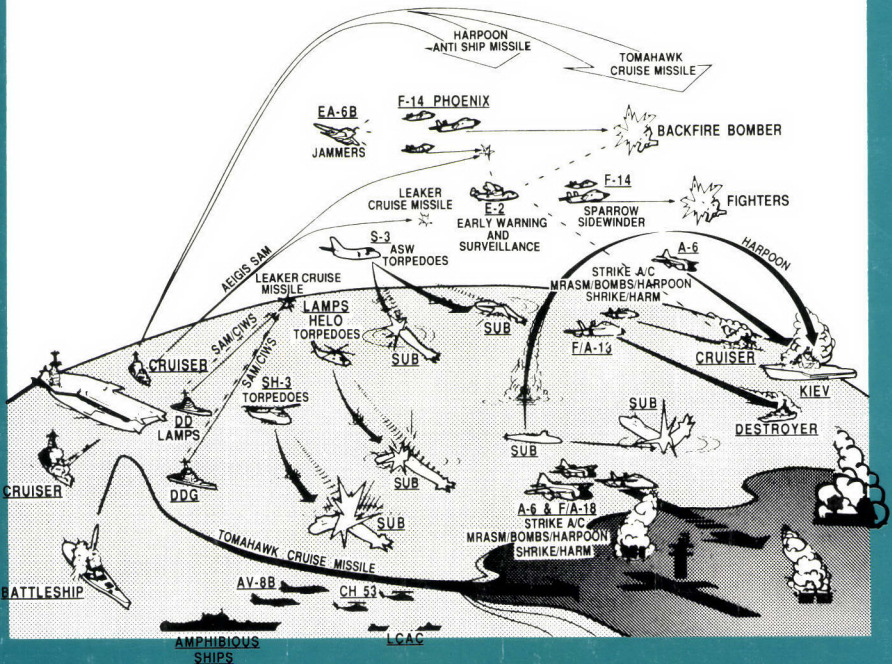




# Provocative Plans:

## A Critique of US Strategy for Maritime Conflict in the North Pacific



Desmond Ball





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PROVOCATIVE PLANS:  
A CRITIQUE OF US STRATEGY FOR  
MARITIME CONFLICT IN THE  
NORTH PACIFIC

Desmond Ball

Strategic and Defence Studies Centre  
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## ABSTRACT

US strategy for the conduct of maritime operations in the Pacific in the event of a conflict with the Soviet Union is fundamentally and purposefully offensive. US forces would mobilise and move towards Soviet home waters during periods of crisis and confrontation, and would move rapidly and directly to attack a wide range of Soviet submarine, surface and air forces, and supporting bases and facilities, at the very outset of a conflict.

This monograph is concerned with some of the more critical *operational* aspects of the US strategy for offensive forward operations in the event of maritime conflict in the north Pacific. It discusses the basic rationales for this strategy; the role of the principal submarine, surface and air elements of the US posture; the relevant Soviet *operational* concepts and force posture; the strong escalatory pressures that derive from the interaction of the US and Soviet operational concepts and postures; some possible implications of a START agreement; and some particular subjects which warrant further consideration from the perspective of enhancing strategic stability.





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## ACRONYMS AND ABBREVIATIONS

AGI	Auxiliary General Intelligence
ASAT	Anti-Satellite
ASW	Anti-submarine Warfare
AV-MF	Soviet Naval Aviation
C3I	Command, Control, Communications and Intelligence
CINCPAC	Commander-in-Chief Pacific
CLS	Capsule Launch System
CNO	Chief of Naval Operations
COMINT	Communications Intelligence
CONUS	Continental United States
CVBG	Carrier Battle Group
DA	Long Range Aviation (Soviet)
DF	Direction Finding
DIA	Defense Intelligence Agency
ECM	Electronic Countermeasures
ELINT	Electronic Intelligence
EMCON	Emission Control
EOB	Electronic Order of Battle
EORSAT	Electronic Ocean Reconnaissance Satellite
ESM	Electronic Support Measures
EW	Electronic Warfare
FBM	Fleet Ballistic Missile
GAO	General Accounting Office of the US Congress
GRU	Glavnoye Razvedyvatelnoye Upravleniye (Chief Intelligence Directorate of the Soviet General Staff)
HF	High Frequency
HF DF	High Frequency - Direction Finding
HUMINT	Human Intelligence
ICBM	Intercontinental Ballistic Missile
JASDF	Japan Air Self-Defense Force
JMSDF	Japan Maritime Self-Defense Force
KGB	Komitet Gosudarstvennoy Bezopasnosti (Soviet Committee for State Security)
LF	Low Frequency
LOW	Launch on Warning
LUA	Launch Under Attack
MAD	Magnetic Anomaly Detector



MHz	Megahertz
MIRV	Multiple Independently Targetable Re-entry Vehicle
NCA	National Command Authorities
NISC	Naval Intelligence Support Center
NORAD	North American Air Defense Command
OSNAZ	Otryad Osobovo Naznacheniya (Special Assignment Detachment)
OTH	Over-the-Horizon
RAN	Royal Australian Navy
RO	Fleet Intelligence Department (Soviet Navy)
RORSAT	Radar Ocean Reconnaissance Satellite
RU	Naval Intelligence Directorate (Soviet Navy)
SAM	Surface-to-Air Missile
SATCOM	Satellite Communications
SIGINT	Signals Intelligence
SLBM	Submarine Launched Ballistic Missile
SLOC	Sea Lines of Communications
SOSS	Soviet Ocean Surveillance System
SS	Diesel-powered Patrol Submarine
SSBN	Nuclear Ballistic Missile Submarine
SSGN	Nuclear-powered Guided Missile Submarine
SSN	Nuclear-powered Attack Submarine
START	Strategic Arms Reduction Talks; or, Strategic Arms Reduction Treaty
TLAM	Tomahawk Land Attack Cruise Missile
TLAM(N)	Tomahawk Land Attack Cruise Missile (Nuclear)
TVD	Theatre of Military Operations (Soviet)
US	United States
USAF	United States Air Force
USSR	Union of Soviet Socialist Republics
VDL	Video Datalink
VLF	Very Low Frequency

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## PREFACE

In the mid-1980s, the US Navy publicly articulated a strategy for maritime conflict with the Soviet Union which was fundamentally, purposefully and unabashedly offensive. The central feature of the strategy was that US forces would mobilise and move towards Soviet 'home waters' during periods of crisis and confrontation, and would move rapidly and directly to attack a wide range of Soviet submarine, surface and air forces, and supporting bases and facilities, at the very outset of a conflict. The public explication of the maritime strategy engendered much controversy. There was particular concern about the escalatory implications of the strategy.

Much of the public disquiet dissipated during the late 1980s. The dramatic changes that have taken place between the Moscow and Washington relations have decreased the likelihood of major confrontation, crisis or conflict between them and hence of the likelihood of the maritime strategy being implemented. Moreover, since the late 1980s, the US Navy has been reorienting its planning process to the development of plans for dealing with non-Soviet contingencies. In addition, the rhetoric of US Navy statements concerning offensive forward operations has become much more muted.

However, the fact remains that in the (admittedly less likely) event of a maritime conflict between the US and the Soviet Union, the US would still follow the strategy and plans which were articulated in the mid-1980s - i.e. aggressive, prompt, large-scale, forward offensive operations. The implications for escalation and crisis stability remain as disconcerting as ever.

This monograph is concerned with some of the more critical *operational* aspects of US strategy for offensive forward operations in the event of maritime conflict in the north Pacific. It discusses the basic rationales for this strategy; the role of the principal submarine, surface and air elements of the US posture; the relevant Soviet *operational* concepts and force posture; the strong escalatory pressures that derive from the interaction of the US and Soviet operational concepts and postures; some possible implications of a START agreement; and some particular subjects which warrant further consideration from the perspective of enhancing strategic stability.

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The fact that the US-Soviet strategic relationship has been dramatically transformed in recent years is not an excuse for neglecting these issues. On the contrary, so long as there remains a finite possibility of some form of confrontation or conflict between Moscow and Washington, even if only through inadvertence or miscalculation, it remains imperative to enhance the conditions for crisis stability and escalation control. Rather, the fact that the Moscow-Washington relationship is no longer driven by the dictates of global strategic competition provides an unprecedented opportunity for both unilateral and cooperative efforts to design and develop doctrines, operational concepts and force structures which are more conducive to stability in the maritime theatre. It is an opportunity which should not be forsaken.

