore occasion no surprise.

Moscow's civilian fleets provide reserve naval transport and intelligence monitoring capacity; they "survey and mark future battle fields"; they play an important role in the distribution and

control of underwater devices of strategic import; and they perform a significant role in the perfecting of command and control means and practice. To the extent that their inherent capabilities and normal deployment patterns allow them to satisfy routine naval requirements at minimum cost to their other tasks they are so assigned.¹⁰

But the point is that under normal peace conditions, free of such tension requirements as exemplified by the Cuban crisis of 1962, the capabilities and tasks of the civilian fleets are only correlated with military requirements to such an extent as is possible without seriously jeopardizing their nonmilitary endeavors. Not only are the civilian functions cost-effective (even such marginal efforts as the Capelin fisheries off Labrador, unprofitable to Canadian fishermen, become economical in the context of a Soviet-type economic system), but they have become vital to the satisfaction of the standard of living commitments upon which the nation's establishment has chosen to stake its legitimacy.¹¹

The fact that Soviet distant ocean financial interests have not only been established but may be said to have acquired crucial importance for domestic prospects is rarely fully appreciated by Western analysts. The flow of responsibilities between the civilian and military fleets is no longer (and perhaps never quite was) a one-way street. Calculations of Soviet naval designs must take cognizance of the reality that the Red navy of today has a significant new responsibility qualitatively distinct from those hitherto presumed to underly its *modus operandi*.

With this in mind it is possible to conceive of at least two scenarios in North American (Canadian)-claimed waters that might see Soviet naval involvement. One relates to Canadian fisheries' jurisdiction in the event of a recurrence of the Soviet crop failures of

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the early 1970s, especially should such a repeat coincide either with climate-caused harvesting shortages in the West or else with politically motivated restrictions on Western agricultural exports. Under such circumstances Moscow might well consider the protein potential of a dramatic increase in Grand Banks fishing, bursting the seams of International Commission for the Northwest Atlantic Fisheries (ICNAF) quotas, to be vital—in the stark dictionary sense of the word. Is it likely that existing international agreements would deter her under the hypothesized circumstances? Would it be plausible to expect challenge from the rather meager enforcement means at Canada's disposal if Soviet naval elements were to provide protection to the fishing fleet? Would it be plausible to expect Washington or other third powers to intercede? The continuing lack of an International Law consensus on either the principle or the particulars of unilaterally declared extensions of coastal states' rights beyond the traditional territorial seas (viz., the 200-mile economic zones) creates an additional element of uncertainty.¹²

The other scenario concerns Canadian Arctic Ocean waters and beds. A few facts stand out. Neither the U.S.S.R. nor the United States have fully sanctioned Canadian sovereignty claims. Canadian surveillance is of questionable efficacy (as indicated a couple of years ago in the case of the Polish "yacht" *Gdynia* when search efforts failed to determine its location and indeed failed to determine even if it was in fact in Canadian waters at all).¹³ And there are analysts who doubt whether recent procurement decisions promise consequential improvements for the late 1970s and the 1980s.¹⁴ Canadian scientific and exploratory endeavors in these areas have also been scant—whether one talks of geological or biological surveys to seek to locate and determine the extent of resource concentrations; of surveys of such factors that affect

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operational efficacy as salinity, currents, water temperature (and seasonal and other variations thereof), etc.; or of resource wealth extraction technology, be it related to alimentary, mineral, nodule or energy spheres.¹⁵ Canadian law enforcement means in these regions are equally questionable, with few suitably trained forces and limited equipment of relevance. Meanwhile it is clear that the scientific endeavors of the U.S.S.R. (and the United States) in Canadian-claimed Arctic waters and ocean floors have been far more extensive than those of Canada.¹⁶ They are also uniquely advanced in Arctic wealth extraction technologies. Finally, they both have more relevantly trained and equipped military personnel.

