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ANTICIPATING ESCALATION IN SEALIFT PLANNING

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The Rand Corporation
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ANTICIPATING ESCALATION IN SEALIFT PLANNING

Kevin N. Lewis

The Rand Corporation, Washington D.C.[*]

Sealift will play a key role in any significant U.S. military contingency, regardless of the specifics of the scenario. Adequate shipping will be required early on in a conflict for such varied tasks as the insertion of amphibious combat units and the administrative delivery of initial support increments for land and tactical air forces. If a regional confrontation evolves into a protracted conflict, our success or failure in that fight could depend centrally on our ability to move sustaining payloads by sea.[1]

U.S. strategic lift planning for the most demanding conventional scenarios has traditionally revolved around four general considerations. First, we are concerned with the overall deployment situation at the time a decision is made to reinforce forward units and/or deploy new forces. This analysis would take into account prepositioned materiel (POMCUS and MPS), lift assets in hand, schedules for mobilizing supplementary resources (such as CRAF and NDRF), Allied mobility contributions (if any), the availability of critical support en route (e.g., aerial refueling), basing, overflight, transit, and other access approvals, and so on.

[*] The views expressed in this paper are the author's, and do not necessarily reflect those of Rand or any of its research sponsors. The reader interested in a list of acronyms used in this paper should turn to page 22.

[1] It is generally said that in a future conflict 90-95% of total tonnage would travel by sea; for Vietnam the figure was 96%. Airlift would certainly play an important role in a conventional scenario, but for transportation of the vast majority of war cargoes there is no substitute for shipping.

Second, we have to reconcile lift needs with effectively available capacity. What demands do deployment schedules and attrition fill requirements impose? How efficient is the total system--are goods getting through or stacking up on piers and at air bases for want of intratheater transportation? Is the intensity or tempo of fighting likely to change? What kinds of economic support, domestic cargo, and other "indirect" lift requirements have claims on available carriers? Taking such factors into account over time, we develop dynamic net payload requirements. By comparing these with available capacity, we can determine the degree to which lift shortfalls exist at varying times for selected scenarios.

Third, given a baseline transportation "balance sheet," we must account for the wartime degradation of our lift posture. Just how fast could we win a Third Battle of the Atlantic? Have ports and SLOC chokepoints been mined? Have decisions been made to withhold or evasively route convoys pending the successful first phase of an anti-submarine campaign? Have SPODs and APODs come under punishing aerial attack? Depending on the magnitude of the threat, lift capabilities that seem adequate on paper may prove very deficient in actual fact.[2]

Finally, in an extended conflict scenario, we will be quite interested in how fast new lift can be brought on line. Both of the

[2] True, there are a few ways in which we can offset such losses over the short run--acquisition of foreign ships, capture of hostile shipping, moving supplies earmarked for adjacent theaters to the immediate scene of fighting, etc. --the British requisitioning program in the recent Falklands conflict and the U.S. reinforcement of Israel in 1973 are two useful models of improvisational lift augmentation. But in a large scale conflict, these kinds of gains would probably be relatively marginal compared to the drawdown of our basic lift posture as a result of enemy action.

general European wars of this century essentially involved what amounted to a race between Allied ship production and ASW efforts, and German submarine production and operations. In April 1917, for instance, U-Boats sank a record 881,000 tons of shipping, and in the summer of 1917, it was estimated that available Allied shipping would fall below the level considered minimally adequate by October if losses were not reduced and/or replaced--convoying eventually saved the day. World War II saw just the same situation: our net shipping losses for 1941-1945 ran to about 5,300 ships--by contrast the U.S. shipbuilding industry alone produced nearly 5,600 ships between 1942 and 1945. Though our post-World War II fixation on sudden, intense, and above all, short wars has blinded many to the possibility of another extended attrition/replacement competition, such a scenario is perfectly within the realm of possibility.[3]