Desmond Ball  
May 1991



# CHAPTER ONE

## INTRODUCTION

United States strategy for the conduct of maritime operations in the Pacific in the event of a conflict with the Soviet Union is fundamentally, purposefully and unabashedly offensive. US forces would mobilise and move towards Soviet 'home waters' during periods of crisis and confrontation, and would move rapidly and directly to attack a wide range of Soviet submarine, surface and air forces, and supporting bases and facilities, at the very outset of a conflict. The key features of the strategy, described most succinctly by the then Secretary of the Navy, John Lehman, and the then Chief of Naval Operations (CNO), Admiral James D. Watkins, in June 1985, are that US maritime forces would respond quickly, act speedily and decisively, seize the initiative, 'move out aggressively,' establish superiority, 'carry the fight to the enemy', 'win the battle', and 'bring the war to termination on terms favourable to the United States'.<sup>1</sup>

These basic features of US maritime strategy were not novel to Secretary Lehman, Admiral Watkins, or the Reagan Administration more generally. Indeed, the concept of offensive operations in forward areas has been central to US maritime strategy for more than a quarter of a century. In 1969, for example, US Navy officials testified that 'offensive operations in forward areas' were a primary assignment of the US nuclear-powered attack submarines (SSNs).<sup>2</sup> On 10 December 1975, Vice Admiral Daniel Murphy, then the Director of ASW and Ocean Surveillance Programs in the Office of the Chief of Naval Operations, testified to Congress concerning anti-submarine warfare (ASW) that:

- 
- 1 US Congress, House Armed Services Committee, Subcommittee on Seapower and Strategic and Critical Materials, *The 600-Ship Navy and the Maritime Strategy*, (U.S. Government Printing Office, Washington, D.C., 1985), pp.27-53.
  - 2 US Congress, House Armed Services Committee, *Department of Defense Appropriations for Fiscal Year 1970*, (U.S. Government Printing Office, Washington, D.C., 1969), Part 4, p.277.

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We intend to engage the enemy submarines in the forward areas, as far from our own shores, sea lines of communication, and forces as possible.... By forward areas, we mean areas near the potential enemy's bases and homeland.<sup>3</sup>

On 28 March 1979, Admiral Thomas B. Hayward, the then Chief of Naval Operations (CNO), testified that the 'most demanding' but nevertheless 'necessary' requirement for US naval forces was 'to seek out and destroy [Soviet naval forces] wherever they may be, even in Soviet coastal waters'.<sup>4</sup> On 27 February 1980, Admiral Hayward testified that it was 'imperative for the U.S. to contain and attrite the Soviet Navy as close to their home waters in a conflict as possible', and that 'attack submarine employment in far forward area offensive operations' was an increasing requirement.<sup>5</sup> According to Admiral Hayward,

The most effective way we can gain and maintain control of the seas is by developing a Navy that has offensive capability, so that we can take the initiative - put the Soviets on the defensive and keep them on the defensive, where they have to operate close to their shorelines.... We have to have that kind of offensive strength.<sup>6</sup>

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- <sup>3</sup> US Congress, Senate Committee on Armed Services, *Fiscal Year 1977 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths*, (U.S. Government Printing Office, Washington D.C., 1976), Part 4, pp.1944, 1956.
- <sup>4</sup> US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1980*, (U.S. Government Printing Office, Washington, D.C., 1979), Part 3, p.1292.
- <sup>5</sup> US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1981*, (U.S. Government Printing Office, Washington, D.C., 1980), Part 2, pp.867-868.
- <sup>6</sup> *Ibid.*, p.788.

And on 4 March 1981, Vice Admiral Sylvester R. Foley, Deputy Chief of Naval Operations (Plans, Policy and Operations) testified that 'a strong offensive naval capability in the Pacific is ... critical.... Our Pacific strategy should clearly involve prompt offensive action'.<sup>7</sup>

Some significant evolution of particular elements of the strategy certainly occurred during the 1980s - in response to changes in the Soviet force posture (such as the development of the *Delta* SSBNs and long-range SS-N-8 and SS-N-18 SLBMs, and the creation of SSBN 'bastions' in Soviet 'home waters' in the 1970s), developments in US naval capabilities, and certain conceptual developments encouraged by Secretary Lehman, CNO Admiral Watkins, and some members of the Office of the Secretary of Defense - such as the concept of horizontal escalation. However, these changes were more evolutionary than commonly reckoned. Further evolution has occurred under the Bush Administration. However, the fundamental elements of the strategy are unlikely to be challenged. As Admiral C.A.H. Trost, CNO, stated on 18 June 1987,

The concept is sound. It is evolutionary. Forward offensive naval operations ... have been the arbiter of U.S. diplomacy at least through this century....

Do think offensively.... Forward pressure is the only answer. Don't let the adversary take the initiative.<sup>8</sup>

And as Admiral Trost reported to Congress on 1 March 1989, the ability of the US Navy 'to execute forward, offensive operations ... in

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<sup>7</sup> US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1982*, (U.S. Government Printing Office, Washington, D.C., 1981), Part 4, p.1656.

<sup>8</sup> Admiral C.A.H. Trost, 'Strategic Options: Bringing Down the Bird of Thought', (Speech to the Current Strategy Forum, 18 June 1987, mimeo), pp.3, 8.



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**Figure 1**

**Satellite Photograph of Japan and the Straits taken from over Siberia**



the Pacific' remains an essential requirement of US national strategy.<sup>9</sup> According to Admiral Trost,

The basis of our national strategy is to deter and, if necessary, defeat the enemy as far forward as possible. This means..., if required, fighting in the enemies waters and on his shores rather than our own.... Naval forces, in particular, have proven to be best employed by seeking out and engaging the enemy in offensive operations where we seize and hold the initiative.<sup>10</sup>

This monograph is concerned with some of the more critical *operational* aspects of the US strategy for offensive forward maritime operations. It discusses the basic rationales for this strategy; the role of the principal submarine, surface and air elements of the US posture; the relevant Soviet *operational* concepts and force posture; the strong escalatory pressures that derive from the interaction of the US and Soviet operational concepts and postures; some possible implications of a START agreement; and some particular subjects which warrant further consideration from the perspective of enhancing strategic stability.

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<sup>9</sup> US Congress, House Appropriations Committee, *Department of Defense Appropriations for 1990*, (U.S. Government Printing Office, Washington, D.C., 1989), Part 1, p.575. Also published as Admiral Carlisle A.H. Trost, 'Posture Statement by the Chief of Naval Operations', in Department of the Navy, *Report to the Congress Fiscal Years 90-91*, (Navy Internal Relations Activity, Arlington, Virginia, 1989), p.32.

<sup>10</sup> House Appropriations Committee, *Department of Defense Appropriations for 1990*, Part 1, p.578.



## CHAPTER TWO

### SPEED AND DECISIVENESS

As explicated by Admiral Watkins, 'speed and decisiveness' are essential features of the US maritime strategy.<sup>1</sup> There are several important reasons for this - not the least being a Soviet awareness of the US strategy and a recognition that those forces which do not move early are unlikely to survive the US thrust forward. Hence, as Admiral Watkins testified on 24 June 1985:

At the brink of war...they [i.e., the Soviets] will flush their navy and move them out of port. We have seen them do that in exercises.<sup>2</sup>

And as he testified on 5 March 1985,

The surge capability of the Soviets is excellent. We have watched them surge their SSBNs and SSNs many times and they are quite good at it. Within a matter of 24 to 48 hours, they can surge their SSNs out of port and their SSBNs as well.<sup>3</sup>

The alert status of Soviet naval forces in the Pacific - including that of SSNs and SSBNs - has been increased during crises and military activities elsewhere in the past, such as during the Soviet invasion of Afghanistan in 1979.

A principal reason for the early forward movement of US maritime forces is to catch the Soviet SSBNs based at Petropavlovsk before they can 'surge' and find sanctuary in the bastion of the Sea of Okhotsk. Petropavlovsk is the home port for the 26 SSBNs currently maintained by the Pacific Fleet. (See Table 1).<sup>4</sup> Of these 26 SSBNs,

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1 House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.38.

2 *Ibid.*, p.28.

3 US Congress, House Appropriations Committee, *Department of Defense Appropriations for 1986*, (U.S. Government Printing Office, Washington, D.C., 1985), Part 2, p.927.

4 US Department of Defense, *Soviet Military Power, 1989: Prospects for Change*, (U.S. Government Printing Office, Washington, D.C.,



typically only about 15 per cent - or three or four submarines - are in peacetime on patrol at sea. Another 15 per cent to 25 per cent are on alert dockside, with missiles capable of reaching the continental United States (CONUS) from port, but although these could be used to 'launch on warning' (LOW) or 'launch under attack' (LUA), it would take them 'at least ten to twelve hours to bring up their reactors before they [could] put to sea',<sup>5</sup> and at least another ten to twelve hours to move from Petropavlovsk into the Sea of Okhotsk. Depending on their state of refit and repair and the speed with which crews could be reassembled, a further 20 per cent to 25 per cent could probably put to sea within 48-72 hours.

