THE MILITARY SIGNIFICANCE OF RESTRICTIONS ON STRATEGIC NUCLEAR FORCE OPERATIONS

Alan J. Vick, James A. Thomson

April 1984

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A Series in International Security and Arms Control
PREFACE

This Note examines some problems associated with the application of the concept of confidence building to strategic nuclear force operations. Confidence building measures, originally conceived of as primarily political and regional, are increasingly viewed in terms of their military and strategic importance. The authors' analysis was motivated by an interest in whether such measures could be applied to strategic nuclear forces. The Nunn-Warner Group on Nuclear Risk Reduction suggested that Rand examine the question of negotiated restrictions on strategic nuclear force operations.

The Note was written with support from The Ford Foundation. In late 1978 the Foundation provided grants to The Rand Corporation and several university centers for research and training in international security and arms control. At Rand, the grant is supporting a diverse program. In the Rand Graduate Institute, which offers a doctorate in policy analysis, the grant is contributing to student fellowships for dissertation preparation, curriculum development, workshops and tutorials, and a series of visiting lecturers. In Rand's National Security Research Division, the Ford-sponsored projects are designed to extend beyond the immediate needs of government sponsors of research by investigating long-term or emerging problems and by developing and assessing new research methodologies. The grant also is being used to fund the publication of relevant sponsored research that would otherwise not be disseminated to the general public.

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This Note assesses the prospects that negotiated restrictions on strategic nuclear force operations (confidence building measures or CBMs) can reduce the risk of nuclear war. Such measures might accomplish two related goals—(1) reducing ambiguities in strategic force operations, thereby lessening prospects that such operations might be misinterpreted as hostile during a period of tensions; and (2) increasing tactical warning of strategic nuclear attack, thereby reducing strategic force vulnerabilities and pressures for preemption. Such CBMs may reduce ambiguities in peacetime strategic force operations, contributing to crisis stability. However, CBMs have limited usefulness in addressing the vulnerability of certain elements of U.S. and Soviet nuclear forces.

In the first case—restrictions and agreements that increase knowledge—understanding and predictability of opponent training and deployment procedures have some potential as confidence building measures. These measures would contribute to transparency, reducing ambiguities in strategic force operations that might be misinterpreted during peacetime or a crisis as preparations for hostile action. Intercontinental ballistic missile (ICBM) test restrictions and notifications, bomber stand-down and flight notifications, submarine, strategic ballistic nuclear (SSBN) cruise notification, and exercise notification are analyzed here. Although such measures are more encouraging than those directed at the vulnerability of "warning-dependent" nuclear forces, they are still not without problems. For example, notification measures present opportunities for strategic deception not present in a CBM-free environment.

The second case refers to the possibility that CBMs might improve warning of an attack and the survivability of those elements of the nuclear forces that depend on warning. Such agreements would either lengthen the time needed to prepare for an attack or add political weight to judgments made about the import of certain warning indicators. For example, deployment of enemy submarines in a CBM-free environment
might be discounted. If, however, enemy submarines were deployed in violation of a CBM, decisionmakers would take the deployment more seriously.

Confidence building measures may be useful for reducing ambiguities about strategic force operations. They are most productive as an information sharing device. Exchange of data on force operations, observers, and notification measures can contribute to strategic stability and deterrence without the high military costs associated with actual operational restrictions. Unfortunately, operational restrictions offer little hope for improving the survival of systems that are more dependent on warning.

More generally, strategic force operations probably are not the most fertile field for confidence building compared, for example, with theater force operations. If a chief goal of strategic CBMs is to reduce the risk of strategic nuclear war, then the probable context for the initiation of such a war should be considered. A strategic nuclear war is unlikely to erupt out of the blue. It would more probably be a consequence of conventional (and then nuclear) conflict in a theater of military operations. Thus, CBMs aimed at reducing the risk of war--particularly in tense regions--have a better chance of building confidence than those aimed specifically at strategic nuclear war.
ACKNOWLEDGMENTS

The authors wish to thank Rand colleagues Morlie Graubard, Kevin Lewis, and John Van Oudenaren for their helpful criticism and suggestions. In addition, thanks are due Barry Blechman of the Nunn-Warner Group who suggested the topic as part of a broader effort.
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I. INTRODUCTION

A confidence building measure (CBM) is any arms control measure that does not directly reduce, change, or limit force size or structure. They range from agreements on the non-use of force to those constraining the level of peacetime weapon testing or military maneuvers.

The CBMs discussed here deal with the operations of strategic nuclear forces. The broad goal of such measures would be to reduce the chance of strategic nuclear warfare by helping to improve strategic deterrence and crisis stability.

Most discussion of CBMs has concentrated on clarifying the purposes of conventional force activities in central Europe. The Final Act of the 1975 Helsinki Conference on Security and Cooperation in Europe encourages signatory states to give 21 days of notification of ground force maneuvers in Europe of 25,000 or more troops and to invite observers from all signatory states. Most Western observers, however, have been dissatisfied with this CBM, arguing that it lacked military significance; compliance was voluntary, rather than compulsory; and, in any case, verification was difficult.

These concerns have led to several proposals for improved CBMs in the European theater. Most noteworthy are the Western associated measures proposals in the Vienna MBFR negotiations and similar proposals in the Conference on Disarmament in Europe, which is confined to "Confidence and Security Building Measures" in its initial phases. In general, CBMs proposed in these contexts have sought to meet the criterion of "military significance" that was established because of dissatisfaction with Helsinki:

1. Transparency—increase knowledge and understanding about force size, structure and activities. This goal would reduce uncertainties about either (a) current capabilities, thereby lessening possibilities for miscalculation based upon faulty analysis of the other side's capabilities, or (b) force operations in a period of tensions, thereby reducing possibilities for misunderstandings and anxiety.
2. Restraint--impede the ability to use force when it includes direct invasion or simply intimidation.

3. Warning--enhance crisis decisionmaking, increasing the ability either to collect warning indicators or to determine that actions imply warlike intentions. This goal, like the others, is usually pursued by agreements that place barriers on the road to war. These would either lengthen the time needed to prepare for attack or would add political weight to judgments made about the importance of certain warning indicators.

This Note explores the possibilities for extending such concepts for "militarily significant" theater CBMs into the realm of strategic intercontinental nuclear forces. Some precedents include:

- 1963 "Hotline" Agreement
- 1971 Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War Between the United States and Union of Soviet Socialist Republics
- 1972 SALT II notification requirement for multiple ICBM launches
- 1982 President Reagan's proposal for notification of all missile launches.

