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THE FLEET BALLISTIC MISSILE SUBMARINE—AN IRRESISTIBLE FUTURE

by

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Several decades ago, when the fleet ballistic missile submarines were first commencing their patrols, copies of a certain seascape were distributed. Subtitled "*Polaris on Station*," it showed an empty ocean and a gull wheeling above the gray waves. The painting was a favorite of Admiral Arleigh Burke, then CNO, who saw to it that it came to the attention of many.

The SSBNs are on patrol still. Their missiles, increasing in range, accuracy and payload, have evolved smoothly through successive modifications of *Polaris* and *Poseidon*; there is now *Trident I* and eventually there will be *Trident II*. Year after year SSBNs have been going to sea, disappearing and returning in accordance with their unannounced schedules. The Blue crew departs, the Gold takes over. The very silence that attends it is testimony to the soundness of the concept, the technical skill and imagination going into its creation, and no less to the character and training of those who man the "Boomers." Some day, far off, they will tell their stories; perhaps too there will be novels worthy of these men and their ships. The right ones will catch the

human flavor, the exhilaration when the first topside hatch is flung open at patrol's end, the joy of fresh air and sunlight once again.

An irresistible idea from the outset, the argument for placing more nuclear deterrent power in submarines grows stronger. Yet doubts persistently shadow that message so perfectly conveyed in Admiral Burke's popular seascape.

Some shadows should dissipate naturally. The saga of the *Trident* submarine's construction difficulties will not be dwelled upon. One suspects, from history of other painfully born weapons systems, that the troubles will recede in their wakes as first *Ohio*, and then other *Tridents*, slip away on patrol routinely and all but unnoticed. Nothing vanquishes criticism like success.

Ambivalence pervades the Navy's own attitudes towards its SSBNs. There is admiration for their superb professionalism, respect for their vital role. But there is also the view that regards the SSBNs as a force apart, not really quite naval at all, while at the same time they are large consumers of resources that presumably could be used to

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strengthen a Navy hard pressed on many seas. The validity of that view, however, is based upon the wishful idea of a more fluid interchangeability of funds than is borne out by experience of the real world of appropriations. Had SSBNs never existed, it does not automatically follow that today's Navy would be richer by another aircraft carrier or a single frigate. These must justify themselves through the logic of different debates.

However, the author would like to slip away from unsatisfying arguments and take a different tack. To try to turn grudging acceptance into something better, we offer thoughts on two levels, both conceptual and inspirational. First the conceptual.

Begin by rejecting the perception that holds the SSBN to be alien to our fundamental notions of seapower. In the SSBN we see exemplified great mobility, concentration of firepower, the ability of a warship to lose itself in the vastness of the oceans only to reappear and be ready once again when needed; we see too the ability to project power ashore and to measure the involvement of that projected power, to fire and wait, to disappear and return to fire again. It is naval power that a returning Mahan would not find difficult to accommodate to his theories. It is the protean embodiment of presence and deterrent power.

On the inspirational side we simply assert that over a span of turbulent flowing history in which U.S. pride and prestige, its strength as well, has undergone more than its share of affronts and bruises, the SSBNs have been a memorable success, a source of gratification to the nation. The glow of their performance has brightened the Navy.

Most enduring of the doubts about the SSBN, however far-fetched, still revolve around questions of potential vulnerability. Doubts are kept alive in some quarters not entirely in the spirit of pure inquiry

Start with that number that confers some 14,000,000 square miles of operating area for the SSBN with the Trident I missile . . . and at once dismiss it, acknowledging the generous serving of hyperbole. It is not as if, in all those millions of square miles of ocean, that possible SSBN locations are randomly distributed, offering no clues to whittle down the area of uncertainty. When the SSBN takes departure for patrol, passing within visual range of the inevitable friendly neighborhood AGI lying just outside territorial limits, its position can be fixed by radar within yards. Similarly, on day fifty-nine, say, of a normal sixty day patrol—recognizing the generally regular patterns of behavior that routinely serve the needs of morale and logistics in unthreatening times—it is obviously heading for home and closer to the sea buoy than when midway through its deployment.

