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CONSTRAINTS OF NAVAL GEOGRAPHY ON SOVIET NAVAL POWER

The element of geography poses clear limitations on both the development and employment of naval powers by the Soviet Union. Failure on the part of naval planners to recognize and exploit this strategic advantage would be a disservice to the defense budget, the national economy, and the United States citizenry.

An article prepared
by
Commander Clyde A. Smith, U.S. Navy

Introduction. This commentary focuses on the psychological and physical constraints, arising from geography,[1] which diminish Soviet naval power in the naval power equation. Naval power is inseparably linked to national geography, and while an oversimplification, the essential naval power equation is nevertheless:

(Size of Navy + Quality of Navy)
X Naval Geography = Naval Power.

In this case study of the Soviet Navy, it is apparent that naval geography largely drives naval strategy which, in turn, drives force structure.

Admittedly, this paper has a tendency toward geographic determinism. It proceeds in three steps: by identifying the psychological and physical constraints which flow from Russia's unfavorable naval geography; by discussing the significance of these constraints on Soviet naval strategy, defense economics, and decisionmaking and fleet and forward base structure; and by positing objectives that should be pursued in *our* defense economics and decisionmaking in view of these constraints and their influences.

Assumptions. Two assumptions underlie this paper. First, when it speaks of "war" or "wartime," it refers either to nonnuclear war or to a nuclear war confined to the sea. In an all-out exchange between the American and Soviet nuclear arsenals, what might transpire at sea between the two navies would be academic since both civilizations would already have perished on the land. Second, it assumes that a satisfactory means can be worked out to qualitatively compare the ships, submarines, and planes of the Soviet and United States Navies, that differ both in

missions and in configurations. Undoubtedly such means can be determined via systems analysis, although both Admirals Gorshkov and Zumwalt have noted its difficulty.[2]

Constraints of Geography and Geographic Determinism. Constraints of psychology and physical geography have, throughout history, imposed severe restrictions on Soviet naval power, constraints which present the United States with strategic and tactical advantages that the Soviets cannot overcome. We need but to understand this and to resolve, with our larger and more efficient industrial base, to maintain and exploit these advantages. While Western observers often note the existence of some or all of the major geographic constraints, they do not consider their historic and long-term ramifications. As long as the total ship, submarine, and plane capabilities of the two navies, appropriate to their missions, remain approximately in balance, the burdens imposed by geography will continue to diminish the effectiveness of the Soviet Navy. The Russian bear has learned to swim, but he nevertheless remains a prisoner of his physical geography.

The Psychological Constraint: Land Power Mentality. By history, tradition, and necessity, Russia has long been a landpower with a landpower's mentality. This psychological constraint, flowing from Russian physical geography, suffuses and dominates Soviet decisionmaking throughout her Defense Establishment. Historically she has lived with vulnerable frontiers, and her fears and ambitions have therefore been directed inward, upon the land, rather than seaward. This historical preoccupation with the land has focused major attention on Russian armies, and her seapower has suffered accordingly. The historic Soviet fear of eventual invasion from Europe remains, and she now has the added concern of an unfriendly China upon her Asiatic border.

Maintenance of huge armies is costly and diverts resources away from the sea. At the same time, army domination of military policy councils[3] assures that the Soviet Navy will not receive the fullest share of attention and consideration in competition for budget, resources, and industrial capacity. The accomplishments of the incumbent Soviet Navy Commander in Chief, Admiral Gorshkov,[4] and whatever other naval enthusiasts are in alliance with him in Russia, therefore loom even larger. While this landpower mentality is a major psychological constraint on Soviet naval power, it has not—in view of the vast resources and centralized direction which Russia possesses—precluded her from becoming a great naval power as well. Nor does it preclude her from making further great advances in growth of her naval power, a growth which Admiral Gorshkov seemingly announced in his series of articles in *Morskoy Sbornik*.

The Five Geographic Constraints. There are five major geographic constraints on Soviet naval power. These are:

- the vastness of the Soviet Union
- the geographic fragmentation of the Soviet Navy into four fleets and one "squadron"
- the existence of narrow straits through which her fleets must pass to reach the open oceans
- the northerly orientation, in latitude, of the Soviet Union
- the distance of her fleets from major world oceans and shipping lanes.

These five geographic constraints, in conjunction with the all-encompassing psychological constraint, profoundly affect Soviet naval power. They significantly influence Soviet naval strategy and defense decisions, Soviet perceptions of the utility of the world's oceans, and Soviet views on material

requirements to operate successfully upon them.