In addition, the literature contains suggestions for strategic CBMs.\(^1\) Our review of these indicates that the proposals cover many possible objectives, ranging from improved U.S.-Soviet relations to more specific military goals. Although CBMs may serve other objectives, we limit our analysis to measures designed to be militarily significant. Careful attention to the military implications of these measures is essential to ensure that the U.S. ability to deter and, if necessary, prosecute a war is not adversely affected.

This Note analyzes the influence of strategic CBMs on American security interests, assuming that antagonism between the Soviet Union

\(^1\)See, for example, Alton Frye, "Building Confidence Between Adversaries: An American's Perspective," in Karl Birnbaum (ed.), *Confidence Building and East-West Relations*, Austrian Institute for International Affairs, Laxenburg, Austria, 1983.
and United States will remain a basic international fact of life for
any period such a regime would cover.

In the realm of restrictions on the operations of strategic nuclear
forces, we define two goals for militarily significant CBMs:

• To reduce ambiguities in strategic force operations that might
  trigger military actions. This goal is similar to the
  "transparency" goal for theater CBMs.

• To place barriers in the way of enhanced readiness for
  strategic force operations. Such barriers would potentially
  restrain nations from using force readiness as a tool of
  political intimidation or as a step toward pre-emptive nuclear
  attack. Because it is more readily analyzed we have
  concentrated our efforts on reducing the possibilities for pre-  
  emption, mindful that such measures will also reduce
  possibilities for political intimidation. Thus, this goal is
  similar to both the "restraint" and "warning" goals for theater
  CBMs.

The first goal would be addressed by restrictions and agreements
that increase knowledge, understanding, and predictability of opponent
training and deployment procedures. Knowing just what constitutes
"normal" operations goes a long way toward reducing suspicions generated
by ambiguous operations. Although unilateral intelligence collection
and analysis can provide much of this understanding, the exchange of
observers, notification of aircraft and ship movements, and the exchange
of basic data on strategic force operations could increase confidence in
this body of knowledge. Such measures would do more than simply
increase the information flow. They would also help both analysts and
decisionmakers make sense of otherwise perplexing enemy activities.
Nevertheless, there could be problems. "If states focus on and become
too familiar with the 'normal' pattern, they may become increasingly
unable to discern warning indicators which are concealable in the
pattern, and CBM may even be exploited for concealment as more events
become explicable in terms of the complexity of the normal pattern." 2

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2Johan J. Holst, "Confidence Building Measures: A Conceptual
Information needs differ substantially between the Soviet Union and United States because of the closed nature of Soviet society and openness of U.S. society. Furthermore, democracies in general may be more susceptible to the sort of deception mentioned above. Consequently, it will be difficult to negotiate measures that have symmetric effects. Such considerations, as well as the putative benefits, need to be considered in the analysis of potential CBMs aimed at this goal.

The second goal would be addressed by agreements that place barriers on the road to war. In this concept, the agreements would not necessarily add to one's ability to collect warning indicators but would either (1) lengthen the time needed to prepare for an attack or (2) add political weight to judgments made about the significance of certain warning indicators. To explain the latter point: If an agreement must be breached on the road to attack (or more specifically to strategic nuclear attack), then the indicator associated with the agreement breach ought to carry more weight with decisionmakers than if there were no agreement. For example, deployment of SSBNs in a CBM-free world might be explained away for various reasons. Political leaders would take SSBN deployment in violation of a CBM more seriously. That, at least, is the theory. If designed with care, restrictions aimed at this goal could improve the survivability of strategic weapons and command facilities that are currently vulnerable because they depend on tactical warning for their survival. Of course, there are times when increased nervousness is warranted. If CBMs produce a false sense of security when alarm bells should be ringing, they could encourage rather than deter surprise attack.

Improved tactical warning is an intermediate step to the more fundamental goal of deterrence. Because action upon tactical warning can improve survivability, it increases U.S. (and Soviet) ability to employ strategic forces according to their missions, thereby contributing to deterrence. The CBM regime must be designed such that

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3 A related goal is to provide sufficient indication of attack preparation or of a conditional decision by the opponent to strike in enough time to take steps designed to dissuade the aggressor from attacking. For example, if the defending nation responds promptly and vigorously with precautionary actions such as flushing bombers and SSBNs
reasonable and necessary precautionary actions (such as dispersing bombers) are not prohibited; otherwise, the CBM would defeat its own purpose.

The second goal, with its connection to improved tactical warning, underlines one of the chief difficulties with the concept of CBMs for strategic operations. It is most applicable to scenarios that threaten the initiation of strategic warfare "out of the blue." Although guarding against such scenarios is clearly important, few would argue that they should dominate the national security planning agenda. More likely scenarios would feature strategic nuclear warfare erupting out of warfare in a theater of military operations. In such circumstances it is hard to imagine that agreed CBMs on strategic force operations would carry much weight.

In the context of the two broad goals outlined here, operational restrictions could limit deployment, training, or warhead handling or require notification of certain deployments and training. This analysis will consider restrictions falling into three categories:

1. The size, location, and type of deployment (including launches of orbital vehicles) and notification of allowable deployments. Such restrictions would prohibit deployments that would reduce tactical warning and clarify otherwise ambiguous operations.

2. The size, location, and type of training missions (including command exercises) and notification of upcoming allowable training. These restrictions or notification would build confidence by lessening fears that such training constitutes an attack or masks attack preparations.

3. The handling and storage of warheads and their separation from launchers. These restrictions would increase tactical warning by adding a complex, observable step to the list of attack preparations.

and alerting all other forces, the potential attacker might reverse the decision to attack. Such a reversal might be argued for because the defender's actions had reduced the chances for a successful strike.
In the next section we examine the peacetime force structure and operating procedures of the components of American and Soviet strategic nuclear forces—ICBMs, bombers, and SSBNs. In addition, we discuss integrated force operations. The analysis asks whether there are ambiguities in component operations and what effects component operations have on tactical warning. In both cases we consider possible constraints in operations, addressing the following questions:

1. Can operational procedures be constrained without compromising force readiness?
2. If not, when do reductions in readiness threaten deterrence?
   (Initial small reductions in readiness may increase stability by making a surprise attack more difficult. However, radical reductions in readiness would decrease stability by undermining the survivability of the second-strike force.)
II. STRATEGIC FORCE OPERATIONS

ICBMS

U.S. and Soviet ICBMs are housed in hardened underground concrete and steel-reinforced silos and controlled by nearby underground launch control centers (LCCs). In both the United States and Soviet Union, ICBMs can be launched in a short period (on the order of a few minutes) with little visible preparation.\(^1\) It is widely believed that both Soviet and American ICBMs are maintained at a level of readiness in the high ninety percentile.