To develop formal lift posture blueprints we design a few canonical scenarios and select planning factors that can be plugged into models to characterize quantitatively the four kinds of consideration listed above. We essentially wind up with a family of curves that we can overlay on an aggregate payload vs. time plot to see if a given mobility posture is adequate in the face of postulated challenges. By varying pertinent assumptions and planning factors, we change the shape of the displayed curves and translate them along the time axis. What we would usually expect to see is a "bathtub" of lift throughput, if you will. At the start of a war, we might, for instance, be able to make do with prepositioned stocks and existing mobility resources. But eventually

[3] See the present author's "Sustaining Sealift in Extended Conventional War: Setting the Stage," Proceedings, 1982 Mobilization Conference, Industrial College of the Armed Forces, Fort McNair, Washington, D.C., 29-30 November 1982 (Conference Papers Volume 1).

attrition and other forms of lift degradation might combine to push effective throughput down, possibly to the point where net logistic requirements cannot be met. Eventually, the curves would tilt upward again, as the counter-lift threat is eliminated, as stabilization of the combat situation leads to (perhaps) reduced throughput needs, and as new lift (in the form of new construction, contributions from new-found allies, etc.) comes on line. As was the case in both World Wars, we could win or lose depending on the width and depth of this "bathtub."

Such an analytic process (rendered crudely here, of course) drives, at least in principle, U.S. strategic lift planning.[4] But too often omitted from the typical mobility calculus are some vital factors that could strongly influence--or under some circumstances even dominate--the generic considerations listed above. From the vantage point of a planner concerned with less-than-worst-case scenarios, one of the most important of these factors concerns the effects on lift planning the prospect of deliberate enemy escalation--whether in the types or intensity of means used, or in locations of attack--would impose.

Why hasn't this threat figured more prominently in U.S. lift planning heretofore? We have not focussed much analytic attention on how to compensate for deliberate enemy escalation in many areas (among them sealift) for several reasons that relate to our recent defense experience. First, the United States entered both World Wars after fighting had been underway for some time. The war had, in effect, already escalated about as far as it was going to go (and in any case the U.S. had had some time to warm up its sealift mobilization base).

[4] See, for example, Alain Enthoven and K. Wayne Smith, How Much is Enough: Shaping the Defense Program 1961-69, Harper and Row, New York, 1972, pages 234-242, for a typical discussion.

Second, postwar U.S. defense strategy has, to varying degrees, been based on the assumption that nuclear weapons could serve as a sort of all-purpose deterrent to deliberate enemy escalation in major contingencies. Third, the very same focus on nuclear deterrence has fostered a "short-war" attitude among U.S. planners in which only assets in hand when war began would be relevant to large-scale fighting. Fourth, in our recent so-called "limited war" experience, the apparent threat to sealift has seemed, at worst, trivial.[5] Finally, given the chronic absence of political and budgetary support for strategic mobility forces, it has always been hard enough to satisfy lift requirements for a war fought by our own rules, never mind any more demanding scenario.[6] In sum, there has been no room in our postwar contingency planning for escalatory threats against lift. In major scenarios, it is supposed that lift will operate in an already escalated environment; in limited war scenarios, the escalatory threat to lift would remain negligible throughout the conflict.

Thus has the problem of deliberate escalation by the enemy not figured prominently in portions of our logistical planning. However, recent trends have combined to render continued neglect of this type intolerably risky. In an era of strategic parity (or, some even have said, inferiority), the United States can certainly not expect nuclear threats to deter very many kinds of escalation. Technological trends,

[5] Only a few ships were lost in the Vietnam conflict, for instance, all due to sabotage. It is interesting to note that the Soviet sealift experience since World War II has not been an unopposed one--recall the Cuban blockade, the mining of Haiphong harbor, etc.