Targeting requirements and stringent demands on time to respond may impose additional constraints on seemingly illimitable ocean areas. With a handbook of the Soviet Union and a few of those astonishingly informative GAO publications detailing U.S. options in strategic missilery, a globe and a piece of string for swinging arcs, any high schooler can make interesting guesses. But when this has been said, and even conceding to the Soviets formidable capacity for logical synthesis of disparate fragments of information, it remains manifest that the unknown expanses of ocean in which the SSBNs may roam is dauntingly large.

One suspects that we study how our SSBNs might possibly be located more assiduously than do the Soviets themselves. It is no tiny cottage industry that seeks to discern, and in some instances out of desperation to invent, threats to our SSBNs. Uncovering them requires digging and often suspension of normal qualities of disbelief. One must impute to the Soviets new discoveries of science, applications of technology

unknown to ourselves, and overleaping advances in sensors that ignore the modest evidence of their many year track record. Study demands consideration, along with acoustics, of all kinds of exotic and nonacoustic phenomenology, lasers, radiation, infrared, turbulence anomalies, heat, internal waves, biologics, contaminants, magnetics and electromagnetics, even neutrinos, as possible candidates for detection and tracking. The foregoing are a sampling of items bandied about in the unclassified literature, a grab bag for the serious researcher and the imaginative amateur alike.

Any of these ideas theoretically can serve. But it is easily forgotten that the detection process in the sea is always a matter of catching hold of short-lived phenomenon of passage, or a struggle against terrific energy losses to discriminate useful signals against a cluttered background and, in the quest for longer ranges, a setting of detection thresholds that risk soaring numbers of false alarms beyond which the process becomes self-defeating. Get close enough and one can probably detect an SSBN with anything. But how does one manage to get close in the first place? There's the rub.

A flaw in many studies, and the cause of their frequently somber tone, is too quick a willingness, having found reference in Soviet writings to research in some area, to be convinced that our adversary has attained a workable, indeed threatening, capability and is taking it to sea. In this it helps to be young. Then concern over what the Soviets may be able to achieve is unhampered by memory. One does not have to recall the tremendous surge of research by the United States in alternative detection schemes that grew out of the Battle of the Atlantic, and which went on for many years afterwards, nor how the vigor of investigation waned as the promise of each new idea turned to

In conjunction with predictions of great advances in sensors, but perhaps also to compensate for those advances not being fulfilled, it is necessary as well to impute to the enemy tactics involving extraordinary numbers of ships and airplanes. Sometimes it will be Soviet surface forces conducting broad searches meant to drive the SSBNs into a killing trap, to corral them; in other cases it may be aircraft making magnetic anomaly detector sweeps. This latter one is an oldie, reviving periodically to compete for our attention and ultimately, good sense again triumphant, to be discarded. For if it helps to be young, it is also *de rigueur* to be without operational experience, to know the sea and military forces only from books. One must believe in the picture of large numbers of long-range Soviet aircraft—try thirty, *fifty*—operating thousands of miles from their bases, flying abreast a few miles apart in a front a hundred miles wide, using a short-range localization device and skimming a bare few hundred feet above the ocean surface hour after hour. These aircraft must be relieved by another equally large flight of aircraft, and then yet another . . . a million square miles of ocean searched out in a few days.

Such an operation, in which there are no false contacts or gaps in coverage, where bad weather never intrudes and the MAD gear works perfectly in the hands of errorless operators, bears no relation to the untidy world of oceans that the U.S. Navy knows. Implicit too in these scenarios is the assumption that numbers, indefinitely increased, can do the trick. Four times as many ships do four times as well; ignored are the coordination problems, the saturation of the environment with noise, the rising rates of self-generated false contacts and the sharp decline in efficiency.