Preparations for ICBM launches cannot be detected easily by the opponent, except for such blatant behavior as the movement of reload ICBMs next to silos (prohibited by SALT II). Perhaps the broadcast of launch orders would provide tactical warning. Unfortunately, no observable preattack stand-down is necessary. To ensure high reliability, however, the aggressor might conduct a massive and detailed evaluation and maintenance of his force before attacking. If so, there might be various warning indicators, ranging from unusual travel by senior officers in the Strategic Rocket Forces or SAC to maintenance personnel working exceptionally long hours.

BOMBERS

Both American and Soviet strategic bombers are deployed in wing size elements at major operating bases in both countries. The United States deploys one wing of B-52s at Andersen AFB, Guam. Both countries also have identified dispersal bases to increase the survival of bombers during wartime.

The American bomber force maintains a 30 percent alert rate. These aircraft can be airborne six minutes after the pilots receive warning of attack.\(^2\) Supporting elements of the strategic tanker force are on

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\(^1\)Desmond Ball, "Can Nuclear War Be Controlled?" *Adelphi Paper* 

similar alert status. The Soviet alert level is not known, although it is probably lower in keeping with the Soviet propensity to maintain a low readiness profile.

SSBNs

The American strategic submarine fleet operates out of Charleston, South Carolina, and Tacoma, Washington, with forward operating bases in Scotland and Guam. These boats conduct deep water patrols lasting 60 days, followed by 30 days in port. Transit time for the Lafayette boats with C-3 SLBMs can be from one to six days, depending on the port. SSBNs equipped with the longer range Trident I generally enjoy shorter transit times to patrol areas. During normal operations, approximately 50 percent of the force is on patrol.

During normal operations, close to 90 percent of the Soviet SSBN and SSB fleet is in port at Severomorsk on the Kola Peninsula or at Petropavlovsk on the Kamchatka Peninsula. When at sea, SSBNs patrol in the Barents Sea, the Sea of Okhotsk, and off the American coasts.

INTEGRATED FORCE OPERATIONS

Both the American and Soviet Command-Control-Communications-Intelligence (C³I) systems are composed of command posts, communication centers, data processing facilities, and intelligence collection/interpretation facilities. These systems are concerned primarily with monitoring friendly and enemy orders of battle and the more mundane, but equally vital, flow of personnel, equipment, and supplies that keep military facilities functioning. C³I operations refer to the coordination of these facilities for the overall purpose of ensuring the collective capacity of a force to accomplish its objectives.
support the National Command Authorities by providing intelligence on enemy activities and communicating the directives of the NCA to the constituent forces.

The most observable elements of the strategic command and control system are the airborne command posts. In the United States they are the National Emergency Airborne Command Post (NEACP), the aircraft of the Post Attack Command and Communications System (PACCS) and the Take Charge and Move Out (TACAMO) aircraft of the U.S. Navy.

The NEACP fleet consists of four E-4A/B aircraft (converted Boeing 747s). One E-4 is always on ground alert, ready to meet members of the NCA at an appropriate location.

The PACCS is composed of two squadrons of EC-135 aircraft dedicated to several missions. The first mission is to support the Commander-in-Chief SAC's Looking Glass requirement. The remainder of the PACCS fleet are auxiliary command posts, radio-relay aircraft, or airborne launch control aircraft. TACAMO aircraft are converted C-130 transports that connect the National Command Authorities (NCA) with the SSBN fleet by means of VLF communications. One TACAMO aircraft is on patrol over the Pacific and Atlantic at all times. The Soviets appear to deploy similar systems. 7

III. CBMS AND AMBIGUITIES IN FORCE OPERATIONS

AMBIGUITIES IN ICBM OPERATIONS

The consistent high readiness of modern ICBM forces reduces the potential for misunderstanding of ICBM operations. ICBMs are unambiguously ready for war. The chief area for concern is that of testing, because detection of unannounced tests may be mistaken for an attack. Multiple missile tests and tests from operational silos by the Soviets have caused consternation in the United States. In particular, their 1982 test of SS-11s, SS-20s, SLBMs, and ABMs could have been mistaken for an attack.\(^1\) The United States does not test from operational silos.

One promising CBM would follow President Reagan's suggestion that all missile tests be announced beforehand. His proposal would decrease the ambiguity associated with unannounced tests. Another possibility would prohibit all multiple launches. This is attractive because it would increase Soviet uncertainties associated with the coordination of a salvo attack, discouraging such attacks. Prohibition of multiple launches would also reduce the potential for accidental war, because integrated tests (e.g., the 1982 Soviet test) resemble an actual attack profile.

AMBIGUITIES IN BOMBER OPERATIONS

Both the United States and Soviet Union have identified dispersal bases to increase aircraft survival during war, and the Soviets have built Arctic staging areas to make maximum use of the limited striking radius of medium-range bombers. Both nations conduct Arctic training flights. Although use of Arctic bases is not necessarily provocative, such actions in conjunction with a massive stand-down of the bomber force and large scale dispersal might cause concern.

Flight Notification

One CBM for bomber operations would require that all movements of aircraft above some threshold be announced along with major bomber training. No dramatic military costs would result from such measures, which would reduce the potential for misunderstanding without hindering training or readiness.

As with any CBM, however, potential exists for false confidence. The Soviets might announce a major exercise as a cover for a real attack by bombers. Although a first strike led by hundreds of bombers is not considered plausible, smaller attacks might successfully use a major exercise for cover.

Stand-Downs

A large-scale bomber attack might be preceded by an extensive force stand-down for maintenance. Consequently, detection of such actions may be considered strategic warning of attack. To preclude misunderstanding, each nation could agree to notify the other of all aircraft stand-downs affecting more than a certain percentage of the force. Detection of an unnotified stand-down would, of course, have greater weight as a warning indicator. This appears to be a reasonable and useful CBM.

Ambiguities in SSBN Operations

Forward deployment of submarines can produce misunderstanding over the possible uses of these boats. Both nations have reason to fear such deployments; during a crisis, these deployments would increase the incentives for preemption. Any forward deployment of SSBNs is ambiguous to some degree.

Notification of deployments might help reduce concern about such operations, although they might produce false confidence. A few SSBNs can do great damage, so notification becomes less appealing because any deployment is threatening. It might increase confidence that a massive attack was not planned but would offer little insurance against small attacks.
AMBIGUITIES IN INTEGRATED FORCE OPERATIONS

Any combined force operation supported by unusual NCA activities might produce anxiety in the other nation. In particular, staffing at higher than routine levels of airborne or land-based command posts, unusual radio traffic, or unexplained absences of key members of the NCA all might be misconstrued as warning of attack.