[6] The hopeless nature of alternative contingencies has understandably discouraged a closer inspection of the extra threat to lift that escalation poses. See William W. Kaufmann, Planning Conventional Forces, 1950-1980, The Brookings Institution, Washington, D.C., 1982.

the proliferation of sophisticated weapons to many nations, and the increasingly global reach of Soviet military power add up to suggest that SLOCs will by no means be as easy to secure against attack by determined enemies as has been the case to date.[7] At the same time, projected equipment consumption rates have steadily increased, U.S. forces have tended to become "heavier" over time, and the number of locations in which the U.S. might have to fight at the same time has apparently risen. The U.S. lift posture is composed of fewer, higher value, and while more productive, often less self-sustaining, assets than ever before; thus, individual ship losses or the destruction of logistic infrastructure is relatively more likely to be catastrophic. Perhaps most important of all is the fact that a new kind of scenario, one falling between the canonical short warning, all-out NATO-Pact war and a limited, incremental third world operation, has become grimly plausible over the past few years. The typical case cited is a conflict in the third world in which U.S. and Soviet forces are in direct conflict.[8]

All in all, the U.S. should expect no longer to call all the escalatory shots; and the ability of potential adversaries to escalate in ways most inimical to U.S. fortunes has increased dramatically as well. That being the case, it is probably now worthwhile to think the escalation threat through in some detail as far as it concerns the main component of our strategic mobility triad (at least in extended

[7] As an illustration of what may be more likely in the future, we should recall that (though their fears were probably exaggerated) many people were concerned that the Queen Elizabeth II was being stalked, and might be sunk, by Argentine submarines.

[8] See my "Reorganizing U.S. Defense Planning to Deal With New Contingencies: U.S.-Soviet Conflict in the Third World," Paper P-6799, the Rand Corporation, Santa Monica, California, August 1982.

conventional wars), sealift. True, escalation is not guaranteed, even if the U.S. and USSR find themselves in direct confrontation. Even in fairly intense contingencies, both sides will probably continue to perceive the advantages of fairly tight restrictions on the scope, means, etc. of fighting. In fact, a future U.S.-Soviet regional conflict may be subject to a bewildering array of formal and tacit restraints.

Yet while curbs on escalation may be strong, the results of more intense than expected attacks on our shipping are so potentially serious that we should not overlook such threats in our planning. Indeed, if a deteriorating theater situation (and the prospect of uncontrollable escalation to a nuclear disaster) loomed, strong pressures might emerge to invest in a maximum conventional effort to settle the issue before points of no return had been reached. Similar escalatory pressures, possibly nuclear ones, would exist if a "smash and grab" Soviet offensive had stalled out and if an anticipated U.S. reinforcement seemed sufficient to erase Communist gains. In these and other situations, lift could be a leading candidate target for deliberate enemy escalation. U.S. lift might be a doubly attractive objective in many third-area scenarios because the destruction of hard to replace mobility assets might induce the U.S. (and its allies, if any), to fall back in order to avoid jeopardizing more important theaters, particularly Central Europe.

In what ways might the threat of war-widening actions directed explicitly against U.S. sealift resources influence planning for conventional war contingencies (particularly in third-area scenarios)? For the sake of analysis, some theorists have attempted to develop a

distinction between "vertical" and "horizontal" escalation. The former implies an increase in the intensity of fighting; resorting to nuclear weapons in a previously conventional conflict is the classic form of vertical escalation. This is said to be different from horizontal escalation, which usually refers to an expansion of a conflict to include new regions or objectives that are not strictly related to previous developments.[9]

This taxonomic distinction is, in my view, not a terribly useful one, especially when naval situations are being considered. In particular, this taxonomy fails to allow for key asymmetries in many scenarios: one nation's "horizontal" escalation may come to seem a "vertical" affront to someone else. There is no doubt, moreover, that were U.S. and Soviet forces to come into direct confrontation, the spectre of irreversible conflict expansion to general war will cast a pall over other considerations--no matter what theoretical inhibitions are said to be in force at any particular point in time. All in all, the proposed "horizontal/vertical" distinction leaves something to be desired in both principle and practice. Nonetheless, as both terms have come to be widely used, I will retain them here for the sake of terminological convenience.