As Germany learned in both World Wars, a naval fleet and the national geography from which it must project its naval power are two parts of an inseparable system. Like the Germans, the Soviets can have a great navy, but not necessarily be a great naval power. Deficiency in the "Naval Geography" term in the naval power equation translates into severe constraints on national naval power. In essence, the Soviet Navy's geographic dilemma vis-a-vis the U.S. Navy is analogous, on a grander scale, to that of the German Navy vis-a-vis the British Navy during both World Wars.

Constraint One: The Vastness of the Soviet Union. The Soviet Union's size is a major liability to her naval power, but a major asset to her landpower. Her hugeness dilutes and separates her naval power, but, at the same time, ensures her a wealth in natural resources and a capacity for the defense in depth appropriate to a landpower. Nearly three times as large as the United States, Russia's east-west extent is more than the distance from New York City to Honolulu, and her north-south extent is twice the distance from Maine to Miami. Her great size ensures that her naval power, operating as it must only on the periphery of her landmass, will be physically divorced from political and economic centers of power. In the extreme example, Vladivostok, the headquarters of the Pacific Fleet, is well over 5,000 miles from Moscow. With her navy situated in peripheral seas, with her severe climate, and without a maritime tradition, the ascendancy of the landpower mentality and its historic subordination of the navy to the army in Russia seems predestined.

Transportation between distant regions of Russia is at best underdeveloped, at worst nonexistent. For example, no highway spans Siberia, and the only railway across this huge area is the Trans-Siberian. In short, the Soviet Union lacks a modern road, highway, rail, and air transport system. This factor, together with size and climate, dictates that any exchange of spare parts, personnel, and even publications will be difficult, time-consuming, and expensive. The vastness of the Soviet Union thus effectively prohibits an integrated and efficient supply system for her Naval Establishment, as well as limiting naval coordination and reinforcement in wartime by means of her vast maritime perimeter.

Constraint Two: Fleet Fragmentation. Physical geography has dictated the division of the Soviet Navy into four fleets—Northern, Baltic, Black Sea, and Pacific. The "Mediterranean Squadron,"[5] drawn from units of the Black Sea and Northern Fleets primarily, is maintained in the Mediterranean and compares in size to the U.S. 6th Fleet. Each of the four fleets has a commander in chief, and each comprises seagoing units, naval infantry,[6] naval air forces, support bases, dockyards, and associated facilities. Land-based naval forces include coast defense units—artillery and air defense—together with operational troops, such as naval infantry and engineer units. This division of the Soviet Navy into four fleets, concomitant with the distances involved and with the lack of free access of each fleet with the others, ensures that the fleets cannot provide timely mutual support or reinforcement in wartime.

Each fleet is configured to function independently, which presents severe command and control problems, and each has specialized functions. Since the Soviet Navy has no aircraft carriers[7] and since it is extremely risky to operate warships at sea without air cover in a hostile environment, the Soviet Navy's effective operational range in time of war is restricted to the range of land-based air. This, in turn, not only pre-

vents global operations in wartime, but constricts the Soviet Navy to operating its surface ships (under existing technology) near home waters where land-based air can protect them with continuous air cover.

Geography also divides the U.S. Navy, forcing us to maintain both Atlantic and Pacific Fleets. Passage from one fleet to another must either be by way of the Panama Canal or around Cape Horn. The Panama Canal is, of course, vulnerable to bombs, mines, and sabotage, not to mention Panamanian nationalism, and the locks are also not large enough to accommodate most of our carriers. Even so, while we ourselves do have a fleet fragmentation problem, it simply is not nearly so severe as that of the Soviets.