**Table 1**  
**Soviet SSBN Fleet**  
**September 1989**

Class	Northern Fleet	Pacific Fleet	Total SSBNs	Missiles per SSBN	Warheads per SLBM	Total Warheads
Typhoon	5	-	5	20 SS-N-20	10	1,000
Delta IV	5	-	5	16 SS-N-23	4	320
Delta III	7	8	15	16 SS-N-18	7	1,680
Delta II	4	-	4	16 SS-N-8	1	64
Delta I	9	9	18	12 SS-N-8	1	216
Yankee II	1	-	1	12 SS-N-17	1	12
Yankee I	8	9	17	16 SS-N-6	2	544
	39	26	65			3,836

September 1989), p.15; Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons: A Complete Inventory*, (Neptune Papers No.2, Greenpeace and Institute for Policy Studies, Washington, D.C., May 1988); and Thomas B. Cochran, William M. Arkin, Robert S. Norris and Jeffrey I. Sands, *Nuclear Weapons Databook, Volume IV: Soviet Nuclear Weapons*, (Harper & Row, New York, 1989).

<sup>5</sup> Stephen M. Meyer, 'Soviet Nuclear Operations', in Ashton B. Carter, John D. Steinbruner and Charles A. Zraket (eds), *Managing Nuclear Operations*, (The Brookings Institution, Washington, D.C., 1987), pp.494, 507.

## 8 *Provocative Plans: US Strategy for Maritime Conflict in the North Pacific*

Similarly, early forward movement would be required to catch the Soviet SSNs before they are 'flushed' from their bases. The Soviet Navy has surged its SSNs several times in exercises and 'can put a substantial portion of them to sea in 24-48 hours'.<sup>6</sup> These would go to sea not just for reasons of survivability, but more importantly to assist the SSBNs travelling to the Sea of Okhotsk by attempting to keep the passages into the Sea free from US SSNs, and to attack the US carrier battle groups and to threaten to sea lines of communications (SLOCs).

Rapid forward movement by US aircraft carriers and *Tomahawk* land attack cruise missiles (TLAMs) is also required to attack the Soviet Naval Aviation (AV-MF) bases and support facilities in order to deny Soviet naval aircraft the use of forward bases from which to attack US naval forces, possibly even to destroy the aircraft before they could disperse to secondary relocation sites, and at the least to prevent them refuelling and/or rearming for subsequent maritime reconnaissance or strike missions.

US naval forces (and particularly ASW forces) also have to move fast in order to engage the Soviet forces, and particularly the Soviet submarines, before the Soviets could destroy or render inoperable US ASW sensors and thus blind US ASW forces.

Finally, rapidity of movement is required in those circumstances where the maritime strategy is implemented in the Pacific in order to relieve the pressure on US or Allied forces elsewhere, such as on the Central Front in Europe. According to Admiral Watkins, a 'central premise of US strategy' is to deny the Soviets the option of concentrating their forces on the Central Front (or some other theatre of operations) by threatening the Soviet Far East where Soviet assets are relatively vulnerable and US forces enjoy superiority.<sup>7</sup> As Secretary Lehman has argued, the movement of US SSNs into the Sea of Okhotsk to threaten Soviet SSBNs in the bastion would force the Soviets 'to divert long-range air forces out of the

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6 Tom A. Stefanick, *Strategic Antisubmarine Warfare and Naval Strategy*, (Lexington Books, Lexington, Massachusetts, 1987), p.58.

7 James D. Watkins, 'The Maritime Strategy', *US Naval Institute Proceedings*, (Vol.112, No.1), January 1986, Supplement, p.7.

Central Front'.<sup>8</sup> However, if the military situation in the Central Front (or some other theatre of operations) has deteriorated to the point where horizontal escalation of this magnitude is required, then rapidity of movement is essential. Several days would be too long.

A more comprehensive and detailed review and analysis of the US forces which would be employed in maritime operations in the North Pacific and of the postulated Soviet target sets both reinforces the essence of speed and illumines the magnitude of the operations.

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<sup>8</sup> Ronald Lehman, quoted in Michael Getler, 'Lehman Sees Kola Peninsula as a Key to Soviet Naval Strategy', *Washington Post*, 29 December 1982, p.A4.

# CHAPTER THREE

## US FORCES FOR MARITIME OPERATIONS IN THE PACIFIC

The US strategy for maritime operations in the North Pacific involves the coordinated employment of all submarine, surface and air forces, together with electronic warfare (EW) and command, control, communications and intelligence (C<sup>3</sup>I) systems, in the region.<sup>1</sup> The principal 'offensive strike' elements are the SSNs, the carrier battle groups (CVBGs), and the US Air Force and US Navy tactical air forces.

### (i) SSNs

The employment of SSNs in 'offensive operations in forward areas' has been a critical element of US strategy for maritime operations at least since the late 1960s.<sup>2</sup> According to Admiral Watkins, on 7 February 1984,

The employment of SSNs, both prior to conflict and in conflict, is probably one of the most sensitive and significant areas of our maritime strategy. Without going into great detail I can say it is probably the most significant part of the strategy. The rapid surge of SSNs is absolutely key as an option for the movement of SSNs as a tool in the National Command Authority to try to deter conflict or, if unsuccessful, to win on terms favourable to us.<sup>3</sup>

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1 House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.61.

2 House Armed Services Committee, *Department of Defense Appropriations for 1970, Part 4*, p.277.

3 US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, (U.S. Government Printing Office, Washington, D.C., 1984), Part 2, p.902.



And according to Vice Admiral Nils R. Thunman, Deputy Chief of Naval Operations (Submarine Warfare), on 28 February 1985,

Attack submarines are central to effective execution of our forward naval strategy. This was clearly stated by the Secretary of the Navy when he recently wrote: 'Particularly in submarine warfare, unless a forward strategy is employed at once to force the Soviet submarines to protect their strategic missile forces and the approaches to their home waters, Soviet superiority in numbers could well determine the outcome of the war'. Our attack submarine force is capable of fighting and winning against today's threat.<sup>4</sup>

The central utility of SSNs in forward operations derives from several factors. To begin with, as Rear Admiral Jeffrey C. Metzler, Director of the Antisubmarine Warfare Division of the Office of the Chief of Naval Operations, testified on 21 March 1979, the SSN is the only platform 'that can operate where the enemy controls the air and the surface', such as waters near the USSR.<sup>5</sup> According to Admiral Metzler,

Of all of the platforms which we have to consider, the attack submarine is the most versatile. It can be used not only in areas where we control the airspace and the surface, but it can go into the enemy's backyard. So in that respect it is unique.<sup>6</sup>

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<sup>4</sup> US Congress, House Armed Services Committee, Subcommittee on Seapower and Strategic and Critical Materials, *Defense Department Authorization and Oversight, Hearings on SH.R. 5167: Department of Defense Authorization of Appropriations for Fiscal Year 1985*, (U.S. Government Printing Office, Washington, D.C., 1984), Part 3, pp.128-129.

<sup>5</sup> US Congress, Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1980*, (U.S. Government Printing Office, Washington, D.C., 1979), Part 6, p.2927.

<sup>6</sup> *Ibid.*, p.2933.

12 *Provocative Plans: US Strategy for Maritime Conflict in the North Pacific*

And, second, SSNs operating in forward areas have a unique ability to 'tie up' a disproportionate proportion of Soviet forces. As Admiral Kinnaird R. McKee explained on 4 May 1984,

Lots of people don't understand...that a handful of submarines operating in the other guy's backyard are going to tie up forces far out of proportion. As long as there is one guy...mobile enough to look like more than one, he creates a terrible situation. The principal element of that leverage is certainty and uncertainty in the minds of the enemy; certainty because he knows what this submarine can do and terrible uncertainty because he doesn't know what it will do and how we will use it.

Uncertainty is the most damaging element in the planner's book. It just drives them nuts. In submarine warfare, we bring uncertainty to the table like nothing else.<sup>7</sup>

The timing of the forward movement of the SSNs into Soviet home waters is 'a matter of great import to the US Navy'.<sup>8</sup> During peacetime, it is likely that there would be a couple of US SSNs already in the Sea of Okhotsk, either engaged in intelligence collection operations<sup>9</sup> or trailing the Soviet SSBNs on patrol in the Sea. In a period of tension or crisis, the US would attempt to surge forward most of its available SSNs. As Captain Linton F. Brooks has stated, the intention is to send 'essentially the entire attack submarine force' into

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<sup>7</sup> US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, (U.S. Government Printing Office, Washington, D.C., 1984), Part 7, p.3681.