Any of these events are cause for concern, particularly if associated with force deployment changes. However, they do not appear individually to be amenable to CBMs. And, given concern for communications security, it seems unlikely that either side would be willing to notify the other of command post exercises. Because they can be hidden, this may be a justifiable security concern. Large scale field exercises cannot be hidden, and communications associated with these observable events are going to receive considerable scrutiny even without notification. Notification of integrated force exercises that included a field component is therefore a fruitful area for CBMs. Such notification might reduce concerns about these activities, and the military cost appears small. Indeed, President Reagan proposed such notification. Additionally, a channel for the clarification of ambiguous C^3 activities, perhaps below the Presidential level, might be useful in reducing the chances for misunderstanding.

PROSPECTS FOR REDUCING AMBIGUITIES

Ambiguities in force operations appear most amenable to confidence building because they generally can be clarified through simple notification measures. Indeed, some measures (e.g., test notifications and bomber stand-downs) are so straightforward that one might ask why they are not unilaterally observed. Of course, neither country may be particularly concerned about such operations, each trusting its national intelligence services to distinguish between threatening and routine operations, and these seemingly innocuous measures may be of little military significance.
IV. CBMS AND TACTICAL WARNING

This section discusses the warning dependence of some strategic force components, the threats posed by specified weapon systems, and potential measures to increase the survival of warning-dependent systems. For each system we ask: Does this weapon pose a special threat (one not posed by any other element of the triad) to some component of the opponent's strategic forces? If not, does it pose any threat to warning-dependent systems?

FORCE VULNERABILITIES

Increasing tactical warning of attack can reduce the vulnerability of bombers and, perhaps, the NCA to surprise attack.

Both U.S. and Soviet silo-based ICBMs can be destroyed only by a coordinated, massive attack using high-yield, high-accuracy weapons. While the Soviet Union already possesses sufficient numbers of such weapons to theoretically be able to destroy a large portion of our ICBMs in a pre-emptive attack, the U.S. is not projected to have a comparable capability until the early 1990s. Nevertheless, both countries are already seeking solutions to this vulnerability. For example, ICBMs may be deployed on mobile vehicles. Such vehicles would depend mainly on location uncertainty for survival. Tactical warning might be used to increase the area of uncertainty beyond the barrage abilities of the attacker. If this tactic were chosen, the survivability of land-based ICBMs would be tied to timely tactical warning.

SSBNs at sea are currently invulnerable to attack by strategic nuclear forces, and in-port submarines are not maintained on high alert.\(^1\) Neither the survival of the patrolling submarines nor the

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\(^1\)If we stretch our definition of strategic force operations to include Antisubmarine Warfare (ASW) directed at SSBNs, then the restrictions on ASW operations might be appropriately included. We decided that because considerable work has already addressed the issue of ASW restraints, we will not discuss such restraints except where they complement measures restricting strategic force operations per se. For more on ASW restrictions, see Richard Garwin, "Antisubmarine Warfare and National Security," *Scientific American*, July 1972.
destruction of in-port submarines is a function of tactical warning (although in-port submarines could be flushed to sea upon strategic warning).

Both the United States and the Soviet Union maintain a portion of their strategic bomber forces on alert. These aircraft depend on tactical warning for survival. The remainder of the force depends on strategic warning to disperse and increase alert rates. Optimally located forward-deployed submarines executing an intricate, highly coordinated barrage attack on bomber bases\(^2\) may be able to destroy the alert bombers also. This potential is a function of the shortened flight time of a submarine-launched ballistic missile (SLBM) launched from coastal waters. In some cases, particularly for American bombers, this flight time may be as low as six minutes. Alert bombers crews need approximately this much time to take off. All bombers may therefore be vulnerable in such a first strike.

Both the United States and the Soviet Union deploy airborne command posts for control of their strategic nuclear forces. In the United States, one such aircraft is airborne at all times so the command and control of at least one retaliatory strike may not be dependent on tactical warning. Other elements of the PACCS are on ground alert and would be threatened by any attack equivalent to the attack on bomber forces discussed above.\(^3\) The NEACP (upon tactical warning of ICBM attack) might be able to escape with the President and a few advisors on board. They could not escape an attack by forward-deployed SSBNs. Rather, survival of the NCA is based upon strategic warning.

\(^2\)In the United States, this number is quite small. There are 23 primary bomber bases and 70 dispersal bases. A small number of forward-deployed SSBN could launch sufficient warheads to destroy these targets. See Alton Quanbeck and Archie L. Wood, \textit{Modernizing the Strategic Bomber Force: Why and How}, The Brookings Institution, Washington, D.C., 1976, p. 24.

\(^3\)Ball, 1981, p. 16.
ICBMS AND TACTICAL WARNING

The high level of readiness of ICBM forces does not pose a special threat to most components of strategic forces during non-crisis operations. These components are either always vulnerable (fixed C^3 assets and U.S. ICBMs),^4 would require lengthy tactical or strategic warning to escape (non-alert bombers, in-port SSBNs, and the NCA), or are not vulnerable at all (alert bombers and patrolling SSBNs). The ICBM forces pose a special threat to hard targets but do not threaten warning-dependent systems any differently than do other elements of the triad. Yet they do pose a threat. We might therefore ask if any CBMs can reduce this vulnerability to ICBM attack, knowing that we would also have to address vulnerability to SSBN attack.

ICBM warheads could be stored separately from launchers, which would certainly make a first strike with ICBMs difficult. Perhaps even a few hours would be required to prepare for attack. Warhead separation would fulfill one goal of operational CBMs—-to reduce readiness and increase tactical and strategic warning of attack.

On-site inspection would probably be required to ensure that warheads were not surreptitiously remounted. Reliance solely on National Technical Means (NTM) of verification and other intelligence sources would entail high risks. If the opponent detected each step in attack preparation and responded in kind, the day of attack would find one attacker at 100 percent readiness and one "victim" at 100 percent readiness. An attack under these conditions would not be prudent. However, some of the attacker’s preparations would probably go undetected or not be recognized as such. Even if hourly updates on the attacker’s readiness were available, it is not clear that they would be viewed as unambiguous evidence of aggressive intent. Political pressures to avoid provocative behavior, including increasing alert rates, might limit the victim’s responses.