Just to give a better feel for the scope of the anti-logistic escalation menace, consider two variants of a currently popular Persian Gulf scenario. In both, Soviet forces have attacked Iran and have made good progress down to the Zagros Mountains. But by this time, Allied

[9] See Kevin Lewis, et al., Lateral Excursion: A Strategy Option, the Rand Corporation, Report R-2992, forthcoming, for a discussion of this distinction. Note that "horizontal" escalation does not refer solely to geographic war-widening, although this is the most commonly used meaning of the concept.

defensive elements are able to slow down the invading formations, and the Soviets' logistic network is beginning to deteriorate under heavy air attack. At this point, U.S. reinforcements near ports in the Gulf area (which have been greatly improved by U.S. engineers). Though these reinforcements are probably incapable of rolling back Soviet echelons, it seems likely that a Western defense perimeter can be established sufficiently far inland to secure vital resources and communications.

Faced with the ominous prospect of a costly stalemate, the Soviets contemplate decisive escalation possibilities. Now, throughout the conflict to this point, we have retained the usual assumptions that only targets within the immediate area of operations (not including the USSR) had been fair game for attack and that nuclear weapons had not been used--or their use even threatened. [10] Here, one "vertical" escalatory option would be to use a handful of nuclear weapons to shatter the U.S. in-theater port infrastructure. Given the time needed for the reconstruction of port facilities and a shortage of "over-the-shore" logistic resources, this strike might serve to delay the arrival of the main U.S. force long enough for the Soviets to seize their primary objectives. Similarly, "horizontal" escalation could include widespread attacks on U.S. shipping outside the immediate Persian Gulf/Arabian Sea area. Cruise missiles deployed on a number of platforms could be fired at ships in transit, and chokepoints and harbor areas might be subjected to attacks by commandos and mines.

[10] These assumptions are not at all far-fetched for a number of reasons, the least of which relate to a potential Soviet desire not to galvanize worldwide military resolve adversely (if possible) by avoiding recourse to unrestricted, hemispheric anti-shipping operations or to nuclear employment, and to a western decision not to risk escalation by attacking targets in the Soviet homeland.

These illustrations are not intended as useful scenarios for planning, only to suggest how grave the threat to the U.S.' strategic position a deliberate Soviet conflict widening option against sealift could be. Though many other considerations would be involved, such threats obviously should be considered in our peacetime mobility planning. But here enormous tradeoffs and uncertainties loom. For instance, if we were certain that the Soviets would never use nuclear weapons first, we would naturally exploit every possible economy of scale to be accrued in developing just one "super-beachhead," convoying our ships, building our posture around intermodal containers, etc. If, on the other hand, nuclear strikes seemed fairly likely, we would design our posture around fast, self-sustaining sealift--at a much higher cost per delivered ton. To improve our ability to cope with escalation we would, in short, have to compromise between maximizing available lift capacity and tolerating certain inefficiencies that would follow from compensatory measures.

A final decision in every case boils down to fiat, since it is impossible to say for sure what the probabilities of some kinds of Soviet actions in certain scenarios are--indeed the odds of different kinds of Soviet choices are influenced by our decisions about which scenarios are more likely. In addition, many elements of our sealift and sea lane defense posture are already in hand, and so our freedom to conjure up some ideal future mobility force is quite limited. Even so, there are some courses that can be followed to help hedge against a reasonably broad spectrum of threats, and many of these can be incorporated into the existing and future lift posture. Therefore, it

is useful to list some approaches by which we can help deter and, if necessary, cope with some of the threats that enemy escalation poses.

Let us first consider the possibility of Soviet vertical escalation, by which we basically mean the first use by the USSR of nuclear weapons against sealift resources. This is certainly a very narrow, if significant, threat. On account of the uncertainties associated with the maintenance of control over nuclear fighting, it is clearly in our best interest to try to deter nuclear use. However, if deterrence fails, we are left with two tasks: appropriate retaliation and, to the extent possible, containment of the damage done.