<sup>8</sup> Tom A. Stefanick, *Strategic Antisubmarine Warfare and Naval Strategy*, p.92.

<sup>9</sup> See Desmond Ball, 'Nuclear War at Sea', *International Security*, (Vol.10, No.3), Winter 1985/86, pp.4-5; and Jeffrey T. Richelson and Desmond Ball, *The Ties That Bind: Intelligence Cooperation Between the UKUSA Countries - the United Kingdom, the United States of America, Canada, Australia and New Zealand*, (George Allen & Unwin, Sydney, London and Boston, 1985), pp.222-224.



Soviet 'home waters'.<sup>10</sup> According to testimony of Admiral Watkins on 5 March 1985, the US Navy practised this in a major exercise in late 1984 in which 44 SSNs were surged into the Atlantic within 24 hours - all 'with a full load of Mark 48 torpedoes, *Harpoons* and other weapons'.<sup>11</sup> In March 1985, the SSNs were surged out of Hawaii and San Diego.<sup>12</sup> According to Admiral Watkins, it is hoped that the SSNs could be surged from all ports '30 days or so, 10 days before the conflict starts'<sup>13</sup> - although just how it might be predicted that a conflict was 10 or 30 days off remains unclear! Further, according to testimony of Admiral Watkins on 5 March 1985,

The Soviets expect us on warning to surge SSNs. They know we are going to the bastions. They know we can get inside their knickers before they can find us and they don't like it.<sup>14</sup>

The US Navy currently maintains some 43 SSNs in the Pacific.<sup>15</sup> (See Table 2) It is not possible - and, indeed, it would be misleading - to strictly apportion each SSN to a particular mission. However, the general mission priorities and proportions involved are extremely noteworthy.

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10 Linton F. Brooks, 'The Nuclear Maritime Strategy', *US Naval Institute Proceedings*, (Vol.113, No.4), April 1987, p.39.

11 House Appropriations Committee, *Department of Defense Appropriations for 1986*, Part 2, p.927.

12 Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, Part 8, p.3888.

13 *Ibid.*

14 House Appropriations Committee, *Department of Defense Appropriations for 1986*, Part 2, p.927.

15 See Desmond Ball, 'Some Implications of Fifty Per Cent Reductions in Strategic Nuclear Forces for Sea-Based Systems', in Sverre Lodgaard (ed.), *Naval Arms Control*, (Sage Publications, London, 1990), pp.220-221.

**Table 2**  
**US SSN Deployments, Pacific**  
**December 1987**

SSN Class	Number
Permit (SSN-594)	8
Sturgeon (SSN-637)	20
Los Angeles (SSN-688)	15
	43

The single most important role of these SSNs is, 'at the outset of hostilities', to 'move deep into Soviet waters' and 'sink his [i.e., the Soviet] fleet, bottle up his submarine force, [and] attack land bases [with the Tomahawk nuclear-armed land-attack sea-launched cruise missile]'.<sup>16</sup> On 6 March 1985, Vice Admiral Thunman testified as follows:

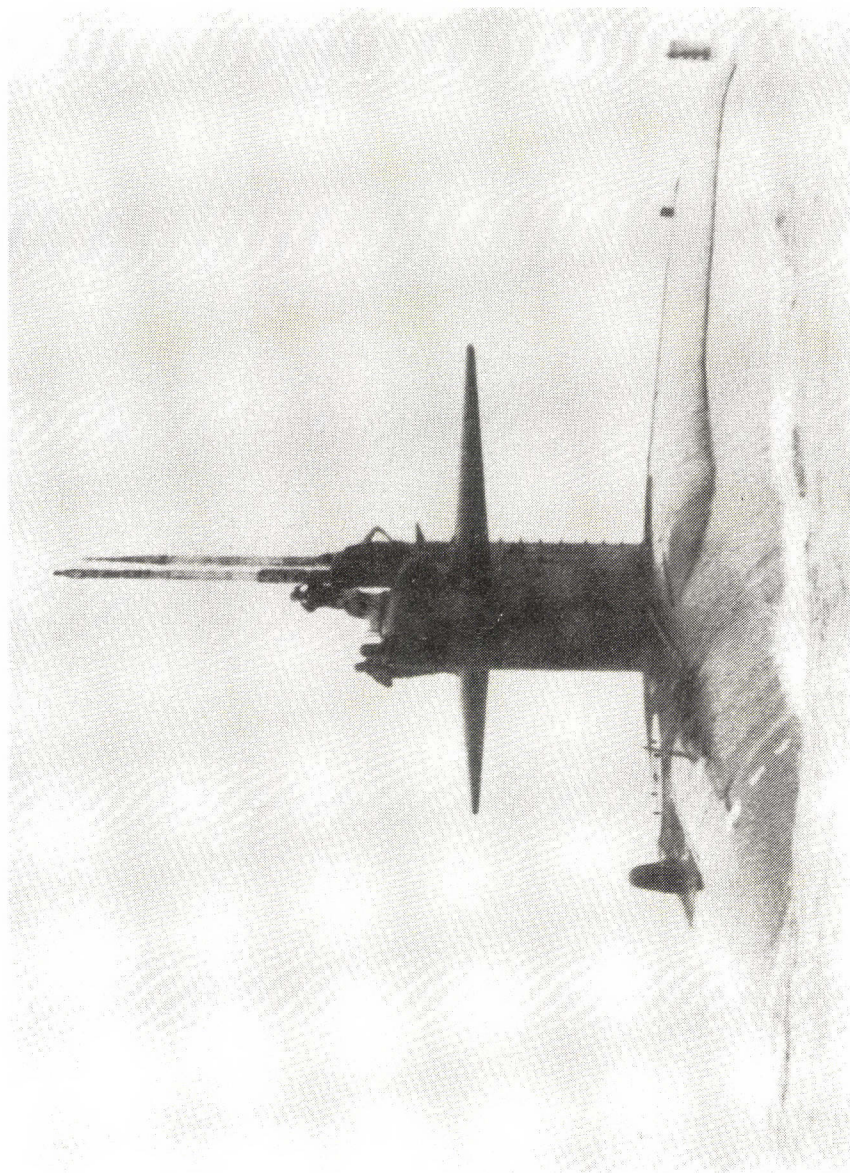
The attack submarine plays a vital role in our maritime strategy. At the beginning of any conflict with the Soviets, it would go forward immediately, deep into his home waters to threaten his fleet, to bottle up his massive submarine force, and now with the advent of the Tomahawk cruise missile to attack his land bases. *The majority of our SSNs would be involved with this forward effort.* The rest would be supporting our carrier battle groups as they perform their offensive missions world wide.<sup>17</sup>

<sup>16</sup> House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.137.

<sup>17</sup> US Congress, House Armed Services Committee, Subcommittee on Seapower and Strategic and Critical Materials, *Defense Department Authorization and Oversight, Hearings on H.R. 1872: Department of Defense Authorization for Appropriations for Fiscal Year 1986*, (U.S. Government Printing Office, Washington, D.C., 1985), Part 3, p.144.