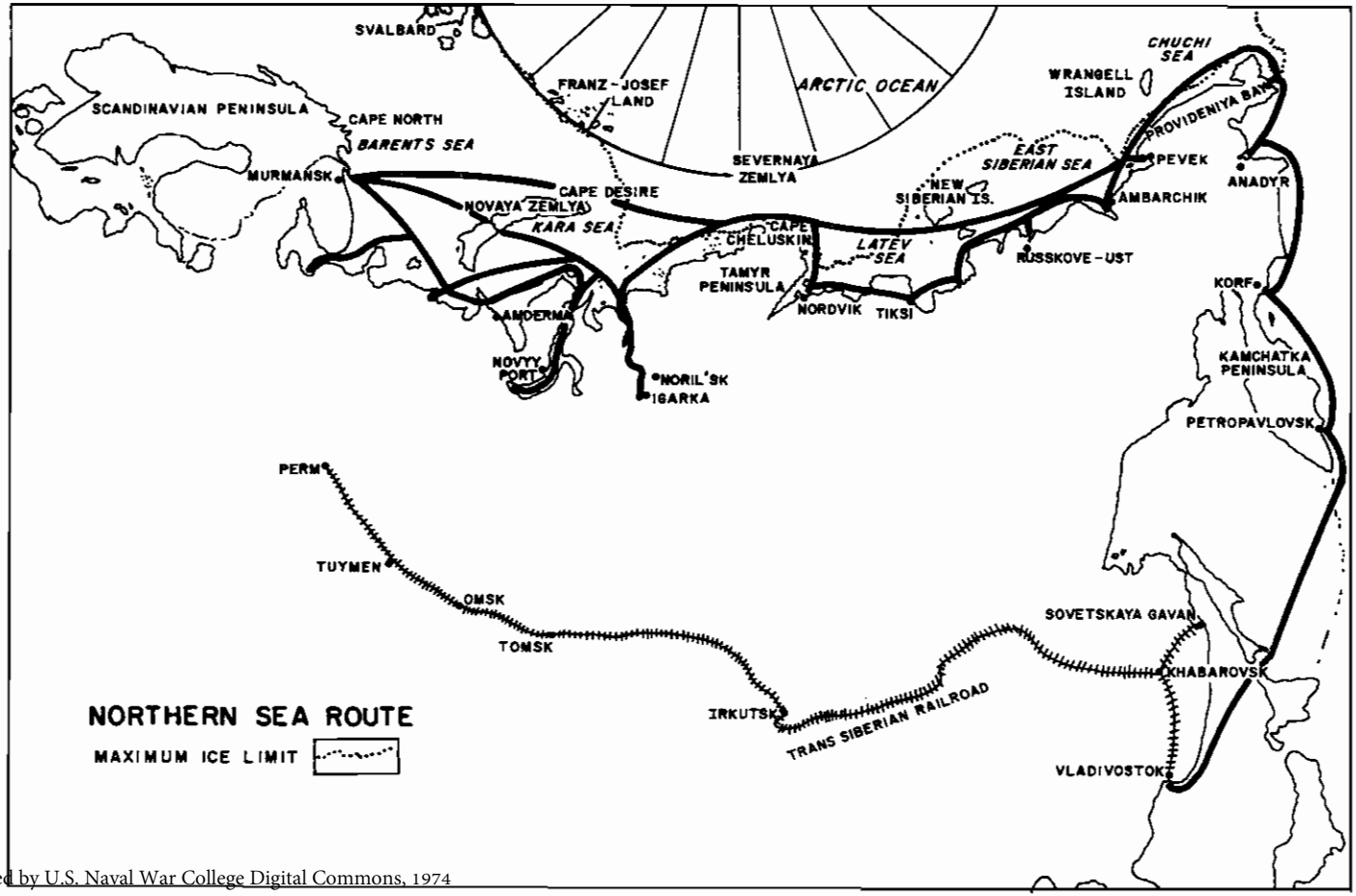
The Northern Sea Route (NOSERO). Some alternatives, none satisfactory, are available to the Soviets in attempting to alleviate this problem of fleet fragmentation. These alternatives are the Northern Sea Route (NOSERO) and the Soviet canal system. The Soviet NOSERO runs from Murmansk on the Barents Sea across the top of Russia to Provideniya on the Bering Sea (or conversely), with Vladivostok usually the ultimate destination. This route is strategic and in the Soviet view internal. They control the icebreakers on the route, provide charts and weather services, conduct ice reconnaissance, and exercise jurisdiction over passage of key straits. The route also services various small ports along Russia's northern periphery.

The route is open to surface transit only a few months each year, and icebreaker assistance is required. The route passes through numerous interdictable straits, and both convoys and icebreakers are vulnerable to submarine or air attack. The Germans effectively operated submarines in the Kara Sea in World War II. The entire NOSERO would now pose far fewer operational problems for modern nuclear submarines than it did for the World War II German diesel submarines. If the Soviet icebreakers should be lost, so too is the route itself.

Soviet Canals. Nor does the extensive Soviet canal system present relief. There does exist a significant canal system in European Russia which provides a means for interchange of small naval vessels, equipment, and supplies between the Baltic and Northern Sea Fleets. The Baltic Fleet-Northern Fleet interchange is via the White Sea-Baltic Sea Canal and the Baltic Fleet-Black Sea Fleet interchange is via a series of canals and rivers. The White Sea-Baltic Sea Canal's capacity is limited, and it cannot take either the larger Soviet ships or submarines. It is susceptible to aerial mining in wartime, and its locks and canal walls are vulnerable to bombing. (German Stuka dive bombers put the canal out of operation in June 1941 in the first month of the invasion of Russia.) Limited capacity and vulnerability to mining and bombing similarly curtail the usefulness of other Soviet European canals in wartime.