A further condition indispensable to accepting any possibility of the foregoing kinds of hypothesized operations succeeding is adherence on the part of

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the U.S. Navy to what must be described succinctly, if not with analytical precision, as the "fat, dumb, and happy" syndrome. No matter how startling what is happening out there—whether it be surface forces steaming back and forth across critical patrol areas, or an armada of Bear-Fs thundering over the wave tops—we are oblivious, without interest or reaction. Not merely, by the way, has the nation failed to note the creation of all these extra forces the Soviets would need to carry out these awesomely forced scenarios—a buildup that would take years—but our SSBNs feel neither curiosity nor alarm. They do not turn away from, and at once set distance between, those persistent sounds of hostile echo-ranging being heard even through the hull. They simply plod on in patterns of unflinching repetitiousness. Nor does higher command see fit, at the first signs of such unprecedented Soviet operations, to move decisively to order our SSBNs to remote areas beyond the reach of the would-be detector and his weapons. As if there were not, when survivability suddenly becomes the dominant objective, *hundreds of millions* of square miles available when the great southern oceans are included.

Generally glossed over in consideration of these SSBN-threatening scenarios, is the context of politico-military strategy in which they would have to fit. We do not delve sufficiently into what reasons presumably the Soviets would be trying so mightily to kill our SSBNs. The effort would not be made in isolation. It does not make sense to try to kill one or two SSBNs; there is logic only with intent to destroy them all. Otherwise, the result is merely to sound an enormous alarm, alerting, probably panicking, the U.S. into action whose consequences the Soviets could not predict but which would, as a minimum, cost them surprise.

Thus if the Soviets *were* to mount such an effort it would have to be

accomplished covertly, and as part of a total strategy in which the mass destruction of the SSBNs is coordinated with closely timed, intricately planned strikes at the full strategic deterrent power, land-based and air-based as well, of the United States. This presumptive dark miracle, with its added challenge to the Soviets of placing themselves, without U.S. knowledge, in position to destroy all SSBNs simultaneously and on signal, is, of course, another subvariant of the "out of the blue skies" scenario. It is a script, as Herman Kahn observes, in which no one over fifty can believe. Least of all can one credit it to the coldly rational and cautious power structure of the Soviet Union.

If a certain lack of reverence has been noted in this inquiry into SSBN vulnerability—and space precludes addressing a host of other theories that crave rebuttal—one can only reply that there are matters for which only irreverence will do.

One occasionally wonders if such study, most of it supported by the Navy itself, has not in a curious and unintended way served to keep alive doubts which otherwise could be dispelled. Continual questioning confers plausibility to questions that do not merit it. To the outside observer our SSBNs are a system seemingly constantly in need of reassurance. There is no precedent, it is something new in the world, for a system so terrific, demonstrably so successful, to examine its performance with such minute introspection, as if ever fearing the worst.

Yet it is an explicable paradox that the Navy itself is the primary sponsor of these studies. To begin with, it is mandated by Congress. But also the effort has much substantive value. It keeps us thinking, alert, virtually eliminates even the remotest possibility of being out-paced technologically. No less importantly, it defends against domestic political surprise. It is protection against the foolishness of such

predictions, repeated by some who ought to know better, that in a few years (fill in any number you wish) research will have found a way of making the seas "transparent," presumably in acoustic terms. The Navy's money is well spent on the kind of homework that allows it to reply with confidence: *Baloney!*

Consider though. Just suppose that—at some future time, in some unimaginable way—the seas actually were rendered transparent. Literally. All at once, the wave of a magician's wand and the seas become clear as crystal, every submarine instantly as visible as the giant bluefin tuna migrating across the glittering shallows off Bimini. How bad off would we be? Well, if every SSBN were totally visible at all times, and indeed also obligingly bathed in floodlights by night, the problem of an enemy's fulfilling the essential conditions of their neutralization, the continuous tracking and instant readiness for the coordinated destruction of them all, would remain immense, probably impossible still. Nor, by the way, is the SSBN exactly toothless if it has to eliminate a pesky shadower. Readers may detect here echoes of arguments that defend the idea of taking deterrent power to sea in surface ships as well. Fair arguments they remain too.