The separation of warheads from launch vehicles would make ICBMs indirectly vulnerable to a first strike by SLEMs or bombers (if warhead mounting is extremely time-consuming). If SLEM or bomber strikes

^4We assume that the purpose of strategic CBMs is not to improve launch on warning potential.
destroyed warhead warehouses, the launchers would be useless. Also, theoads to the silos might be made impassable by cratering or transport
vehicles destroyed. Indeed, ICBMs might become more vulnerable through
such restrictions. Yet if SLBMs, ICBM, and bomber warheads were
separated under a verifiable agreement, concern over first strikes would
be dramatically lessened.

In sum, warhead separation for ICBMs looks like a bad idea.

BOMBER OPERATIONS AND TACTICAL WARNING

Current bomber operations pose no threat to warning-dependent
systems. Deployment of stealth bombers may change this. It may be
instructive to consider CBMs to increase warning of bomber attack.

The separation of warheads from bombers is an option that would
make a first strike more difficult, adding a potentially observable step
in war preparations. Yet, as a percentage of bomber flight time,
warhead separation would make only a trivial addition to tactical
warning. In any case, few analysts are concerned about a bomber first
strike.

Such restrictions would hinder the use of strategic bombers in the
pursuit of broad American foreign policy interests. In many cases since
1948, the United States has relied on "nuclear" bombers to make implicit
threats and support conventional operations (an airborne equivalent to
carrier task force "show the flag" missions). If the Soviets or their
clients knew that American nuclear warheads were separated from the
bombers, per a formal treaty, one of two negative results would obtain.
In the first place, a demonstration fly-by of a B-52 known to be unarmed
(or at least lacking nuclear weapons) would be an empty gesture. In the
second place, arming B-52 aircraft with nuclear weapons, in violation of
a treaty, would be a highly provocative move, guaranteed to generate
much criticism at home and abroad.

SSBN OPERATIONS AND TACTICAL WARNING

Soviet SSBNs forward deployed to within 2,000 km of the American
cost might attack several SAC bases, destroying the alert force on the
ground or within seconds of takeoff (by means of an area barrage by
airbursts). Why is this the case? During normal peacetime operations
the SAC B-52 alert forces, 30 percent of the bomber fleet, require six minutes of warning for the crews to run from their shelters, board the aircraft, and take off.⁵ Optimally located forward-deployed SSBNs can put weapons onto targets in less than six minutes. A Soviet SLBM launched 2,000 km away from an airfield will detonate just as the alert force takes off. Airbursts in the vicinity would disable or destroy some of the aircraft that managed to escape.

An SLBM need not actually arrive this quickly because the six-minute figure did not include detection and the associated communication of the launch warning. In fact, the early warning satellites in geostationary orbits must detect the launch, then relay this information through ground stations to the SAC alert system and a decision would have to be made by CINCSAC or the NCA to flush the bombers.⁶ Such a decision does not carry the weight of, say, a Presidential decision to launch the ICBM force on warning of attack because bombers will return to base if they do not subsequently receive an authorized attack order. Although the decision to flush bombers is precautionary and doesn't imply nuclear war, it still would take some time for the decision process to be completed. One doesn’t launch bombers casually. It might even take several minutes for this entire detection-communication-decision-communication sequence to be completed. If so, any SSBN within 10 minutes flight time threatens air bases. Indeed, one SSBN (equipped with 16 SS-N-18s each) 1,000 km off each coast would together be able to attack every air base in the United States with less than 10 minutes warning.⁷ In other words, two Delta-class submarines equipped with SS-N-18s (mod 3 warheads) could attack an entire leg of the triad.

Additionally, forward deployed SSBNs threaten the American NCA with surprise destruction because there is no way to evacuate key members upon warning of an attack. Even if helicopters were kept on ground alert at Andrews AFB, it would require 16 minutes to make a round trip to the White House and this does not include loading time or the takeoff run for NEACP.⁸ During a crisis, helicopters could be kept on alert at

⁵Polmar, 1979, p. 55.
the Pentagon, White House, etc., reducing flight time to 8 minutes. With loading and warning sequences factored in, evacuation could occur some ten to twenty minutes after the launch—fatally late.

American SSBNs forward-deployed in the Mediterranean, Laptev, Barents, and Kara Seas, and the Sea of Japan could launch a similar attack on the Soviet Union. Although Soviet geography would force the United States to use more SSBNs, their NCA and bomber forces appear as vulnerable as ours.

Cruise Restrictions

One approach in addressing these vulnerabilities would restrict the number of SSBNs allowed to leave port and would require notification of such cruises. The advantage would be twofold: restricting the number of boats at sea limits targetable reentry vehicles (RVs); and the reduced number, combined with notification of cruises, would make the opposition’s ASW task easier, lessening concerns about unaccounted-for SSBNs. A first strike against the NCA and bombers alone is unlikely. It is more probable that other targets—launch control facilities, ICBM silos, military installations, the entire gamut of $C^3$ assets, nuclear weapons facilities, railroad yards, and ports—would come under ICBM and SLBM attack. If so, it would be necessary to deploy a fair number of boats and flush the remainder out of the highly vulnerable docking facilities, which would undoubtedly come under ICBM and SLBM attack within minutes of the first strike.

Without a CBM restricting deployments, the flushing of an SSBN force could always be explained as an exercise. The CBM prohibiting such activities adds tremendous political weight to any warning that deployment is indeed occurring.

Although these advantages do recommend cruise limitations, several problems arise. The first relates to SSBN survival. Reducing the number of SSBNs at sea places both cruising and in-port submarines at greater risk. The fewer SSBNs at sea, the easier they are to track.

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9To attack most Soviet airbases with under 10 minutes warning would require forward deployment of submarines in the Mediterranean, Norwegian (or Barents), Kara (or Laptev), Japanese, and Bering Seas.
Consequently, they are more vulnerable to attack by ASW forces. The advantage to one side is a liability to the other. SSBNs in port are vulnerable to SLBM or ICBM attacks.

The second problem relates to the effectiveness of cruise limitations in preventing, discouraging, or, at the least, mitigating the consequences of a strike against time-urgent targets such as the NCA and alert bombers. Although each nation has confidence in its ability to detect rapid and total deployment of enemy SSBNs, there is no similar confidence in its ability to guarantee that no single enemy SSBN escaped the ASW net. Leakage, so troublesome in all defenses against nuclear forces, cannot be escaped. If one SSBN gets through undetected, it can take out the opposition's NCA and many bomber bases. The Soviets, for example, might count on the confusion surrounding NCA decapitation to delay retaliation for the 30 minutes it would take for their ICBMs to arrive and destroy land based missiles and the remainder of fixed C³ assets. In such a case, the victim would have little residual nuclear capability left. Although such a scenario presents nightmarish uncertainties and dangers for the Soviet Union, it does illustrate the sensitivity of the CBM to intelligence.