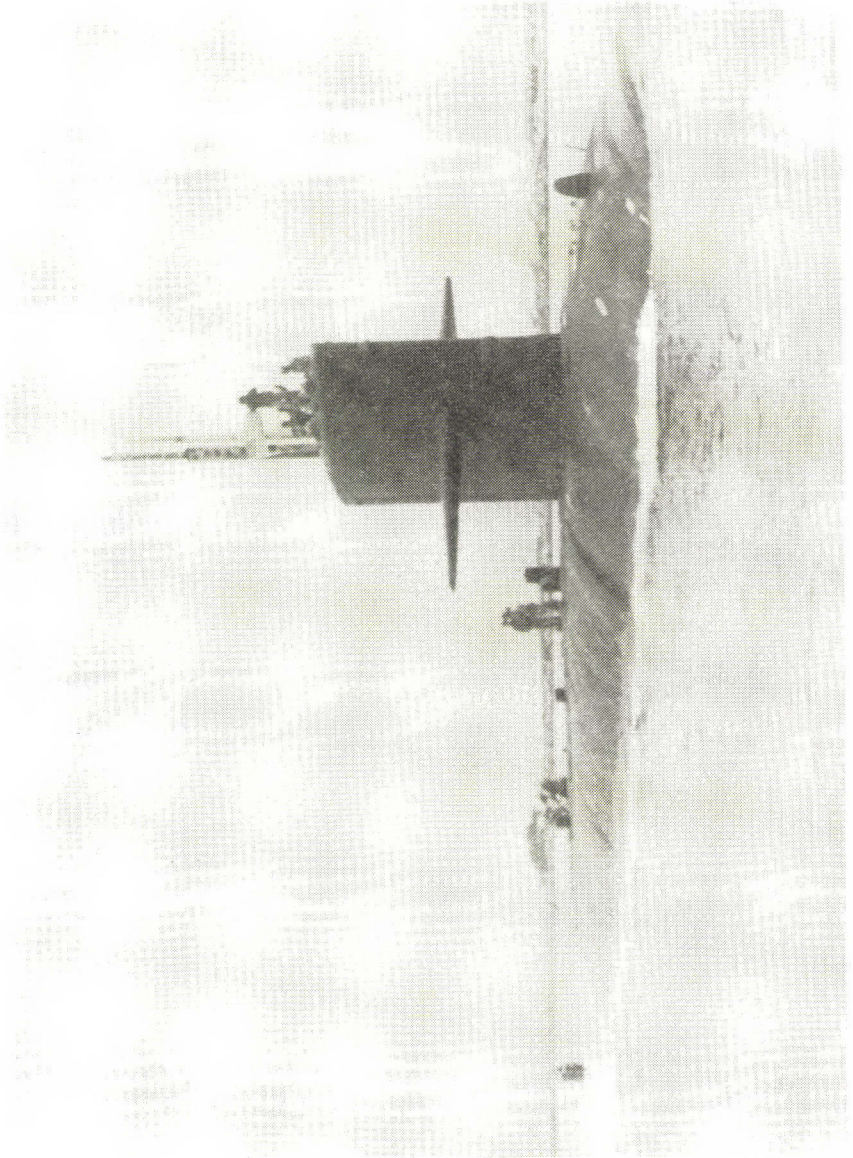


**Figure 2**  
**The *Plunger* (SSN 595), a *Permit*-class Nuclear Attack Submarine,  
Based at San Diego, California**



**Figure 3**

**The *William H. Bates* (SSN 680), a *Sturgeon*-class Nuclear Attack Submarine, Based at San Diego, California**





**Figure 4**

**The *Los Angeles* (SSN 688) Nuclear Attack Submarine, Based at Pearl Harbor, Hawaii**



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The second mission is to provide support to carrier battle groups (CVBGs) world-wide.<sup>18</sup> The US currently has 14 carriers, of which six are normally deployed in the Pacific. Each CVBG generally includes 1-3 SSNs in peacetime; in wartime, these would consolidate into two or three battle forces, each with 2-3 carriers and 3-4 SSNs.<sup>19</sup> Other US SSN roles include 'barrier operations...at key choke points of the world,'<sup>20</sup> and the protection of Western sea lines of communication (SLOCs).<sup>21</sup> Relatively few US SSNs would be allocated to this latter mission, where major contributions would be expected from Japanese and other allied attack submarine forces. An indicative break-down of US SSN deployments according to these missions is shown in Table 3.

Table 3  
US SSN Missions, North Pacific

SLOC Defence	Barrier Operations	CVBG Support	Forward Operations	Total
3	4	7	29	43

Given that some of the carrier battle groups and perhaps most of the SSNs deployed in forward operations would be engaged in counter-Soviet SSBN operations, it is reasonable to assume that some two-thirds of the US SSNs overall would be engaged in these operations.

It should be noted that both the *Sturgeon* and *Los Angeles* classes of SSNs are equipped to carry nuclear-armed *Tomahawk* land-attack cruise missiles (T-LAM(N)s) - the *Sturgeons* and the *Los Angeles* class SSN-688 to SSN-718 can carry eight T-LAM(N)s internally, to be fired from torpedo tubes, while the *Los Angeles* class SSN-719 and after have a capsule launch system (CLS) installed in the bow that can carry

18 House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.137.

19 *Ibid.*, p.33.

20 *Ibid.*, pp.44-45.

21 *Ibid.*, pp.43-51.



12 T-LAM(N)s.<sup>22</sup> Although the land-attack mission has not been explicated in Table 3, it is clear that a significant proportion of the SSNs would have land-attack roles against Soviet Naval Aviation and C3I facilities in addition to their counter-SSBN and CVGB support missions.

## (ii) CVBGs

In peacetime, there are normally six carriers based in the Pacific, each of which operates with 1-2 cruisers, 4-6 destroyers and 1-3 SSNs. In wartime, these would coalesce into two or three larger battle groups each with 2-4 carriers and larger numbers of cruisers and destroyers.<sup>23</sup>

Although there has been much debate within the US Navy concerning the advisability of sending these CVBGs forward, Admiral Watkins, when he was CNO, was fairly unequivocal: the CVBGs would conduct 'strike operations close to the heart of the Soviet motherland', and although the 'time line' for these operations could be more flexible than that of the SSNs,

...there could be a sequence of events taking place very quickly. This could come to bear within the first 24 hours of combat.<sup>24</sup>

On 23 February 1984, Admiral William J. Crowe, the Commander-in-Chief Pacific Command (CINCPAC) testified that a 600-ship Navy, based around 15 carrier battle groups, was required because of the expectation of 'intense and immediate air and sea engagements in the Northwestern Pacific ... if global hostilities break out'.<sup>25</sup>

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22 Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons: A Complete Inventory*, p.12.

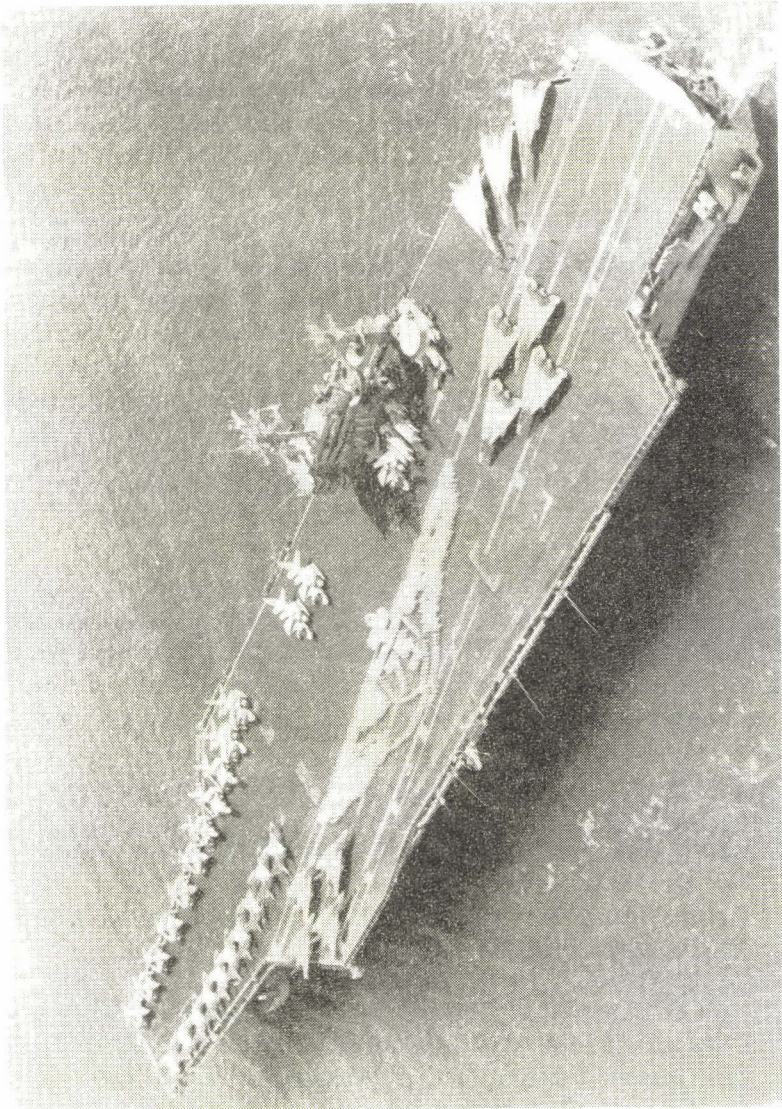
23 House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.33.

24 *Ibid.*, p.52.

25 US Congress, Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, (U.S. Government Printing Office, Washington, D.C., 1984), Part 2, p.1198.