The irony is little remarked how vigorously we exercise ourselves over hypothetical perils to an elusive SSBN continually in motion, able to alter its area of uncertainty by a thousand square miles in a single hour, a quarter of a million square miles in a day, when compared to the fixity of our missiles in silos, their surveyed locations known to the same inches of accuracy that one's lot is written in the county records.

Some advantages of the SSBN and the case for making more deterrent power to sea have already been implied, others are so obvious that they have become cliché and it is hard to make ourselves listen. Here we go anyway. As

has been said, mankind needs less to be instructed than to be reminded.

Of invulnerability, and hence survivable power, enough said. In nuclear strategy such are chips of gold in an impervious vault.

Equally obvious is the truth that to the extent that we take nuclear weapons to sea we remove crucial military targets from the land where people live, away from cities and farms and industries that constitute our societal network, the civilization that we resolve to preserve.

An advantage of the SSBN is the testable, directly measureable, confidence that we can place in its dependability. At sea we are able to proceed through the full sequence of command and control, launch, firing, flight and impact phases of system operation, including random missile selection, in procedures that cannot be duplicated realistically with land-based missiles close to cities. The foregoing leads to contemplation of another factor, less often mentioned, which is the inherent advantage of military power concentrated in a military vehicle, completely militarily manned, divorced from external support. Sixty days at a time men and ship are removed from home and highway, getting to and from the job, and the beguiling distractions of the civilian interface. On patrol the ballistic missile submarine represents to the nation tautly contained deterrent power in a state of constant alert, dedicated to its task twenty-four hours a day.

A profound evolution of U.S. nuclear strategy, although it has been taking place over a number of years, only recently has gained prominence in the public consciousness. Change has taken place through realization that what deters the United States from nuclear war is not necessarily what will deter the Soviet Union. The Soviets have made it plain that they do not believe in Mutual Assured Destruction (MAD). The widespread American view of nuclear war, i.e., that the first use of any

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nuclear weapons will swiftly and inevitably escalate into the spasm of all-out attack, leaving merely dazed and hopeless survivors in the ruins to repent their follies, and with nothing more happening after this exchange of punishment, is not reflected in Soviet strategy or tactics. Terrible as these weapons are, the Soviets regard them not for deterrence, but for the fighting and the winning of wars. Now, the average U.S. citizen's attitude towards the use of nuclear weapons may, at bottom, be absolutely the accurate one—even as we seek through the dialogue of SALT and other means to persuade the Soviets that their view is the wrong one—but the challenge remains. We are forced to confront the asymmetry of the opposing views and to ask ourselves what it is then that *will* deter the Soviets. We do not know for sure, but there is one thing that ought to stop them.

It is not, as many persons are quick to fear, and as Soviet propagandists play the hypocritical tune, that we are planning to fight nuclear wars, or toying with the idea that such can be won. Rather, U.S. strategy is to convince the Soviets that *whatever kind of war they might choose to start, they cannot possibly win*. To keep that thought constantly in the forefront of Soviet consciousness, no better way exists than sufficient SSBNs at sea. Capable of firing its payload in large salvos, or metering it out in discrete deliveries as commanded over time, able to attack from unpredictable directions, the SSBN constitutes a uniquely flexible and indestructible war-fighting capability whose meaning is unmistakable to the Soviets. No vehicle can serve so well the demands of new strategies that must be credible to the Soviets beyond any possible temptation of perilous miscalculation. This emerging truth, more than any other, argues for greater U.S. reliance on the deterrent advantages of the SSBN. Evidence is growing that the

people of the United States are getting together on this one.