An American submarine in the Norwegian Sea, Baltic, or Mediterranean could also decapitate the Soviet NCA in Moscow and destroy in-port submarines on the Kola Peninsula and many bomber bases. Another American SSBN in the Sea of Japan could take out many more bomber bases, air defense sites, and Soviet SSBNs at Petropavlovsk. The American SSBNs, however, could not reach interior bomber bases, although their greater number of MIRVs would allow them to attack more targets in general than Soviet SSBNs. The current American lack of silo-busting ICBMs, furthermore, would allow more Soviet ICBMs to survive a full first strike than American ICBMs under a Soviet attack on the United States.

American planners are likely to object to cruise restrictions for the very same reason they express concern about surprise NCA decapitation and bomber survivability. They wish to ensure that American forces and command structure can survive any surprise attack. Cruise restrictions might gain them increased NCA and bomber survivability (viewed narrowly from one attack scenario), but they would
do so at the cost of increasing SSBN vulnerability to a surprise attack, whether by ASW at sea or nuclear weapons destroying in-port submarines. One kind of vulnerability would be added with no guarantee that the motivating vulnerability had been removed. Additionally, a certain amount of flexibility, military freedom, and operational secrecy would be given up.

Soviet planners should readily agree to in-port restrictions, viewing it as an opportunity to constrain American operational freedom while giving little in return. After all, the Soviets currently restrict 90 percent of their SSBN force to port. Soviet planners place great confidence in their ability to recognize the political and military events portending war. They would use a period of increasing tensions to prepare their forces for war. Under current conditions, American forward-deployed SSBNs do not cause great concern. If war appeared imminent, the Soviets would respond to such deployments with appropriate countermeasures (e.g., evacuation of the NCA, dispersal of bombers, and, ultimately, preemptive attack) in an environment in which all CBMs would probably be by the board.

Cruise restrictions are most useful in preventing surprise attack. The Soviet lack of concern over total surprise attack suggests that they would have little interest in giving up secrecy of operations and military freedom for unclear gain. Although cruise restrictions could address the vulnerability of the NCA and airlift bombers to surprise attack, the costs associated with them are prohibitive.

An additional problem with in-port restrictions derives from the greater range of current Soviet SLBMs. The 292 SS-N-8, 208 SS-N-18, and 20 SS-NX-20 can all reach the entire United States from current ports. A cruise restriction might hamper Soviet forward deployment, but it would not prevent use of SSBNs in a first strike. The vulnerability of in-port submarines to immediate retaliation argues against such use, but the option remains. To the extent Soviet in-port submarines were manned, they could launch on warning if the United States attacked first.

In contrast, Lafayette-class SSBNs at Charleston, S.C., cannot strike at any Soviet targets; and Ohio-class SSBNs at Tacoma, Washington, can strike only targets in Siberia. The American forward
operating base at Holy Loch, Scotland, would probably have been closed by such an agreement because it is within the 3,000 km forward deployment zone. There is little point in restricting cruises if one country is allowed to base submarines within the surprise attack zone. The American SSBN port at Guam would allow Lafayette-class SSBNs to strike Vladivostok and other Soviet targets along the Sea of Japan. Ohio-class SSBNs could strike most of the Soviet Union east of the Urals. Because in-port restrictions would be difficult to verify if the number of ports was too great or the access to deep water too easy, current continental ports would probably be selected. In this case, the United States would be capable of little in-port action, and the Soviets could fight a war from port.

Keep-In Zones

An alternative way to hamper forward deployment of SSBNs would require that a body or a few bodies of water be designated as SSBN sanctuaries\textsuperscript{16} and keep-in zones. SSBNs would be required to be either in-port, in-transit to a keep-in zone, or in the keep-in zones. In some cases, the port might be adjacent to a keep-in zone, requiring no transit time (and simplifying verification).

Each country would possess its own zone or zones, preferably in waters protected by its air and sea power. Opposition ASW would, in any case, be prohibited from operating in this zone. The zone would be protected by passive and active ASW arrays on the ocean floor, friendly attack submarines, ASW ships, helicopters, and fixed wing aircraft. The SSBNs would patrol freely and randomly within this zone.

In addition to the friendly ASW ring, the other nation might want to operate an outer ASW ring to ensure that the SSBNs stay in the keep-in zone and do not forward deploy. Thus, the SSBNs are protected from opposition ASW and the opposition NCA and bombers are protected from the SSBNs.

Possible keep-in zones for the Soviets include the Okhotsk, Siberian, Laptev, Kara, Barents, Black, and Caspian Seas. As Table 1 illustrates, the Black and Caspian can be ruled out because of range

\textsuperscript{16} Sanctuaries have been discussed in the literature on many occasions. See, for example, Garwin, 1972; and Joel Wit, "Sanctuaries and Security," Arms Control Today, October 1980.
Table 1
POSSIBLE SOVIET SANCTUARIES

<table>
<thead>
<tr>
<th>Sanctuary</th>
<th>SS-N-6&lt;sup&gt;a&lt;/sup&gt;</th>
<th>SS-N-8&lt;sup&gt;b&lt;/sup&gt;</th>
<th>SS-N-18&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea of Okhotsk</td>
<td>Alaska</td>
<td>All</td>
<td>Most</td>
</tr>
<tr>
<td>East Siberian Sea</td>
<td>Alaska</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Laptev Sea</td>
<td>Alaska (most)</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Kara Sea</td>
<td>None</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Barents Sea</td>
<td>None</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Black Sea</td>
<td>None</td>
<td>Northeast U.S.</td>
<td>Northeast U.S.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(including D.C.)</td>
<td>(including D.C.)</td>
</tr>
<tr>
<td>Caspian</td>
<td>None</td>
<td>Upper Northeast</td>
<td>New England</td>
</tr>
<tr>
<td>Number of SLBMs</td>
<td>400</td>
<td>292</td>
<td>208</td>
</tr>
</tbody>
</table>


<sup>a</sup> 2,400-3,000 km range.
<sup>b</sup> 7,800-9,100 km range.
<sup>c</sup> 6,500-8,300 km range.

limitations. Any of the Arctic Seas or the Sea of Okhotsk would be suitable for submarines carrying SS-N-8, SS-N-18, and SS-NX-20 SLBMs. The remainder of the Soviet fleet could be considered a reserve for deployment during war or as submarine-based theater weapons for use against China and NATO.