Icing is also a serious problem because Soviet canals and rivers freeze for a considerable period each year. The Northern Dvina River, which empties into the White Sea, is frozen for 188 days each year, while the lower Dnieper, emptying into the Black Sea, is frozen for 80 days. Freezing periods for other canals and rivers in European Russia lie somewhere between these figures. Thus, Soviet canals, while useful, do not significantly alleviate fleet fragmentation problems.

Constraint Three: Interdictable Fleet Egress Routes. Each of the four fleets, as well as the Mediterranean Squadron, must transit interdictable straits to reach the open sea. The Northern Fleet, with headquarters at Murmansk in the


SVALBARD
FRANZ-JOSEF LAND
ARCTIC OCEAN
CHUCHI SEA
WRANGELL ISLAND
PROVIDENIYA BAY
SCANDINAVIAN PENINSULA
CAPE NORTH
BARENTS SEA
SEVERNAYA ZEMLYA
EAST SIBERIAN SEA
PEVEK
ANADYR
MURMANSK
CAPE DESIRE
NOVAYA ZEMLYA
KARA SEA
NEW SIBERIAN IS.
AMBARCHIK
CAPE CHELUSKIN
LATEV SEA
RUSSKOVE-UST
TAMYR PENINSULA
KORF
NORDVIK
TIKSI
AMDERMA
NOVYY PORT
NORIL'SK
IGARKA
KAMCHATKA PENINSULA
PETROPAVLOVSK
PERM
TUYMEN
OMSK
TOMSK
SOVETSKAYA GAVAN
KHABAROVSK
IRKUTSK
TRANS SIBERIAN RAILROAD
VLADIVOSTOK
NORTHERN SEA ROUTE
MAXIMUM ICE LIMIT

Kola Inlet, is the most powerful of the four Soviet fleets. It contains most of the Soviet Navy's "blue water" forces, including the majority of its long-range attack and missile submarines. Geography, again, demonstrates why. Of the three fleets positioned around the periphery of European Russia—where most of its industrial resources are located—the Northern Fleet has the relatively freest access to the open ocean. Submarines of this fleet would in war be the cutting edge that would attempt to sever the lifeline between America and Europe. By the very nature of this Soviet submarine threat, we have been forced to achieve a significantly higher level of antisubmarine warfare (ASW) expertise than the Soviets.[8]

Nevertheless, while relatively better off than either the Baltic or Black Sea Fleets, the Northern Fleet still must run the gauntlet around Norway and down through the Greenland-Iceland-United Kingdom Gap before reaching the strategic North Atlantic. To return to home waters, the gauntlet has to be run in reverse. Not only is the gap interdictable by friendly submarines, air, and surface forces, but Norway, the United Kingdom, and Iceland are NATO partners, while Greenland is under NATO control. Attrition of the Northern Fleet attempting to reach the North Atlantic or to return to home waters would be severe. The U.S. Navy does not suffer a comparable handicap to reach the North Atlantic.

The Baltic and Black Sea Fleets and the Mediterranean Squadron labor under even more severe geographic constraints. Narrow and minable or otherwise interdictable straits confine these fleets to their home waters and deny them open access to the ocean. The Danish Straits lock up the Baltic, while the Turkish Straits lock up the Black Sea Fleet. Even if the Baltic Fleet could escape the problem of the Danish Straits, severe attrition could take place in any crossing or recrossing of the North Sea. Like the German Navy in both World Wars, the Soviet Baltic Fleet could find itself imprisoned in the Baltic Sea. Likewise, even if the Turkish Straits problem were somehow solved for the Black Sea Fleet, it would have to transit the length of the narrow, interdictable Mediterranean and force passage through Gibraltar. Like the Baltic Fleet, the Black Sea Fleet is confronted with either wartime confinement to home waters or to destruction.

Nor is the much vaunted Mediterranean Squadron better off. Not only is the Mediterranean narrow, with NATO countries arrayed along its northern border, but the Strait of Gibraltar, under British control, locks up the sea itself. The opening of the Suez Canal to Soviet use does not change the situation appreciably since the canal is minable and ships in transit are vulnerable to air attack. These geographic constraints, together with United States and NATO naval and airpower, ensure that in time of war the Baltic and Black Sea Fleets along with the Soviet Mediterranean Squadron would either be confined to home waters or perhaps—in the case of the Mediterranean Squadron—destroyed in its geographic cage.

The Soviet dilemma is not much better in the Pacific. The Soviet Pacific Fleet is largely penned up in the Sea of Japan. Access is again via interdictable straits—La Perouse between Hokkaido and Sakhalin, Tsugaru between Hokkaido and Honshu, and Korea and Tsushima between Kyushu and Korea.