It may not be too remote to suggest that the superpowers have or will soon have the capacity to establish northern ocean floor wealth extraction operations without Canadian knowledge, a prospect with obvious common-law ramifications. Their ability to defend such installations upon discovery would of course have similar juridical consequences. The point must be made that a Soviet initiative along these lines might not have to be pioneering and thus possibly disruptive to the Washington-Moscow equilibrium, but might conceivably be able to rest on U.S. precedent(s)—in light of current American Law of the Sea positions in general; American attitudes to Canadian northern claims in particular.

Visions of the Red army marching across Canadian Arctic islands do indeed appear rather far-fetched. But the same cannot be said of certain ocean or ocean-floor scenarios, especially when under ice and beyond the certifiable inspectorial concern or capacity of the claimant power. Both superpowers carefully distinguish between respect for Canadian Arctic island suzerainty and considerably less accommodating views on Canadian claims over Arctic seas and seabeds.¹⁷ The latter are treated as

more dubious than say, Norway's Svalbard associated claims. Because Canada has not established the same presence in the more northerly reaches of her claimed sovereignty as has Norway, a point of some international law significance, she could be said to be at a double disadvantage.

In the southern hemisphere also one can now conceive of Soviet economic requirements dictating Soviet military engagement. The mentioned krill harvesting off southeast Africa, for example, entails an investment of such intrinsic scale, potential and importance as could not be dispensed with without domestic dislocations.¹⁸ In the unlikely event of Soviet inability to ensure continued access to Mauritian or other conveniently located repair, supply and replenishment facilities, there would be a major incentive to assertive action.

Still, while the possibility of economically dictated military embroilments cannot be ruled out, such embroilments are unlikely.

What may be more important is the early 70s trend in Soviet doctrine towards a more catholic, embracing definition of state interests. This has been treated elsewhere; so also has the corresponding but nevertheless startling fact that the naval duty to "protect state interests," the task of "peacetime naval diplomacy," now ranks immediately behind the priority task of protecting its own strategic potential—and ahead of the earlier priority requirement of grappling directly with NATO's strategic fleets.¹⁹ The point is that the increasing trend to identify Soviet interests with Third World contingencies and the assertive willingness to pursue and protect these interests inevitably entail a requirement for improved interventional potentials.

The corollary Soviet stress on the ability to establish and defend distant lines of communications has also been dealt with elsewhere.²⁰ But there is one element that deserves mention here, and

that is the consequent need to offset the countering capacity of U.S. carriers, on the supply routes, and on the locale in question:

The removal of attack carriers from the first echelon of the reserves of strategic forces in a general nuclear war in no way excludes their wide utilization for resolving important tasks. The command of the U.S. Navy recognizes at least three of them. Firstly, seaborne aircraft remain in the forefront of tactical aviation in LOCAL WARS; secondly aircraft carriers are an integral part of the forces that guarantee "MASTERY OF THE SEA"; and thirdly, aircraft carrier formations are an irreplaceable instrument in "GUNBOAT DIPLOMACY," providing a military presence where this is needed in peacetime.²¹

By the early 70s Moscow had standardized "anti-carrier task groups":

The core of Moscow's Third World diplomacy of force lies in its capabilities for countering U.S. carrier task groups. These capabilities seem to be organized in what we refer to as anti-carrier task groups, each typically consisting of a cruise-missile submarine, a couple of torpedo attack submarines, a surface-to-surface missile ship and a surface-to-air missile ship.²²

And Moscow appeared until recently to be content with the potency of her counter:

Although capabilities continued to improve, Soviet investment since 1970 in countering the carrier has not been as intensive as in previous periods²³

In 1977, however, the number of Soviet attack submarines jumped noticeably, past the peak that had been established in 1968 (see below). The timelag since the early 70s enunciation

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of doctrinal interest in greater interventionary-type commitments, needs and requirements suggested that the increase might be attributed to attendant prospects of greater "lines of communication" demands. Moscow was clearly not intending to revert to the near-futile aspiration of the 60s, general "combat against the enemy fleet." And there was no evidence of Soviet dissatisfaction with her ability to guarantee the survival of her strategic fleet, and hence allow for the option of withholding.