Because of asymmetries in the superpower positions, planning a nuclear riposte to a Soviet strike against U.S. shipping raises grim questions. The U.S. is very dependent on its sealift--the Soviets probably would not be for most interesting scenarios. Moreover, in many nuclear scenarios, sealift plays a much more important role in the overall Western mobility equation. This results from the facts that POMCUS and the airfields which large airlifters use represent a limited number of very vulnerable targets, that resupply and replenishment needs could skyrocket, and that the JCS would probably dedicate our aerial tanker force (so vital to airlift operations) to SAC, not MAC. To respond "in kind" could, accordingly, require a fairly substantial attack against a broad spectrum of high-value Soviet military targets. Targets in the Soviet homeland might be included in such strikes. As an extremely grave situation could emerge from such a first round of nuclear use, a peacetime declaratory policy stressing U.S. determination to refuse to confine the scope of nuclear fighting to any narrowly defined setting (e.g., naval-only) is probably the best way to make sure

that the Soviets do not conclude that the gains to them of such an attack outweigh the potential costs.

In an age of nuclear parity, however, it is essential not to rely totally on automatic retaliatory threats or strategies that predetermine the rapid expansion of a limited nuclear confrontation. In addition to raising the apparent "costs" to the Soviets of escalating to the nuclear level, therefore, certain measures might be considered to diminish the perceived military dividends to be gained in a small nuclear attack on U.S. shipping (or, at the least, to complicate and inject extra uncertainty into Soviet attack planning). It is obviously impossible to harden large port complexes; moreover, in most locations, it would be politically impossible to undertake certain defensive preparations in peacetime. Therefore, the acquisition of a well-developed--and more important, redundant--Logistics Over the Shore (LOTS) capability could enhance deterrence. (A comprehensive LOTS program would, of course, be extremely valuable in a number of conventional scenarios, since the logistic net in many theaters of interest is poor to begin with.)(11]

Similarly, to the extent that we have some flexibility in designing and acquiring new mobility forces, we should recall that some ship types (such as Ro/Ros, and barge carrier and LASH types) may be better suited for operations in times of grave nuclear threat than others. They might, accordingly, be rationalized as hedges against nuclear attack on ports, as well as for their utility in third-world conventional scenarios. By the same token, procedures and equipment to assure fast

[11] For a comprehensive discussion of the U.S.' current LOTS capability, its deficiencies, and possible remedial steps, see Colonel Dan Beakey, Logistics Over the Shore: Do We Need It? National Defense University monograph series No. 82-6, NDU Press, Washington, D. C., 1982.

ship turn-around and quick movement of materiel into the intratheater logistic network will prevent the emergence of particularly concentrated targets of opportunity.[12] All in all, if the USSR estimated that the U.S. would have some ad hoc SPOD options open even should they take the ghastly step of escalating to the nuclear level, they might be somewhat further dissuaded from going nuclear in the first place.

Ships in the SLOC pipeline can be protected to a limited degree in both active and passive ways against nuclear attack. Relatively fast ships not only are harder to target accurately from afar, they also may not require convoying, thereby avoiding the creation of high value target concentrations at sea. By observing proper emission discipline, coordinating a range of Navy, Air Force, and Allied assets, and routing forces effectively, the U.S. could further complicate Soviet efforts to target shipping with their long-range nuclear strike forces. Conventional U.S. suppression of suspected shorter-ranged en route nuclear threats would be a vital adjunct to these other measures.