Similarly, the Kuril Island chain encloses the Sea of Okhotsk, with the interstices between the islands interdictable. In the Pacific only Petropavlovsk on the Kamchatka Peninsula used mainly by submarines, fronts on the open ocean. Presumably, Petropavlovsk—like Murmansk and the Kola Inlet in the Northern Fleet—would be an early target for airstrikes, mining, submarine interdiction, and blockade.

Constraint Four: Climate. The freezing periods for Soviet canals and rivers noted above illustrate the fourth geographic constraint on Soviet seapower: climate. Nearly all of the Soviet Union lies north of the latitude of Portland, Me. Of their major naval bases in the Pacific, Baltic, and Barents, only Murmansk is ice-free the year around—warmed by the terminus of the Gulf Stream looping around Norway. The Black Sea, however, is a warm-water basin, and Black Sea ports are open to navigation throughout the year. Arctic ice encroaches upon northern Russia, and it closes the NOSERO except for a few months each year. As a consequence of the pervasive cold climate and icing, the Soviets lead the world in cold weather operational capabilities. At the same time, cold and ice severely limit their naval operations in home waters as they must divert considerable resources in combat of these conditions.

Mahan saw the factors of numerous deep harbors, navigable rivers providing internal access to the country, length of coastline, and climate. As pertinent to seapower taken without the limitation of climate, the Soviet Union would be particularly well endowed. For example, several of her great rivers in Siberia are considerably longer than any navigable stream in Central or Western Europe. However, they flow into the Arctic, are too far north, and are frozen and unnavigable for much of the year. She has enormous expanses of coastline, but again much of this fronts uselessly on the Arctic, distant from world trade routes.

Climate also influences Soviet ship design and characteristics. Since major battles contesting control of the sealanes will likely be fought in warmer climates, Soviet ship designers must come up with ships capable of operating in the semitropics and tropics to accomplish their missions. Their ships must also be able to operate in cold home waters, and their shipbuilding technology must allow for this in hull strengths and design, insulation of piping and equipment, operation and design of equipment and propulsion, and the selection of lubricants and fuels. Climate thus further constrains Soviet naval power.

Constraint Five: Distance From World Oceans. This northerly orientation of the Soviet Union also produces the fifth constraint: distance of Soviet naval power from major world oceans and shipping lanes. Only the Northern Fleet—which has the relatively freest access to the open ocean—need be considered. As previously noted, the Baltic and Black Sea Fleets and, to a lesser extent, the Pacific Fleet, are contained within semi-enclosed seas, as is the Mediterranean Squadron. The Northern Fleet's submarines, which constitute the greatest threat to Western maritime routes, are at least 2,500 miles distant from the major America-Europe reinforcement and resupply sea routes. Not only do their submarines have to run the gauntlet past Norway and through the Greenland-Iceland-United Kingdom Gap, but they must expend considerable "dead time" in transit to and from patrol station.

Transit time to and from operating areas is dead time. We do not live with the same handicap. The Atlantic and other major ocean routes in the Northern Hemisphere Temperate Zone are at our ocean doorstep. Further, with organic air cover in our carriers, with the availability of land-based air, and with our better ASW, we can hope to protect our merchant marine[9] on the major ocean routes. The Soviets, lacking organic naval air cover, cannot provide the same protection. In time of war, they must either keep their merchant marine (and their large distant-water fishing fleet) in port or sacrifice them needlessly at sea.

Soviet Naval Strategy: Predilection for Defense, Deterrence, and Reaction. Soviet naval strategy, decisively influenced through history by geography, is essentially defensive, deterrent, and reactive in its relationship with the U.S. Navy.[10] Subordinate to army doctrine and needs, lacking maritime traditions and a trading seafaring people, and confronted by severe geographical constraints, it would seem natural that their employment strategy for naval forces would be essentially defensive. Only in recent times have they created a credible strategic deterrent force of nuclear ballistic missile submarines.

Their naval strategy, flowing from their geography, has traditionally been a strategy of *denial,*[11] of *preventing* hostile fleets from accomplishing such missions as sea control and the projection of power ashore. Their naval strategy is today aimed not at asserting their use of the sea, but in denying its use to us. While geography has dictated this strategy, it has also influenced the character of the Soviet Navy. In design and capability their ships, submarines, and aircraft are—appropriate to their mission—reactive to our Navy. To combat our carriers and surface ships, they have emphasized maximum firepower, largely through missiles, in ship and submarine design. Their submarines, ships, and naval aircraft are well equipped with tactical missiles designed to destroy surface targets. A variety of the features evident in these missile systems clearly indicates that our Navy is the projected target.