There were other possible reasons for the 1977 spurt in numbers of attack submarines. One was contemporary American advocacies for additional carriers, although it must be said that U.S. budgetary and political realities always appeared likely to squeeze such aspirations. Another plausible Soviet motive lay in sales of attack submarines to Third World clients, and possible expectations that these would increase.²⁴ Finally, there was the modernization drive, the appearance and deployment of new improved vessel types. To the extent that the latter considerations operated one would expect the numbers bulge to deflate or at least stagnate under the effect of sales and the phasing out of older submarines. In other words, the bulge might prove to be an aberration.

However, if the late 70s bulge proves not a hiccup of planning, but the signaling of a trend, then the "leadtime" (research and development time lag) consideration outlined above would indeed appear to be most logically compelling.

It is appropriate here to return to the original thrust of our inquiry, the question of the changing character of the navy. The focus will be on the Soviet Northern Fleet. It is preeminent among the Soviet fleets. The reason is partly geopolitical, in that it is the only one of the three "western fleets" that has access to open seas. This uniqueness was appreciated from the first days of the Soviet regime, and remained a constant policy consideration through the first four decades of its existence. Since the late 1950s, strategic considerations have provided additional rationales for and hence further cemented Soviet perceptions of the crucial nature of the Northern Fleet.

These considerations led to a Soviet decision to assign all its western-based strategic submarines, and in fact a very large portion of her overall number of strategic submarines, to the Northern Fleet (with the residual being assigned to her Pacific Fleet). The following figures are based on a composite of sources.²⁵

	Northern Fleet 1950-68-73-75-76-77				Baltic 1950-68-75-77			Black Sea 1950-68-75-77			Pacific 1950-68-75-77							
Strategic SLBM armed subs																		
-nuclear	0	14	34	38	44	56	0	0	0	0	0	0	0	0	0	6	11	16
-diesel	0	21	16	15	15	15	0	0	0	0	0	0	0	0	0	14	8	8
Attack subs w/torpedoes & cruise missiles																		
-nuclear	0	18	27	28	30	31	0	0	0	0	0	0	0	0	0	10	12	12
-diesel	0	13	16	16	16	16	0	6	2	2	0	0	1	1	0	3	9	9
Attack subs w/torpedoes																		
-nuclear	0	10	22	26	32	34	0	0	0	0	0	0	0	0	0	5	6	7
-diesel	30	105	72	55	40	55	135	63	74	83	40	40	44	48	110	62	46	46
1950																		
1968																		
1975																		
1977																		
Total Attack Subs					315			335			344							
Total Attack and Strategic Subs					315			390			391							

Note: Exact 1975-77 distribution is not known; the breakdown above reflects the presumption that 1968-75 distribution trends have continued. There is one exception to this pattern. For shorthand purposes the 75-76 net retirement of 15 diesel attack-torpedo submarines is ascribed solely to the Northern Fleet, where previous attrition had been the most marked; the 77 increase in newer models of the category is described as reestablishing 75 numbers in the Northern and Pacific Fleets, foci for earlier contractions, with the residual added to the other fleets in accordance with past growth rates.

SALT I permitted the U.S.S.R. up to 62 "modern" ballistic missile submarines. As Moscow has already deployed some 34 *Yankee* and 26 *Delta I* and *II* vessels, totaling 60, it is clear that she views the older shorter missile range classes as *Hotel* and *Golf* as excluded from the calculation.

1968-77 saw the nuclear percentage rising from 21 percent to over 58 percent in the Northern Fleet, from 19 percent to 36 percent in the Pacific Fleet. The newest category, the formidable *Deltas*, were at least initially allotted only to the Northern Fleet. The qualitative favoring of the Northern Fleet (and to a lesser extent of the Pacific Fleet) is further evidenced by apparent priority call also on newer diesel categories--Baltic and Black Sea increments obscure transfers of older types.