All in all, there are certainly a few steps that can be taken to anticipate, and hopefully in so doing, help deter, Soviet nuclear escalation against U.S. sealift. Yet while asymmetrical reliance by the U.S. and Soviet Union on shipping can be a sound pivot of our deterrent strategy in this regard, nuclear threats are two-edged swords. Moreover, our ability to defend our shipping resources against nuclear attack will remain limited no matter how much we spend. And nuclear defense of shipping is not only expensive, it would tend to reduce the

[12] At one point in the Southeast Asian conflict, for instance, over 100 ships were in holding patterns at Subic Bay and Okinawa, among other places, due to congestion at ports in South Vietnam. Many commentators have pointed out that LCACs, though more expensive and harder in some ways to maintain than traditional landing craft, can use their great speed to substantially reduce ship-to-shore time.

efficiency of what will inevitably be an overburdened fleet. Thus, relevant procurement efforts should probably be driven primarily by other considerations, such as the need to improve cargo handling in areas where port facilities are marginal in the first place.

Now let us turn to the much more likely problem of "horizontal escalation." Horizontal escalation would affect sealift planning in two ways. First, such escalation could involve potential or actual expansion of the number of active theaters, perhaps catching U.S. shipping out of position. If there is a risk of multiple conflicts and available shipping is insufficient, then priorities will have to be laid out. Just as in World War II, we might have to fall back on the strategic defensive in some theaters. Temporary abandonment of some regions might even be necessary.

Here, of course, one issue relevant to the threat of horizontal escalation concerns crisis and wartime relations with friends and allies. NATO's defense plans presume the availability of ships from many of our well-endowed maritime allies. However, in some third-world scenarios, or in situations in which our allies might unilaterally try to localize or retard a crisis, they might withhold ships; U.S. "flags of convenience" (the EUSC) may even be unavailable. But since this would reduce our ability to respond to actual or potential threats, a vicious circle ensues--the allies' reluctance to get involved decreases our ability to defend successfully in several places which in turn further aggravates the anxieties of allies and friends, etc. When it comes to strategic mobility, one unilateral U.S. solution to a possible "logistics gap" is to procure more more capacity; but here, if the political context permits, prepositioned stocks may often be more cost-effective than additional bottoms.

Of greater interest in the present setting is the possibility that horizontal escalation could include attacks against ships at all geographic points in their operational cycles. It is certainly possible that mobility "sanctuaries" might exist from the outset of fighting; in the usual RDF scenario, for instance, only ships in the immediate Persian Gulf/Arabian Sea area might be subjected to Soviet attack (say, so long as no air strikes against targets in the USSR itself had been attempted). Furthermore, when fighting a lesser adversary, the counter-shipping threat might be negligible in most places (as was the case in the Vietnam War). But a serious threat to shipping might extend all the way back to SPOEs; indeed, large-scale counter-shipping campaigns have tended to expand to involve attacks on ships at all points in their operational cycles.[13] And while prohibitions on direct attacks against targets in the homelands of each superpower might remain in force, mining and sabotage could still pose serious problems. In addition, as more and more nations acquire advanced weapons, we might have to contend with the longer reach of some smaller powers (some of whom regrettably are located near important SLOCs) or with opportunistic aggressors who might try to pursue local ambitions under the cover of a remote superpower conflict.

For these and other reasons, it is worthwhile to refine readiness concepts for worldwide sea-lane security, and possibly, to develop plans for appropriate retaliation should various enemies elect to expand the geographic scope of fighting in these ways. At first glance, the latter

[13] For an interesting illustration of this phenomenon in World War II, see Lieutenant (j.g.) T. J. Belke, "Roll of Drums," U.S. Naval Institute Proceedings, April 1981, pp. 58-64.

prospect is daunting. Although a few aspects of the Soviet empire may to some degree on shipping, we should probably only worry about their retaliatory attacks could improve our situation in primary theaters of interest. In addition, we can probably do a better job of our power projection assets than to scatter them in an attempt to prevent harassment by smaller powers. In addition, given the constraints on certain types of attack, we should probably focus our efforts on a more traditional battle to assure joint security.