Aircraft Carriers. Stalin initially, and Khrushchev later, postponed building the aircraft carriers needed for organic fleet air cover. This was a momentous strategic decision in the great-power rivalry between the Soviet Union and the United States, inasmuch as it relegated the Soviet Navy to a position of long-term "blue water" inferiority vis-a-vis the U.S. Navy in terms of distant sea control and projection of power onto the land.

Although Western intelligence has confirmed that the Soviets are building two medium-sized aircraft carriers in the Black Sea on which vertical- or short-takeoff-and-landing (VTOL/STOL) aircraft will be embarked, our lead in aircraft carriers is immense, both in the short and long terms. Launch and recovery operations and the proper maintenance of aircraft at sea are no simple matters. Our Navy has had over 50 years of experience in operating carriers, and our level of operational efficiency cannot be attained in the short term. The VTOL/STOL aircraft to be embarked on the Soviet aircraft carrier will of necessity be of short range, will be restricted to small ordnance and fuel loads, and will therefore be mission-limited.

Projection Capabilities. The essentially defensive strategy growing from the geographic constraints has also forestalled the Soviet development of capabilities to project power from sea to shore. Again, since they have no carriers, they cannot provide air cover to fleets operating distantly from their shores in wartime. They have not developed a long-range capability of any significance for an at-sea replenishment, for assertive sea control, for amphibious assault ships, nor have they developed technologies and expertise required to project power ashore. Neither do they possess substantial and well trained forces in amphibious operations. The U.S. Marines have no real counterpart in the Soviet Union since Soviet naval infantry is neither so large, well trained, nor experienced as our Marines in amphibious operations. Even given a scenario of Soviet success in a war at sea, they would still lack the amphibious assault capability and the required air cover over the amphibious objective area to invade the Western Hemisphere from the sea.

Underway Replenishment (UNREP). The Soviet Navy lacks ships and experience in open-ocean and distant-shore replenishment-at-sea operations, although they may be closing this gap. Their ships now routinely operate in the Mediterranean, the Indian Ocean, the "Hump of Africa" area near Guinea, and, to a lesser degree, in the Caribbean. They are also building some modern replenishment ships, such as the *Chilikin* class which permit the more efficient alongside refueling at sea,[12] as opposed to the standard Soviet bow-stern refueling method. They have yet to construct multicommodity replenishment ships which can provide simultaneous replenishment at sea of fuel, food, ordnance, and other supplies and material, using alongside and vertical UNREP methods.

Forward Bases. The Soviets do not possess a forward base structure, at least not one which could support any significant overseas force deployment. Our forward base structure is again a concomitant of the long-term endurance and effectiveness of our seapower. In part a residue of the imperialistic era, it is one that has nevertheless bequeathed us a system of forward bases in modern times. Since geographic constraints and their ramifications have dictated a historically weak Soviet Navy, the Russians heretofore have not had the means and needs to acquire and retain forward bases to support distant-water deployments of naval forces, a circumstance which Gorshkov in his series lamented.

However, it appears that as Soviet naval power continues to develop, there is an inclination to acquire a forward base structure. Their naval forces have been expelled from Yugoslavia, Albania, China, Indonesia, and Egypt since World War II, yet they have acquired footholds in Cuba, Guinea, Syria, and Somalia. They may, in time, regain naval base rights in Egypt and obtain base privileges in Algeria or even Malta. In the Pacific and Indian Oceans, they could eventually obtain base rights in India, Singapore, and Yemen or on the Island of Socotra or even in North Vietnam. But until such further expansion into an overseas base system occurs, the U.S. Navy retains a significant edge in forward deployment and support capabilities.

Antisubmarine Warfare (ASW). While the U.S. Navy surpasses the Soviets in ASW, the fact may not be as significant as it first appears. Nevertheless, it is an area in which the Soviets cannot overtake us in the short term, regardless of the level of resources applied. They have no effective means for detecting and destroying, for example, our strategic missile submarines nor do they seem to entertain any hope that such means may be forthcoming via technological breakthrough. Their ASW inferiority is a circumstance which the Soviets both understand and acknowledge, as the statements of the recent Gorshkov series of articles attest.

At the same time, our *need* for a better ASW capability than the Soviets is critical. While the carrier platform is crucial to our strategy, the submarine—which in its attack and mining roles is an interdiction and sea-denial weapon—is essential to theirs. [In the type of war postulated in this paper, they must interrupt our river of merchantmen which will pour materiel into Europe.] The Germans had this same requirement for victory, failed to achieve it, and lost both World Wars. Their submarine force must also prevent us from exercising our capabilities for assertive sea control and for the projection of power ashore. Their submarine force is large, with a backbone of modern, nuclear boats which, aggregatively, have significant antiship missile, torpedo, and mine capabilities. If we cannot contain and defeat this submarine force, then our strategy is for naught. In addition to carriers, ASW is an area in which we

must maintain both a clear and sufficient advantage over the Soviets.