Numbers of attack submarines began to decline in 1968, and continued to contract until 1976 (a reflection of the deemphasis of the task of "combat against the enemy fleet"). Until the mid-70s the rapid growth in numbers of strategic subs only barely balanced the withdrawal of attack numbers. The consequential 1977 increase in attack submarines is hence quite arresting. The increase would seem to transcend the sea-control requirement of northern "withholding." It clearly reflects the stress on distant "state interests" and the concomitant requirement to be able to protect "lines of communication" and to assert localized sea control.

The privileged position of the Northern Fleet in the procurement of strategic submarines and in the allocation of the more modern elements of the hunter-killer fleet finds echo in surface fleet trends--although here to a less marked extent.²⁶ The surface fleet is, on the whole, far more evenly distributed among the four base areas. Still, if one focuses on larger modern units capable of sustained distant operations, then the north does appear advantaged. The trend in numbers of modern cruisers, for example, is indicated by the fact that the Northern Fleet was allocated four of the nine units completed between 1968 and 1975. Overall, its complement of such units grew from five in 1968 to ten in 1975 (the increase included also one of older vintage), as compared, for example, to a growth from seven to ten for the Pacific Fleet. The Northern Fleet has not yet been assigned permanent carrier capability, but while the two helicopter carriers have remained based in the Black Sea they have frequently visited the northern complex, and the new *Kiev V/STOL*

carrier prolonged the visit(?) initiated when it sailed north from its southern launching area in the fall of 1976. From 1976 to December 1977 *Kiev* participated in northern maneuvers as an apparently integral component of that fleet.²⁷ One does not know of permanent basing dispositions for either this carrier or for its two sister ships now being completed, but the Northern Fleet would likely be involved.

There was a clear break around 1968 in surface fleet distribution patterns. Between 1950 and 1968 the number of Soviet destroyers had increased by 34; nearly half (15) had been assigned to the Northern Fleet. Since 1968, however, northern numbers stagnated, in fact decreasing (from 24) to 22 in 1973, at a time when overall navy totals rose slightly, from 104 to 106 (the beneficiary being the Baltic). But the disfavoring of the Northern Fleet on the destroyer issue was more than made up for by the increasing privilege it was accorded after 1968 in the assignment of larger ships. That privilege is emphasized by a consideration of qualitative

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trends, specifically the ratio between missile-armed and conventional cruisers. By 1975 the Northern Fleet had acquired a far higher proportion of missile cruisers than other fleets (seven of its ten cruisers were in fact missile ships). It is indicative to note that it had six of the ten *Kresta*-class cruisers in the Soviet Navy, i.e., 60 percent (its seventh missile cruiser was of the even newer *Kara* class; yet another unit of this type appears to have been added by the end of 1976—and one may presume current and prospective numbers to reflect similarly disproportionate allotments from the ongoing production rate of one a year).^{2,8} This difference between trends in larger and smaller ship categories in the Northern Fleet is further testified to by a consideration of smaller escort and coastal defense ships. In these categories the Northern Fleet was second only to the Black Sea Fleet as late as 1973. By 1975 its complement of these types had shrunk from 36 to 31, putting it behind the Baltic Fleet, and not far ahead of the Pacific Fleet (whose numbers had also contracted, from 32 to 27).^{2,9}

It is thus clear that the favoring of the Northern Fleet, while definitive, has also been discriminating and not universal. Among surface vessels it is in the category of larger modern ships capable of sustained distant operations that northern preeminence stands out. And it is of course this surface category that we are concerned with when speculating on future Soviet potentials in such areas as the northwestern Atlantic (—or the South Atlantic).