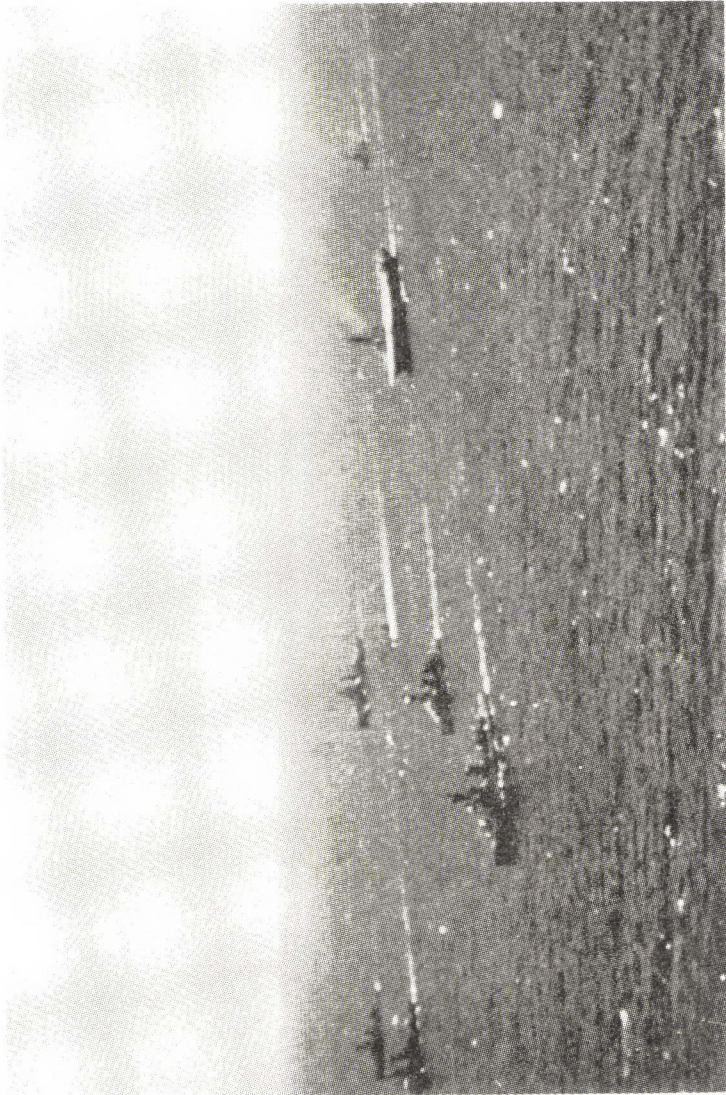
**Figure 5**

**US Navy Multi-purpose Aircraft Carrier *Carl Vinson* (CVN 70), Based at Alameda, California. The *Carl Vinson* Carries F-14 Tomcats, F/A-18 Hornets, EA-6B Prowlers, A-7E Corsairs, E-2C Hawkeyes, S-3A Vikings, and SH-3 Sea King Helicopters**





**Figure 6**  
**US Navy Carrier Battle Group**



Source: Japan Defense Agency, *Defense of Japan 1986*, (Japan Defense Agency, Tokyo, 1987), p.16.



Figure 7

US Navy/Grumman A-6 Intruder Long-Range, Carrier-Based Attack Aircraft, Equipped to Carry Both *Harpoon* Anti-ship Missiles and Various Types of Nuclear Anti-ship Bombs

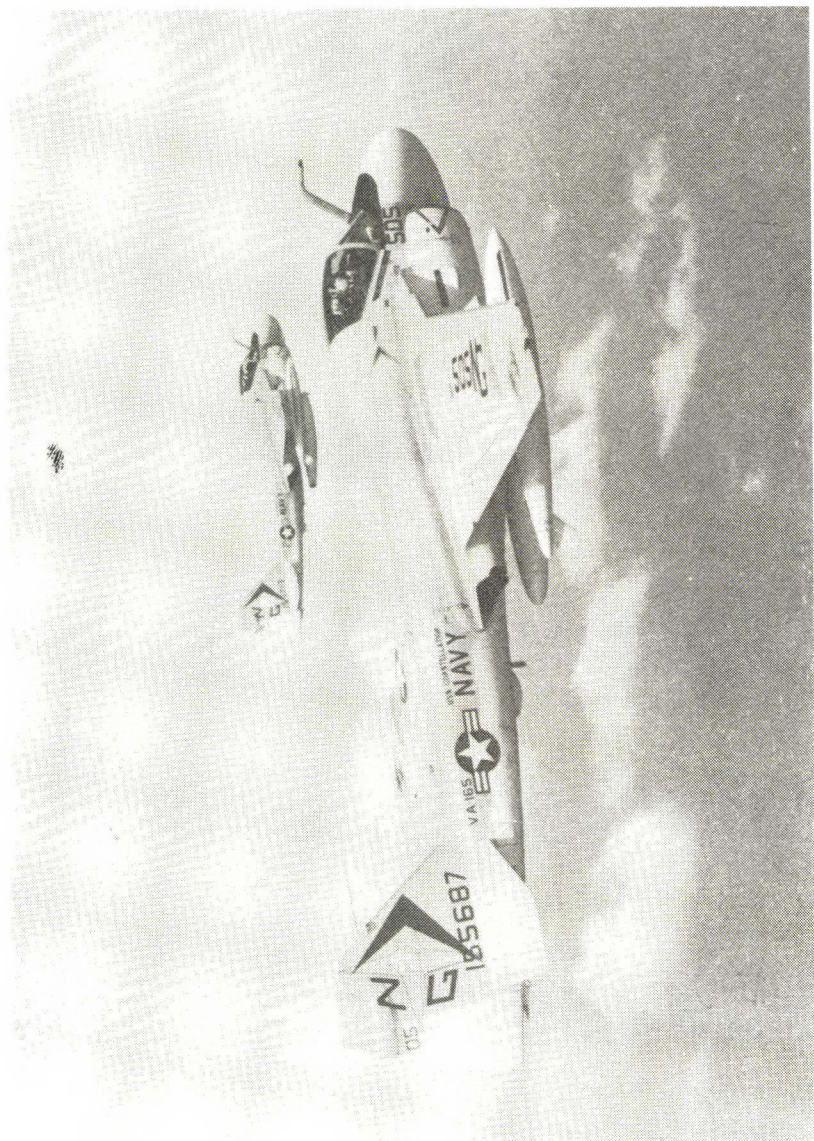
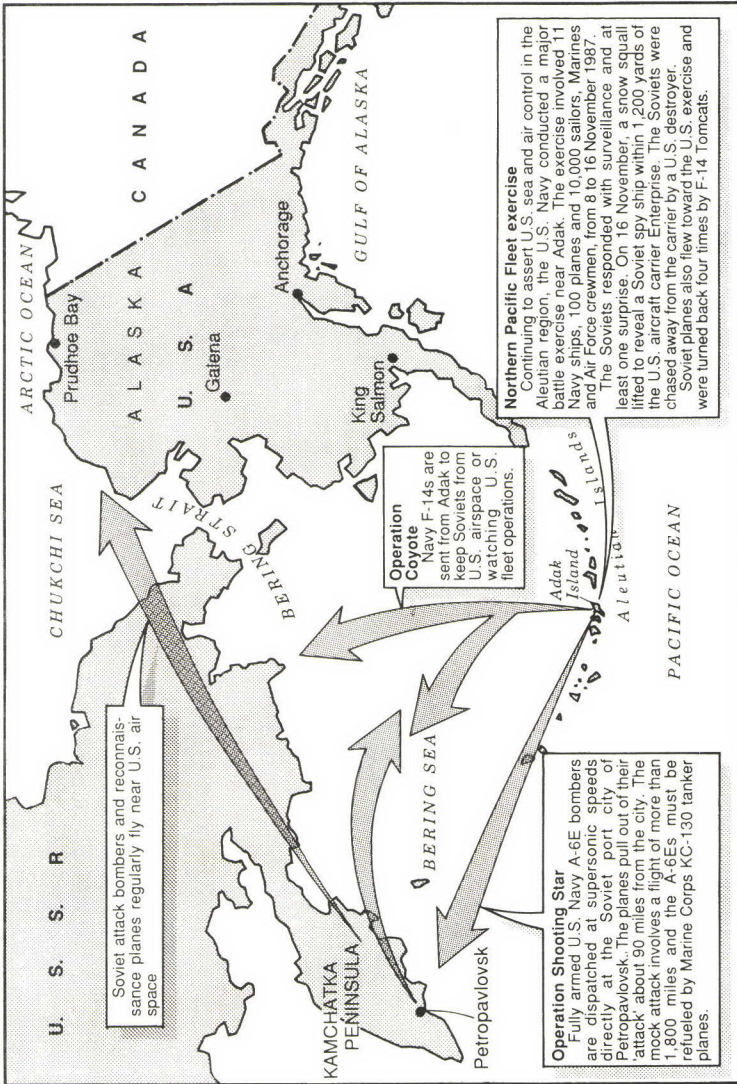


Figure 8  
Operation Shooting Star and NorPacEx, 1986-87



Source: Tom Burgess, 'Navy Jet Feints at USSR Told', *San Diego Union*, 22 November 1987, p.A1.