In particular, the Soviet submarine force may be able, despite our best efforts, to prevent our rapid reinforcement of NATO in a nonnuclear war in Europe. For example, assuming a predeployment scenario for their submarine force in response to rising tensions or prior plans, their submarines could have a dominant advantage over our convoy defenses during the first weeks of war. Their minelaying capabilities, if exercised, would pose further problems. Even a small number of their nuclear submarines might be able to destroy a significant proportion of our oil and modern dry cargo ships. The magnitude of such potential losses is dramatized in consideration that a single supertanker can now carry as much oil as some entire convoys of World War II. While Soviet submarines would have to return to port and suffer consequent attrition en route, and while using our advantages in naval geography and ASW we would hope to eventually prevail over their submarines, high initial losses to Soviet submarines could prevent the rapid reinforcement on which our NATO defense strategy depends.[13]

Conclusions. This commentary has two conclusions. First, the major objective of our naval defense strategy must be to ensure that we maintain at least parity with the Soviets–within the combined parameters of the "Size of Navy" and "Quality of Navy" in the naval power equation. Again, we cannot simply count numbers of ships alone, but must, as Gorshkov indicated, turn to some form of systems analysis to weigh the relative capabilities of navies. If we maintain–in numbers and quality of ships, submarines, and planes appropriate to our missions–parity within the naval power equation, then Soviet psychological and geographic constraints will ensure that our superiority in naval power remains secure. This realization has been insufficiently articulated and understood within the U.S. Navy and at higher levels of government. The naval power equation may yield the naval budgetary key to the heretofore unanswerable question: "How much is enough?" As responsible military managers and naval officers, the ramifications to our Navy of the naval power equation merit careful consideration.

Second, we should attempt to engage in naval arms limitation talks with the Soviets. We should continue this attempt as long as we can negotiate from superior strength within the naval power equation and as long as we perceive what is essential in the strategies and force structures of the two navies. It is then to our advantage, as in chess, to "trade down." Casting out naval strength in equal proportions–predicated upon the combined "Size of the Navy" and "Quality of Navy" of the Soviet and United States naval power equations–*increases* our relative margin

BIOGRAPHIC SUMMARY

Comdr. Clyde Smith, U.S. Navy, holds undergraduate degrees from both Oklahoma State University and the University of Maryland, a master's degree from Oklahoma State University, and is a graduate of the Armed Forces Staff College and the Russian Language School. As an intelligence officer he has served in West Berlin, on the staffs of Commander 7th Fleet and Commander Cruiser-Destroyer Group 8, and has had three separate tours in Vietnam–Naval Intelligence Adviser in the Naval Advisory Group (1964-65), Staff Intelligence Officer to Commander River Assault Flotilla I (1966-67), and Chief of Operational Intelligence to Commander Naval Forces Vietnam (1970-71). Commander Smith is a recent graduate of the College of Naval Warfare and is completing a second master's degree at the University of Rhode Island in marine affairs.

of superiority in naval power. To possess such superiority but to be unwilling to engage in such talks disserves our defense budget, national economy, and the American people. Such a policy ignores enormous opportunity costs—the alternative uses to which those unnecessarily expended resources could have been productively put.

Admiral Gorshkov clearly believes that naval arms limitations talks are not to his navy's advantage. While inferential, this may be a further indication that such talks could redound to our national benefit. In view of the traditional Soviet landpower mentality, it seems conceivable that Soviet leaders might accept such talks over the objections of Gorshkov. Army-navy interservice rivalries in the Soviet Union are severe, and a United States proposal for such talks might greatly appeal to the army-dominated Soviet Military Establishment.

NOTES

1. My principal concern in this paper is with physical geography and with ways in which the Soviets have responded to that physical environment. To a geographer certain causal relationships which I have postulated between this physical geography and Soviet perceptions on the utility of the World Ocean may seem overly simplified, although I felt simplification necessary in order to keep this commentary within reasonable confines.

2. Admiral Gorshkov, in the lead article in his series "Navies in War and Peace" (*Morshkoy Sbornik*, No. 2, 1972), p. 20, states:

> The qualitative transformations which have taken place in naval forces have also changed the approach to evaluating the relative might of navies and their combat groupings: we have had to cease comparing the number of warships of one type or another and their total displacement (or the number of guns in a salvo or the weight of this salvo), and turn to a more complex, but also more correct appraisal of the striking and defensive power of ships, based on a mathematical analysis of their capabilities and qualitative characteristics.