Something like a national consensus recently seemed to take shape in regard to the proposed MX deployment scheme, all the many variants of the "shell game," and in the President's subsequent decision to defer further action until 1984. For a fleeting time at least a disparate body of opinion—conservative and liberal alike, Easterner and Westerner, the environmentalist and many a military professional as well—were united in opposition. A wave of negative feeling surged and peaked. The whole vast assemblage of concrete holes and poky transporters out there in the desert all at once struck a great many people as a poor way to proceed, an idea whose time had passed. It seemed that the most advanced technological nation on earth ought somehow to be able to find a better way of doing the job. Deferred for several years, the idea is probably dead forever.

The author is not aiming to topple the Triad, though not averse, as is evident, to giving it a nudge. Also we observe that the arguments for it are not graven in stone and history records, in weapons as everything else, a new star's ascendancy while another sets. The logic of its circumstances suggests that the value of the land-based missile will diminish, the uses for which it is uniquely suited inexorably shrinking. Given the missiles present and forecast for the SSBN—given too the increasing prospects of accuracies comparable to those fired from land—justification for the land-based missile appears to narrow to, and to hinge upon, the issue of *connectivity*. If it be deemed an imperative that unbreakable and secure communications—such as are only possible, if at all, only through land-lines—continuously link at least one leg of the Triad, then the case for the land-based missile continues *prima facie*. However, the author questions the basic premise of

such ironclad connectivity, believing it not indispensable in terms of nuclear strategy and doubting the attainability of that ideal in practice.

Today's on-racing pace of technological development has left the average citizen far behind, groping in a fog where understanding of military weapons is concerned. The sciences upon which they are based have grown increasingly abstruse, the systems ever more complex, and theories of war have acquired vocabularies indecipherable except to the specialist. Not so long ago, a man might roughly relate the instruments of war and its vehicles to something touching his civilian existence, the four-wheeled vehicle, the rifle with which he hunts deer, the piston-popping aircraft, and the artillery shell, the latter's explosions not so different, except in magnitude, from what he saw when dynamiting stumps. No more.

Yet once in a while fortunately the citizen may suddenly, and gratifyingly, grasp something about one of the mysterious systems for which he pays his taxes. A ray of light comes through a chink in the clouds, illuminating some truth that had been hiding from him.

Consider our citizen more closely. If the world at times baffles him, he also has the affluence to help put worries aside. He can travel to lovely places. Picture him winging to Hawaii, say—he may be a doctor from Sauk Centre, a grocer from Waco, no matter—his thoughts are on pleasure, of palm trees and warm beaches waiting. A few hundred miles out from San Francisco the coastal clouds clear and he looks down at the Pacific. He leans back, sips a cocktail, munches from a packet of macadamia nuts. Meal and movie come and go and

still the flight drones on, five-hundred-fifty miles an hour. He orders another mai-tai—why not, it's vacation time, hi-ho—and after a doze that ocean is still below, his plane seemingly suspended above an infinitude of blue. It occurs to him that there's an awful lot of ocean out there and that on his entire flight he has glimpsed but a tiny fraction of it. And at this point he has an inkling at least of the truth that mariners learn the hard way—a reality that cannot be grasped by putting one's arms around a twelve-inch globe—that the earth is mostly immense wastes of water.

Back home, when our rested traveler reads headlines on nuclear strategy, or hears noisy debate on the tube, recollection may stir in him of those hours flying over the ocean. And suddenly it hits him: "Hey, *there's* where to put those beasts, far from my town and where no enemy can ever find them." Now almost certainly—and this is neither to patronize our citizen nor to enshrine lack of sophistication in a special dim world—he has no knowledge of acoustic propagation loss, never seen a sound velocity profile, and if he's ever heard of a neutrino, he may vaguely suppose that it's a kind of diet biscuit. But his instincts, multiplied millions of times, add up to a collective wisdom that time should only strengthen. *Because, hey, the guy is bang-on right!*

BIOGRAPHIC SUMMARY

Captain Smith, well known for his provocative articles on naval matters, particularly on anti-submarine warfare, is Vice President of the Summit Research Corporation near Washington, D.C.