(iii) Air Forces

The US strategy for maritime operations in the Pacific also involves a range of aircraft in 'offensive strike warfare'.<sup>26</sup> These include A-6 *Intruders*, F-14 *Tomcats*, and F/A-18 *Hornets*, supported by E-2C *Hawkeyes* and EA-6B *Prowler* electronic warfare aircraft, as well as P-3C *Orions* equipped with *Harpoon* anti-ship missiles.

These aircraft would be used not only against Soviet surface ships, but also (in the case of the P-3Cs) Soviet submarines, and a range of land targets - including Soviet air bases and facilities, air defence sites, and ports. In 1986-87, for example, the US Navy conducted operation *Shooting Star*, which reportedly involved more than two dozen missions in which fully-armed A-6 *Intruders* practiced mock attacks against Petropavlovsk, generally pulling out of the 'attacks' about 90 miles from the city.<sup>27</sup>

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<sup>26</sup> *Ibid.*, p.47.

<sup>27</sup> Tom Burgess, 'Navy Jet Feints at USSR Told', *San Diego Union*, 22 November 1987, pp.A-1, A-10.



## CHAPTER FOUR

### THE SOVIET TARGET SET

US Defense and Navy planners have testified that, in a variety of circumstances and under various assumptions, the 'legitimate' targets in the event of a conventional conflict in the north Pacific would include almost every Soviet military base, facility and weapons platform, as well as many civil installations, in the Soviet Far East. The scope and size of the notional target set is extremely daunting.

#### (i) Soviet Submarines

Attacking Soviet submarines, particularly by US SSNs, is the centrepiece of the US strategy for maritime operations in the North Pacific. Vice Admiral Bruce De Mars has described submarine warfare as the 'underpinning' of US maritime strategy:

If [US] submarines don't go up there in the Soviets' back yard and clean up on the Soviet submarines early in a war, then our current view of the maritime strategy is invalid. It is as simple as that.<sup>1</sup>

Attacks would be conducted against both Soviet SSNs and SSBNs.

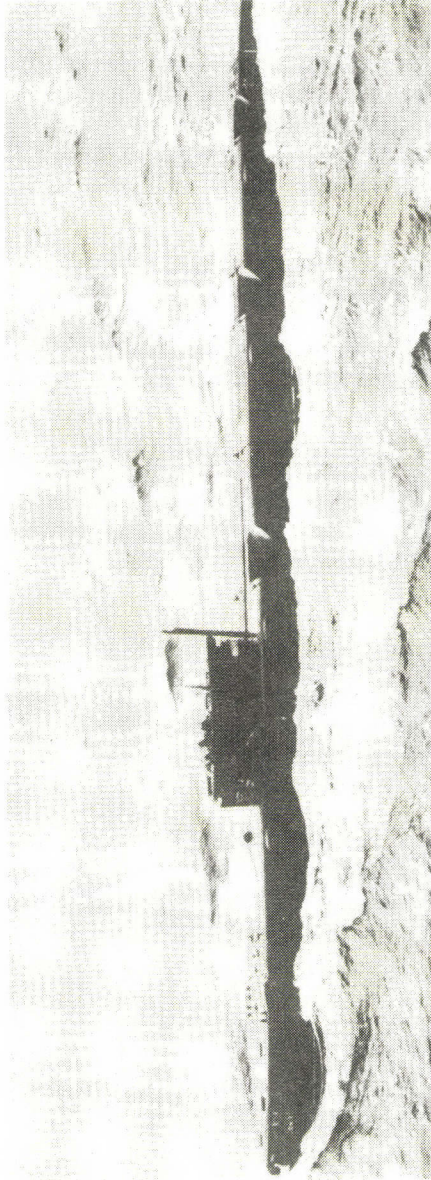
American Navy officials have long conceded that Soviet SSBNs would be attacked during the course of ASW operations in a conventional conflict, but until the mid-1980s the counter-SSBN operations were not emphasized.

The nature of the ocean medium makes it practically impossible to engage some forces while simultaneously indicating clearly and unambiguously the deliberate avoidance of others. Most ASW systems serve both tactical and counter-SSBN operations, and many cannot distinguish between attack (or 'hunter-killer') submarines and fleet ballistic missile (FBM) submarines. As Vice Admiral Murphy, Director of ASW and Ocean Surveillance Programs,

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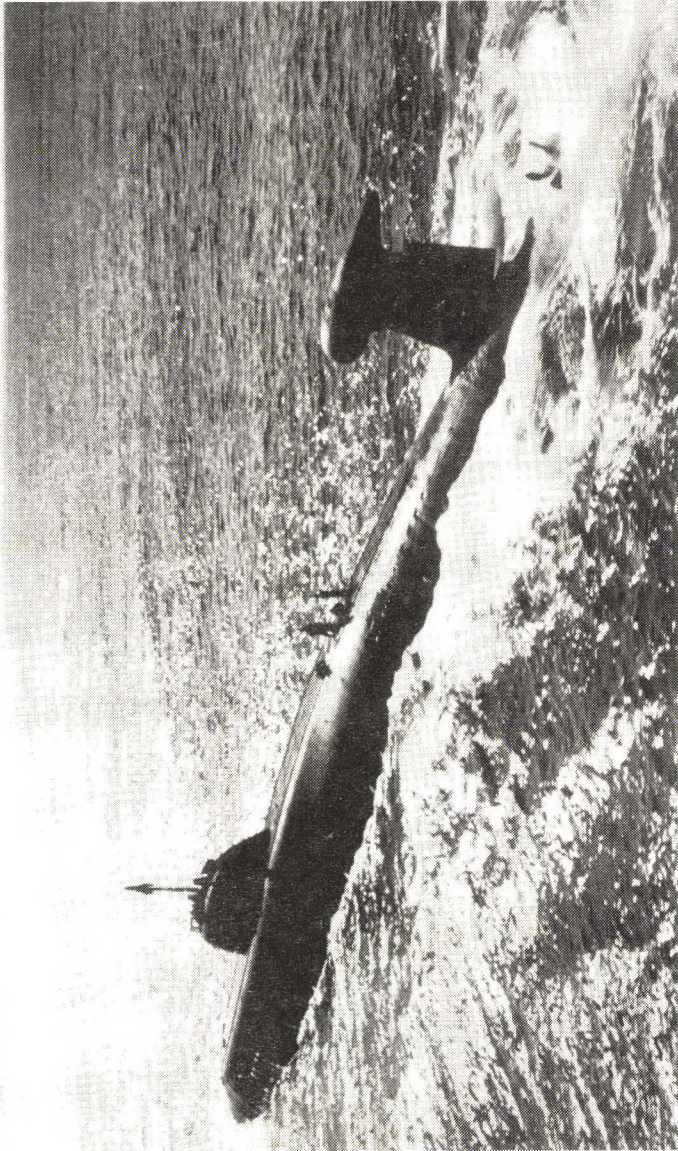
<sup>1</sup> Cited in James O'Shea, 'U.S. To Sink Billions Into New Attack Sub', *Chicago Tribune*, 20 July 1986, p.1.