Admiral Zumwalt has stated in the U.S. *Congressional Record*, vol. CXVIII, No. 94, p. S9187:

> . . . a direct comparison of the two fleets, unless heavily footnoted, cannot mean very much. Nor is a direct comparison of platforms very useful. With very few exceptions, U.S. ships are not designed to fight Soviet ships of similar classes. Therefore, it is of little value to contrast . . . characteristics. . . . What is important is how well the platform, or the fleet, can carry out its assigned tasks.

3. For example, in Marshal V.D. Sokolovsky's (ed.) *Military Strategy* (Moscow: Soviet Ministry of Defense, 1968) all of the authors and reviewers of this official Soviet view of military strategy were marshals, generals, or colonels. The Soviet Navy was apparently not permitted any substantial contribution to this Soviet statement of strategy. While the 1968 edition of *Military Strategy* was the third edition of this work, this same circumstance appertained in the first two editions also.

4. Admiral Gorshkov has been Commander in Chief of the Soviet Navy since 1956, is the father of the modern Soviet Navy, and is, by this achievement alone, the greatest naval officer Russia has yet produced. In 1972 and early 1973, he published in the Soviet Naval Digest *(Morskoy Sbornik)*, a series of 11 articles containing about 50,000 words. While individual articles had individual titles, the series itself was entitled "Navies in War and Peace" and is the most comprehensive and authoritative pronouncement on seapower ever to come out of the Soviet Union. This series is being published and examined piecemeal throughout 1974 by the *United States Naval Institute Proceedings*.

My article, entitled "The Meaning and Significance of the Gorshkov Articles," presents an analysis of this series as a whole in the March-April 1974 issue of the *Naval War College Review*, pp. 18-37.

5. The Soviets call this force a "squadron" (eskadra), while it is U.S. Navy policy to refer to it as a "fleet" in official writings. This force has in fact assumed the proportions of a fleet in size and composition. It draws its ships from the Black Sea and Northern Fleets primarily, to which they return after completing their "Med cruise."

6. "Naval infantry (morskaya pehota) are Soviet marines.

7. The Soviets are, however, now building at least two aircraft carriers in the Black Sea of the *Kuril* class. These are small carriers and will not have the capabilities of our modern attack carriers.

8. As early as 1968, as Robert Herrick noted in *Soviet Naval Strategy* (Annapolis: United States Naval Institute, 1968), p. 111, the Soviet Union believed that the United States had a system of long-range underwater sound detection for making initial detection and tracking of submarines. The Soviets have no long-range or sophisticated capability against our strategic missile submarines or modern nuclear attack boats. Even Gorshkov, in his series in *Morskoy Sbornik* admits this, albeit indirectly. The U.S. Navy possesses a clear edge in active and passive sonar technology and in general ASW expertise over the Soviets.

9. As quoted by David Fairhall, *Russian Sea Power* (Boston: Gambit Inc., 1971), pp. 46-7, Robert McNamara described in 1969 our general war at sea strategy and the way in which we would try to preserve our merchant marine:

> . . . our war at sea strategy is based essentially on the rapid emplacement of ASW forces, comprised of submarines and land and sea based ASW aircraft, between the enemy submarines and their potential targets. Recent studies have reaffirmed the potential effectiveness of this concept and the probability that in an all-out war at sea we would be able to destroy a very large proportion of the Soviet submarine force in a matter of a few months while losing only a relatively small part of the free world merchant fleet.

10. Herrick, pp. 143-57. When Herrick's book first appeared, statements therein similar to this caused consternation in U.S. Navy circles. For if this were true (and it was and is), it affected U.S. Navy budget requirements, our conceptions of what a proper strategy to counter the Soviet Navy should be, and our force structure to implement this strategy. We have an honest but inaccurate bias to see the Soviet Navy through our eyes instead of theirs. We tend to view their navy as one, like ours, designed to exercise assertive sea control in "blue water" areas or near foreign shores and to project power ashore. However, the structure of the Soviet Navy, their lack of organic at sea air cover, and the constraints which naval geography imposes on them do not reflect this philosophy.

11. Admiral Zumwalt has candidly noted this in the U.S. *Congressional Record*, vol. CXVIII, No. 94, p. S9187: "The Soviet Navy . . . as a Navy in support of a nation whose vital interests are those of a landpower, is designed largely to prevent the U.S. Navy from carrying out its missions."

12. The alongside method which the U.S. Navy uses is more efficient primarily because it is faster, which limits the period of vulnerability of the replenishment formation to submarines or air attack. The alongside method also requires special refueling rigs and expertise.

13. For a perceptive analysis of this problem, see Frank B. Case, "Time to Secure the Seas," *United States Naval Institute Proceedings*, August 1973, pp. 25-31.