The qualitative if not quantitative trend has clearly been to assign to the Northern Fleet the greater part of what appears to be an increasingly traditional offensive capability. While it may have peaked in overall numbers, the Soviet Navy appears to be in the process of transforming itself into a very different, and potent animal.^{3,0} The focus for that transformation is the Northern Fleet.

It is now some years since NATO commanders first questioned their ability to penetrate the Norwegian Sea in the event of a conflict.^{3,1} Today Moscow may have succeeded in acquiring or be procuring an ability to establish local sea control in areas far further afield.

The Soviets have been sending their highly sophisticated Delta-class 14000 ton nuclear submarines, armed with SSN-8 missiles (range: nearly 5000 miles), ever deeper into the Arctic Sea. Says Willy Ostreng, research associate at the Norwegian Arctic Research Institute: "For the first time the Soviets have direct access to the high seas, even if under ice, without having to go through international straits. From that area they can shower any part of the U.S. with nuclear missiles." NATO naval forces, moreover, find it difficult to detect Soviet subs under the constantly shifting ice.^{3,2}

It also appears that the U.S.S.R. might at the same time be minimizing whatever residual efficacy Western barrier aspirations (across the so-called "GIUK gap") might retain against those of her subs that still suffer from range restrictions and therefore need closer-to-target firing locales. Soviet capabilities now flank traditional bottlenecks, and can encroach on the nominal defense areas of scantily prepared Canadian and NATO Arctic defense forces: "the Danish Ministry of Defence now believes that Soviet subs can passage between Ellesmere Island and Greenland and, furthermore, that Soviet submarines . . . station themselves under Arctic ice."^{3,3}

One presumes that the Ellesmere Island-Greenland passage and other potential passages through Canada's Arctic Islands can be closed to hostile traffic. But such closure presupposes a warning time that might not be

warranted by the suggested predispositioning. And there is the point that the submarine element in question might in fact not find it necessary to transit through the potential "chokepoints"—the "Canadian basin" might serve as a fine standoff locale for "Yankee" SLBMs.

Whether for strategic purposes in the northernmost reaches or for other "state interests" and designs in the southern hemisphere, Moscow must be acknowledged to have acquired the capacity to establish control over limited areas of her choosing. In a sense the very recognition of the futility of more embracing aspirations has entailed significantly improved prospects for more circumscribed actions. On the other hand, as some of these more

restricted, more manageable/controllable steps can be hazarded in times of relative peace, their accumulation may prove of far greater potency than could have been ascribed to earlier policies.

BIOGRAPHIC SUMMARY



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forthcoming *Soviet Strategic Initiatives: Challenge and Response*.

NOTES

1. *Jane's Fighting Ships 1977/78* (New York: Franklin Watts, 1977), p. 119.
2. *Ibid.*, p. 117.
3. There is, of course, a dichotomy here: the *Trident* missile was designed to have the requisite range to be fired from protected home waters, thus obviating the potential threat of hostile ASW; yet while some analysts have pursued the logic of the missile with suggestions ranging down to cheap anchored concrete platforms, decisionmaking bodies chose instead to fund the mammoth *Trident* submarine whose sophistication and consequent expense was a direct corollary of a design intended to challenge that same potential ASW. Hence "the Trident controversy"
4. Carl G. Jacobsen, *Soviet Strategic Initiatives: Challenge and Response* (New York: Praeger, 1979), especially chap. 2.
5. U.S. Congress, Senate, Committee on Commerce, *Soviet Oceans Development* (Washington: U.S. Govt. Print. Off., October 1976), pp. 257-285.
6. *Ibid.*
7. *Ibid.*, chapter on "The Civilian Fleets."
8. Carl G. Jacobsen, *Soviet Strategy, Soviet Foreign Policy* 2nd ed. (Glasgow: Maclehose, 1974); see also Jacobsen, "Soviet Military-Party Relations . . .," Carleton University *Current Comment* series, No. 10, 1976, pp. 3-13.
9. *Pravda*, 25 July 1976.
10. See "The Civilian Fleets" chapter in *Soviet Oceans Development*, and *Jane's Fighting Ships 1977/78*, p. 117.
11. Senate Committee on Commerce.
12. For Soviet attitudes, see e.g., S. Pavlov in *Pravda*, 12 February 1976, p. 4, or I. Gorev in *Novoye Vremya*, 12 March 1976 (p. 2 in English ed. *New Times*), and *Council of Ministers' resolution* of 24 February 1977.
13. See, e.g., J. Best in *The Ottawa Journal*, 10 September 1975.
14. Note, e.g., ORAE E-M.P. No. 4, Canadian Department of National Defence, Ottawa, February 1978.
15. Information based in part on telephone interview with G.D. Hobson, Director, Polar Continental Shelf Project, Ottawa, 17 February 1977; and on letter from same dated 26 April 1977.
16. The wall map in the office of the Director of the Arctic and Antarctic Institute in Leningrad which charts the impressive array and scope of Soviet scientific endeavors in the area makes Canada's corresponding programs appear rather puny.