The most important factor in planning for a threat escalation to conventional attacks is timing. In many regions, our ability to respond will be inadequate for sustained operations. Moreover, at distances can be so long, and port and air facilities in many places so deficient, that substantial lead-time problems would emerge. Our enemies will have the advantage of the initiative in any decision to escalate and will presumably unleash a coordinated blow with a full array of capabilities. Soviet submarines and long range aircraft will be able to attack targets at very long range--and the forward deployment of Soviet ships and shorter ranged aircraft to affiliated powers' bases along key SLOCs would compound the overall threat.[15] Finally, the operational doctrine, not to mention force structures, of

[14] Cuba is a general exception to this rule; in many scenarios Vietnam might be too. In many cases, we would probably want to take preventive measures from the start of fighting.

[15] See Robert J. Hanks, The Cape Route: Imperilled Western Lifeline, an Institute for Foreign Policy Analysis Special Report, Cambridge, Massachusetts, February 1981, for a relevant discussion of this point as it applies to SLOCs to the Indian Ocean.

many potential adversaries calls for intensive and brief engagement. All in all, if tenuous SLOC sanctuaries seemed on the brink of disappearing, the United States might find it in its best interest to preempt as necessary. Given the time sensitive nature of the strategic mobility problem, in other words, it probably would pay to err on caution's side in heading off incipient escalatory threats--particularly a worldwide logistical "Pearl Harbor."

But suppose that political factors foreclose such an option or that preemption fails to eliminate the full counter-SLOC threat. What then? Unlike the nuclear escalation case, defense of ships in transit is possible and must be a top planning priority. Peacetime planning ordinarily would concentrate on escort, barrier defenses, and routing to maximize survivability. In conjunction with such traditional undertakings, the denial of enemy sensing and targeting aids (including space-based ocean reconnaissance satellites) could be just as important as the direct neutralization of counter-shipping platforms.

In addition to the usual sea control measures, some additional specialized schemes might be pursued to enhance shipping survivability. Arrangements with local powers to allow emergency U.S. basing of attack, interceptor, and antisubmarine air units adjacent to key SLOCs might be worked out in advance; similarly plans could be prepared for seizing or neutralizing key chokepoints in the early days of a conflict. Even if preemption is not allowed, an aggressive and effective prepared option might be well-advertised plans to "bust bases" immediately if they are used as staging points for Soviet forces. (For deterrent purposes, the United States might, at the outbreak of war, specifically delimit

quarantine zones within which the new arrival of enemy forces would trigger prompt neutralization; a general Caribbean quarantine zone would be particularly critical.) Depending on logistic requirements, we might also withhold some transport ships from sailing pending the achievement of a reasonable degree of sea control in important zones.

Of course, in some situations it would be impossible or undesirable to hold back or provide escorts for convoys or individual ships, and barrier defenses might not be producing results fast enough. Thus, it might pay to explore measures for improving the stand-alone survivability of transport shipping. One way of doing this is to employ ships whose speed is sufficient to frustrate some enemy targeting solutions. It is said, for instance, that SL-7s en route to the Gulf would not be escorted for exactly this reason.

However, 30+ knot speed will not alone defeat an aircraft launched or remotely targeted missile threat and there are few "fast" cargo ships in the U.S. fleet. For these reasons, we might consider adding certain self-defense features to selected ships. As the British demonstrated in the recent Falklands fighting, advance provision for emergency "bolt-on" capabilities can pay high dividends. It might, therefore, be advantageous to restart discontinued subsidy program for civilian ships that incorporate certain national defense features and to develop a family of modular bolt-on defense systems (including chaff and flare dispensers, austere acoustic decoys, and perhaps even close-in gun and missile defense systems, such as Phalanx, Goalkeeper, or the Rolling Airframe Missile now in development).

Programs should also be developed to render the loss of individual ships less catastrophic. Though certain inefficiencies would result,

systematic spread loading of cargoes is essential. To ease management problems, the full range of U.S. war materiel, including ammunition, should be made compatible with civilian and military containerization systems. For that matter, centralized computer management can coordinate and streamline the movement of containerized stores on a worldwide basis; field commanders could quite easily be plugged into such an automated control network.