Okhotsk is particularly attractive as a zone because of its natural choke points. Furthermore, the Soviets already possess a submarine base nearby at Petropavlovsk, air bases on Sakhalin Island, and ground forces in the Kuril Islands. The Barents/White Sea is also attractive as a combined sanctuary. There are massive ground, naval, and air forces on the Kola Peninsula and a submarine base at Severomorsk. Nearby facilities, local superiority, choke points (less so in the Barents), and size all recommend these two zones. This study will use these two
zones as reference points. The actual choice of zones would require a major study, incorporating consideration of ocean topography, the effects of nuclear explosions in the particular zones (particularly underwater explosions), difficulty of enclosing an ASW screen, and other issues.

Possible keep-in zones for the United States include the Beaufort and Labrador Seas, Baffin and Hudson Bays, Gulfs of Mexico and California, and the Great Lakes (see Table 2). Range limitations rule out all but the Beaufort Sea and Baffin Bay. Baffin is superior to Beaufort because of better choke points and because the C-3 SLBM can strike more important targets in European Russia from this zone than the Arctic wastelands it would reach from Beaufort. C-4 SLBM can strike all targets in the Soviet Union from both zones.

Table 2
POSSIBLE U.S. SANCTUARIES

<table>
<thead>
<tr>
<th>Sanctuary</th>
<th>Poseidon C-3&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Trident C-4&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaufort Sea</td>
<td>Northern S.U.</td>
<td>All</td>
</tr>
<tr>
<td>Baffin Bay</td>
<td>European Russia&lt;sup&gt;c&lt;/sup&gt;</td>
<td>All</td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>None</td>
<td>Most</td>
</tr>
<tr>
<td>Labrador Sea</td>
<td>European Russia&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Most</td>
</tr>
<tr>
<td>Gulf of Lawrence</td>
<td>None</td>
<td>Northern S.U.&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Great Lakes</td>
<td>None</td>
<td>Northern S.U.</td>
</tr>
<tr>
<td>Gulf of Mexico</td>
<td>None</td>
<td>Northeast Siberia</td>
</tr>
<tr>
<td>Gulf of California</td>
<td>None</td>
<td>Northeast Siberia</td>
</tr>
<tr>
<td>Number of SLBMs</td>
<td>304</td>
<td>216</td>
</tr>
</tbody>
</table>


<sup>a</sup>4600 km range.
<sup>b</sup>7400 km range.
<sup>c</sup>Including Moscow.
To determine the utility of such control zones, we need to address the following questions:

1. Can the zone provide an increase in SSBN survivability greater than other options?
2. Can the zone reduce the probability of leakage that plagued the first proposal?

To answer the first question we will consider three threats to SSBN survival.

1. *Covert Insertion of Sensors into the Sanctuary.* This problem is particularly acute for sanctuaries bordering potentially hostile territory or neutral territory that might be penetrated by special teams.\(^{11}\) Examples of problem areas for the Soviet Union include the Okhotsk Sea (shared by the Japanese) and the Barents Sea (shared by Norway). American SSBNs using Baffin Bay would be surrounded by friendly Greenland and Canada, but the lack of inhabitants or major armed forces suggest that landing teams could probably penetrate. Insertion of sensors might occur by boat, aircraft, or submersible, or from shore. Obviously, special security arrangements would be required.

2. *Eavesdropping by ASW Assets Outside of the Zone.* This problem stems from the need for two ASW lines. The outer array might go beyond ensuring that SSBNs do not escape, actually tracking the movements of some SSBNs in the zone. One report suggests that current American sound surveillance (SOSUS) arrays near Norway's Bear Island can cover much of the Barents Sea.\(^{12}\) Another report contains a map showing SOSUS arrays off the east coast of the United States and west coast of Spain, providing coverage for the entire North Atlantic,\(^{13}\) suggesting that the

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\(^{11}\) This latter possibility should not be discounted. The Soviets appear already to have used such teams against the U.S. ASW system. A 1982 *Los Angeles Times* article reported that U.S. Navy officials believe a Soviet commando team landed by submarine on Iceland that year and cut a cable leading from a U.S. underwater acoustic array to a processing center. See Patrick Sloyan, "Submarines May Lose Cloak of Darkness," *Los Angeles Times*, May 28, 1982.


range of a single line may be as high as 3,000 km. If true, then no zone can provide reliable protection for SSBNs. A zone capable of frustrating long-range detection would be ridiculously large, presenting an unmanageable ASW task for friendly forces. It is reasonable to expect each side to expend efforts to increase this eavesdropping potential, given the attractive intelligence that might be gained.

3. Focused ASW/New Technology. A zone would allow the opposition to focus ASW resources (which previously collected data from and observed tens of millions of square miles of ocean) on a fairly small body of water. That isn't to say that worldwide tactical ASW efforts would cease, but the considerable assets devoted to tracking SSBNs could enjoy the products of concentrated efforts. The potent combination of recent advances in sensor technology and very high speed data processing with a detailed data set from a more discrete area could very well yield new understanding of how submarines disturb their environments. Relationships that were not apparent through theory or experience on the open seas might be discovered in this way. Advances in sensor technology may permit detection of submarine wakes, chemical discharges, or acoustic disturbances at long ranges. Blue/Green lasers might make the ocean transparent to satellite observation, allowing real-time tracking. At the least, concentrated observation and analysis is likely to lead to some reduction in location uncertainty, perhaps to the point that SSBNs could be destroyed.

Any of these possibilities might yield sufficient data to justify a barrage attack on the area of suspected activity. Although the zone was selected because its size would make a barrage attack costly, reductions in location uncertainty might make such an attack feasible.

Destruction of SSBNs by ICBM or SLEBM warheads is not a trivial task. Warheads have to be designed specifically for water penetration and must detonate at a great enough depth to prevent the fireball from breaching the surface. A warhead reentering at the low velocity required to penetrate water would be, in effect, an aerodynamic vehicle and susceptible to winds, rain, and hail. It could not therefore possess great accuracy. Because many such warheads would be required for a barrage attack and would have limited value in other applications,
the ICBM or SLBM force will suffer a considerable reduction in flexibility. Nevertheless, the dedication of many launchers to this task might be cost effective in certain circumstances. Certainly, the use of such zones would channel R&D in this direction.