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17. See e.g., Canadian Press story "Soviets on islands claimed by Canada" in the *Ottawa Citizen*, 12 June 1976.
18. Senate Committee on Commerce.
19. See chap. 2 of author's forthcoming *The Strategic Posture of the U.S.S.R.; The Evolution of Soviet Theory and Capability as Concerns Intervention in Distant Areas* (New York: New York University Press, 1979).
20. *Ibid.*, chap. 4.
21. R. Tumkovskii, "Present and Future Strike Carriers," *Morskoj Sbornik*, July 1974, pp. 95-99; also, e.g., V. Evseev, "Amphibious Forces of the Navy," *Morskoj Sbornik*, September 1974, pp. 96-100.
22. James M. McConnell, "Doctrine and Capabilities," chap. 1 of forthcoming book sponsored by U.S. Center for Naval Analyses, Arlington, Va., pp. 1-21.
23. *Ibid.*, pp. 1-22.
24. *Jane's Fighting Ships 1977/78*, p. 117, notes, e.g., Foxtrot-class sales to Libya.
25. J.F. Skogan, *Sovjetisk Flaateoppbygging i Nord* (Oslo: Norsk Utenrikspolitisk Institutt (Norwegian Institute of Foreign Affairs), November 1976); *Jane's Fighting Ships 1950/51* (New York: McGraw-Hill, 1950); *1973/74* (New York: McGraw-Hill, 1973); *1975/76* (New York: Franklin Watts, 1975); *1976/77* (New York: Franklin Watts, 1976); *1977/78* (New York: Franklin Watts, 1976); and *1977/78* (New York: Franklin Watts, 1977); and James L. Moulton, *British Maritime Strategy in the 1970's* (London: Royal United Services Institution, 1969), (1968 figures are culled from this source). Somewhat different (current) figures are provided by International Institute for Strategic Studies, *The Military Balance 1977-78* (London: 1977). The composite figures presented should thus not be viewed as absolute; they are approximations, portraying the consensus of best-available data.
26. *The Military Balance 1977-78*.
27. See, e.g., coverage in *Time*, 27 June 1977, p. 22; or "Soviet Aerospace Almanac 1978," *Air Force* magazine, March 1978, p. 67.
28. Skogan and *Jane's Fighting Ships 1977/78*, p. 690. (Continuing *Kresta II* production rate is similar, while that of *Krivak* destroyers is 4 per year) see *Jane's Fighting Ships 1977/78*, pp. 691, 696.
29. Skogan.
30. *Jane's Fighting Ships 1976/77*, p. 121; and see e.g., *Kara* cruiser description, p. 702.
31. See *The New York Times*, 1 November 1971.
32. *Time*, 27 June 1977, p. 23.
33. CBC Report from London NATO Conference 6:30 p.m. Atlantic time, 10 May 1977.

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