It is not hard to conjure up scenarios in which it pays to proliferate new logistic capability among many platforms, even if that solution is less cost-effective than one in which we buy a few very productive specialized systems. By judicious deployment planning, moreover, such proliferation would reduce response times in crisis and might, therefore, enhance deterrence. Therefore, rather than build a few high-value austere area logistic assets like crane ships (TACS), we might think about distributing lesser cargo handling capability among many ships. And when it comes to such equipment as DeLong piers and modular causeway systems, redundancy and interoperability is vital for attrition compensation and multi-conflict response.

Mining of port areas and chokepoints can be considered an integral part of the horizontal escalatory threat to shipping. An ocean-going minesweeping capability is needed to clear vital straits; rather than diverting MCM ships to convoy support, some modest variant of the ARAPAHO program could allow clusters of transport ships to carry along a helicopter and minesweeping sled. Coastal and shallow water mine countermeasures are necessary too (particularly in the Indian Ocean region), and in forward theaters it is essential that we be able to tend to mineclearing tasks under fire. In addition to the usual mine

countermeasures programs, it is also possible to preplan special convey routes which can be quickly checked for the presence of foreign objects in an emergency.[16] Finally, to prevent sabotage and intelligence reporting on shipping movements and defenses, programs to enhance the military mobilization potential of the Coast Guard and to maintain tight port area security are worthy of some advance effort.

In conclusion, planning to contend with deliberate enemy escalation has not received much attention in U.S. strategic sealift planning. For a variety of reasons, however, we should now consider investing in a few programs to better deal with this possibility. The consequences of nuclear escalation against shipping and the pertinent shore establishment could be catastrophe, but the escalation risks involved in such a step are so grave that this may not be worth much planning effort. Nonetheless, it does seem that some measures exist which could provide a slightly greater degree of fleet resistance to such attacks at the same time that they provide particularly an enhanced capability for the delivery of cargoes to logistically underdeveloped regions.

The possibility that our enemies would deliberately expand fighting to include (or would be more capable in their ability to carry out) conventional attacks against shipping beyond the immediate area of confrontation poses more serious problems. Fortunately, a number of approaches can be followed to enhance SLOC security at all geographic points. True, the political constituency for strategic sealift modernization in general has never been strong, there are many competing priorities among a long list of sealift enhancement options, and there are a number of thorny political and civil-military problems in this

[16] A program to identify such "Q-routes" has been described.

general area. Nonetheless, sealift defense measures seem to be quite a cost-effective investment in many conventional scenarios.

In sum, U.S. sealift capabilities are now in a state of dangerous disrepair; it is clear that transport fleet modernization is a must. Unfortunately, it is now unlikely that our strategic mobility policy (especially as regards sealift) will move very far beyond the current concepts that anticipate either a period of industrial mobilization for a long war or ad hoc emergency measures on the Falklands model. Nonetheless, it may yet be possible to create a political consensus behind efforts to modernize and expand this unglamorous, but absolutely vital, component of our defense posture. In improving our general sealift capabilities, it would, I think, be worthwhile to spend a little extra to build into the mobility posture certain attributes that would enhance the survivability of our bottoms against what is bound to be an increasingly severe conventional threat over time. In other words, the threat of geographic escalation should be, within reasonable bounds, one determinant of our current and future sealift modernization plans.

ACRONYMS

APOD Air Point of Debarkation
ASW Anti-Submarine Warfare
CRAF Civil Reserve Air Fleet
EUSC Effective U.S.-Controlled (fleet)
JCS Joint Chiefs of Staff
LCAC Landing Craft, Air Cushioned
LOTS Logistics Over the Shore
MAC Military Airlift Command
MPS Maritime Prepositioning Ships
NDRF National Defense Reserve Fleet
POMCUS Prepositioned Overseas Materiel
 Configured to Unit Sets
SAC Strategic Air Command
SLOC Sea Line of Communication
SPOD Sea Point of Debarkation
SPOE Sea Point of Embarkation