Finally, we need to determine whether such zones can reduce the potential for surreptitiously forward-deploying SSBNs. Current ASW abilities can guarantee that no massive escape of the SSBN force is likely. Such zones can therefore provide great confidence that the opponent's SSBN force cannot forward-deploy many boats unobserved. Unfortunately, such confidence cannot be held at low leakage levels. No current ASW system can guarantee against a few boats escaping unobserved. Because bomber and NCA survivability are highly sensitive to the leakage of even one boat, the prospects for such zones are not encouraging.

Keep-Out Zones

A final proposal to consider is the keep-out zone, which would prohibit operations in certain provocative areas but otherwise would allow deployment at any level. SSBNs may patrol in any of the world's oceans. For our purposes, the keep-out zone would prohibit SSBNs off both nations' coasts. The sole purpose of such a zone is to hinder surprise attacks against time-urgent targets. It in no way restricts ASW operations and does not pretend to increase SSBN survivability.

The United States is certainly capable of building an elaborate detection system off its coasts to police such a zone. It reportedly already can track submarines throughout the North Atlantic.\(^\text{14}\) Enforcement of a keep-out zone, however, would require more thorough coverage—the use of many attack submarines, ASW ships, helicopters, and long-range fixed wing aircraft such as the P-3 Orion. Most of our current ASW assets would have to be devoted to the patrol of this zone. Many false targets (e.g., whales) would have to be investigated.

We could be no more confident that a few SSBN would not slip into the keep-out zone than we were in the keep-in zone. Furthermore, an important geopolitical asymmetry exists. The Soviet Union could agree to a keep-out zone without seriously undermining its relationship with

\(^{14}\) Friedman, 1980.
key allies. In contrast, a U.S. agreement to respect a 2,000-3,000 km zone around the Soviet Union would necessitate removal from European waters of SSBNs dedicated to NATO. The NATO allies would not view such a move with favor. It could reduce the credibility of the American nuclear guarantee for Europe.

PROSPECTS FOR INCREASING TACTICAL WARNING

Confidence building measures simply are not powerful enough tools to shoulder a burden as great as ensuring the survival of nuclear forces. If the United States must deploy weapons systems that depend in some way on tactical warning for survival, then other means will be necessary to improve the timeliness and accuracy of such warning.
V. CONCLUDING REMARKS

Confidence building measures may be useful tools for reducing ambiguities about strategic force operations. They are most productive as an information sharing device. Exchange of data on force operations, exchange of observers, and notification measures may contribute to strategic stability and deterrence without the high military costs associated with actual operational restrictions.

There may be a fundamental inconsistency between current Western deterrence doctrine and the commonly accepted notion of strategic confidence building. The NATO extended deterrence concept—the link between the American strategic umbrella and Europe—as codified in the NATO strategy of flexible response is predicated on maintaining uncertainty in the mind of Soviet leaders about the possibility that a NATO conventional war could escalate to strategic nuclear war. To the extent that the United States takes steps—unilaterally or bilaterally with the USSR—designed to reassure the Soviets that crisis or conflict need not escalate, it may undermine its own deterrence concept. But in essence this is what strategic confidence building measures would seek to do.

Advocates of information exchanges imply that current national intelligence services are, in some way, failing their respective national leaderships. For example, notification measures are needed only if the intelligence services are going to get all worked up over isolated indicators (e.g., detection of a missile test or forward-deployed submarine) and might subsequently raise alarms. Such alarms, some argue, would result in NCA actions that would set in motion an uncontrollable train of events that would inevitably lead to war.

It seems more plausible that the intelligence services will look for corroborating evidence. If none exists, the intelligence community will be no more or less excited about the indicator than if it was notified. If, however, indicators across the entire spectrum of military operations indicate an attack, careful scrutiny and precautionary measures will be argued for, regardless of the existence
of notification. It is not clear that notification does any good. Innocuous cases would be recognized as such without notification and fears produced by more worrisome acts would not be mitigated by it. Indeed, if notification worked as a CBM, consistently lessening enemy fears of attack, it would encourage attack by contributing to strategic deception. The aggressor would simply use notification as a smokescreen to confuse the victim, then attack.

Unfortunately, operational restraints offer little hope for NCA and bomber survival. None offer much of an increase in the tactical warning these components depend on. Unilateral measures may be the only means to address these deficiencies. Randomly moving alert bombers, decreasing the time elapsed between detection of launch and pilot alert, hardened bombers, and improved ASW would all contribute to bomber survival. One might declare a unilateral keep-out zone wherein our attack submarines would follow and, perhaps, harass Soviet SSBNs, attempting to convince them that their boats would not survive in this zone during a war.¹ NCA survival might be improved by requiring that one member of the NCA always be on NEACP outside of Washington, D.C. Although inconvenient, it may be the only means to ensure the survival of at least one of these individuals.

Furthermore, in a geopolitical environment characterized largely by confrontation and competition, CBMs may undermine Western resolve to counter Soviet expansion without reducing Soviet incentives to exploit opportunities for political or military advances.

False confidence may be produced by such agreements. Confidence building is a psychological process that works on the perceptions of national bodies politic and leaders. Dangers arise if confidence is built as a result of an agreed regime of CBMs; but in fact, that has no real effect on security. First, a long-term relaxation not warranted by the balance of forces might lead to decreased political support for defense efforts. This problem is of much greater consequence to Western nations than to the Soviet Union and her allies. Second, fears by leaders that the array of measures will impede military actions in a crisis and provide the necessary warning when in fact it cannot do this will result in delayed actions and self-restraint. Rather than avoid

¹See Winnefeld and Builder, 1971.
war in a time of tensions, such otherwise commendable restraint may give the aggressor a considerable advantage. Because the Soviet Union places strategic deception high on its list of preattack goals, such concerns are not trivial. Such asymmetries suggest that the United States and Soviet Union would enter negotiations with distinct and, perhaps, incompatible incentives. In these conditions, negotiations are unlikely to produce robust CBMs of military value.

Additionally, unilateral measures have already substantially reduced the potential for accidental war. To the extent that entering negotiations is seen as a public admission of the fragility of current policies, CBM negotiations may actually undermine rather than build confidence.

More generally, strategic force operations probably are not the most fertile field for confidence building compared, for example, with theater force operations. If a chief goal of strategic CBMs is to reduce the risk of strategic nuclear war, then the likely context for the initiation of such a war should be considered. Few would argue that a strategic nuclear war would erupt out of the blue. It would more probably be initiated as a consequence of conventional (and then nuclear) conflict in a theater of military operations, and such a conflict would grow out of a grave political crisis. CBMs aimed more generally at reducing the risk of war have a better chance of building confidence than those aimed specifically at strategic nuclear war. Theater CBMs are therefore probably a more fertile field than strategic CBMs.