**Figure 9**  
***Echo II SSGN, 13 of which were***  
***Based in the Pacific in mid-1987***

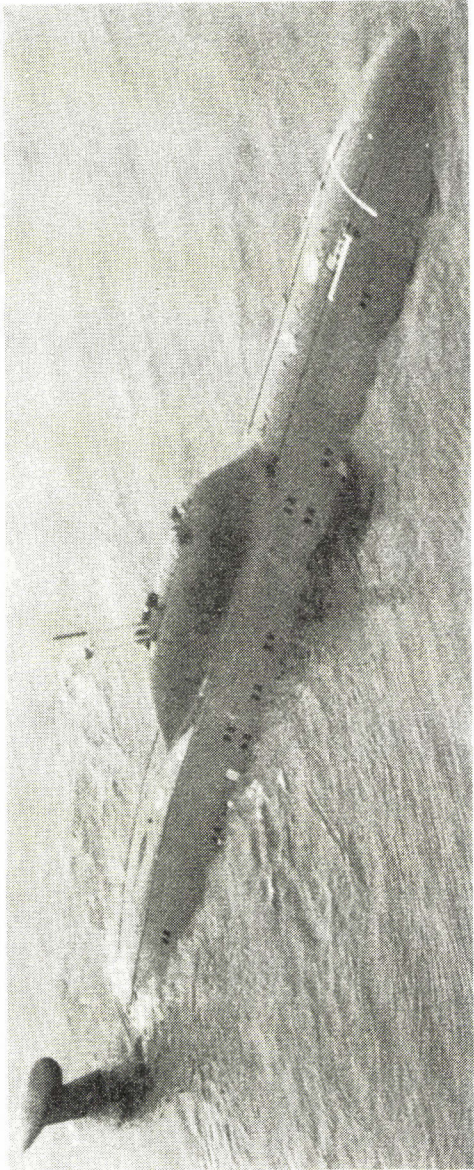




**Figure 10**  
**Victor III SSN, 10 of which were**  
**Based in the Pacific in mid-1987**

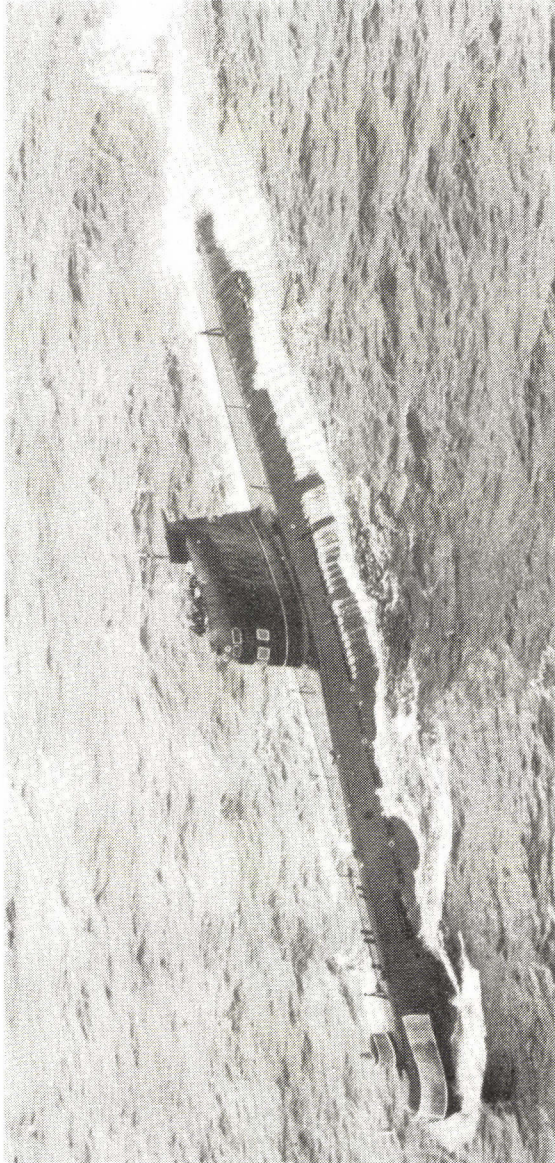


**Figure 11**  
***Akula* SSN, three of which**  
**are Based in the Pacific**

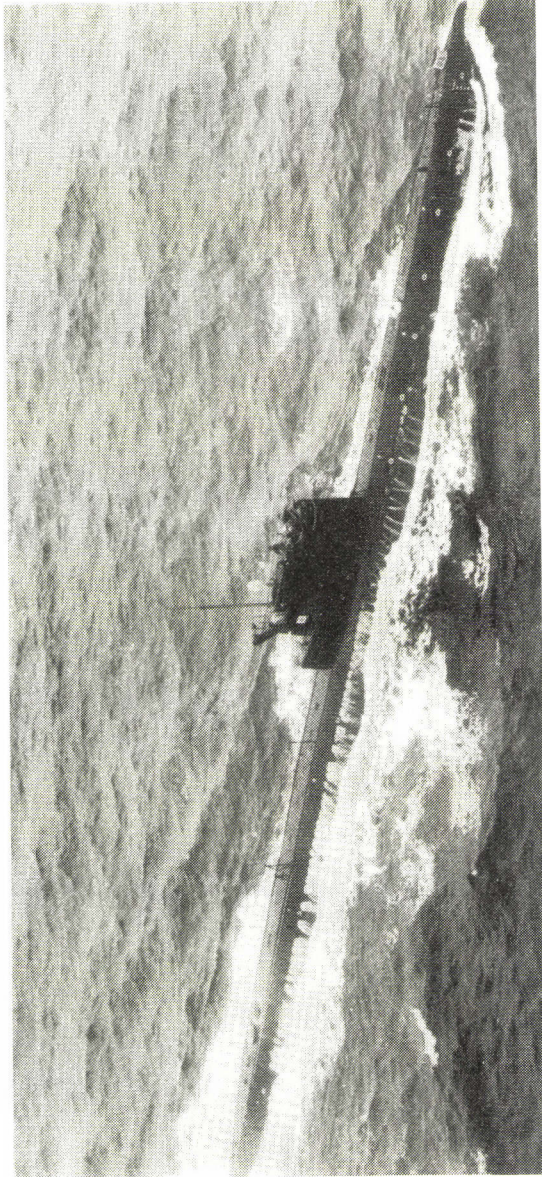




**Figure 12**  
***Foxtrot* SS, 15 of which were**  
**Based in the Pacific in mid-1987**



**Figure 13**  
***Whiskey SS, 19 of which were***  
***Based in the Pacific in mid-1987***





testified on 10 December 1975, in a war-fighting situation the Navy 'would not be in a position of differentiating their [i.e., Soviet] attack submarines from their SSBNs'.<sup>2</sup>

And Vice Admiral Lee Baggett, Jr., then Director of Naval Warfare, testified on 26 February 1985:

I think [requiring US attack submarines to distinguish between Soviet SSBNs] would be a stricture that would be very, very onerous from the standpoint of ASW. I don't believe you could make a distinction in a combat environment—even prehostilities—with certainty to distinguish between SSBNs and attack submarines. It is going to get worse in the future with the quieting trends that I depicted, regardless of our capabilities. I think you would not be able, with any certainty, to make that distinction.<sup>3</sup>

And as Vice Admiral Robert Kaufman, the Navy's Director of Command, Control and Communications testified on 6 April 1977, 'in a conventional war all submarines are submarines. They are all fair game'.<sup>4</sup>

One reason for this, besides the technical problems of differentiating between the various types of submarines detected, is that SSBNs themselves have a significant ASW capability in the numerous torpedoes with which they are equipped. As Rear Admiral

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2 US Congress, Senate Armed Services Committee, *Fiscal Year 1977 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths*, (U.S. Government Printing Office, Washington, D.C., 1976), Part 4, p.1972.

3 US Congress, Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1986*, (U.S. Government Printing Office, Washington, D.C., 1985), Part 8, p.4399.

4 US Congress, Senate Armed Services Committee, *Fiscal Year 1978 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve, and Civilian Personnel Strengths*, (U.S. Government Printing Office, Washington, D.C., 1977), Part 10, p.6699.

Kelln testified on 23 March 1976, although SSBNs have not been designed for the ASW mission, 'the fact remains that it is not inconceivable that the SSBN, if the situation became necessary, could be used as an offensive tactical weapon, that is to seek out other submarines'.<sup>5</sup> Another reason is that Soviet SSBNs may be targeted against surface ships rather than against land targets in the United States.<sup>6</sup> The pressure to attack these submarines (including the SSBNs) as soon as possible after the outbreak of a conflict, before the Soviet Union could destroy US ASW sensor systems and thus blind US ASW forces, could be irresistible. Certainly, the notion that the Navy should refrain from attacks on SSBNs for fear of sending a false signal of impending escalation 'has an aura of unreality for many professional officers'.<sup>7</sup>

During the mid-1980s, however, the counter-SSBN mission was explicated as an intrinsic feature of US maritime strategy. As Captain Linton Brooks has argued, destroying SSBNs, even in the early stages of a conventional conflict, could 'dramatically alter the nuclear balance to the US advantage and cause the Soviets to terminate the conflict on US terms'.<sup>8</sup> As Admiral Watkins explained it in 1986:

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5 US Congress, Senate Armed Services Committee, *Fiscal Year 1977 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths*, (U.S. Government Printing Office, Washington, D.C., 1976), Part 12, p.6609.

6 See Bruce G. Blair, 'Arms Control Implications of Anti-Submarine Warfare (ASW) Programs', in US Congress, House of Representatives, Committee on International Relations, *Evaluation of Fiscal Year 1979 Arms Control Impact Statements: Toward More Informed Congressional Participation in National Security Policymaking*, (U.S. Government Printing Office, Washington, D.C., 1978), p.115.

7 Captain Linton F. Brooks, 'Pricing Ourselves Out of the Market: The Attack Submarine Program', *Naval War College Review*, September-October 1979, p.5.

8 Linton F. Brooks, 'Naval Power and National Security: The Case for the Maritime Strategy', *International Security*, (Vol.11, No.2), Fall 1986, p.73.



Maritime strategy must consider the nuclear balance even during the conventional phase of the war. Our strategy must seek war termination leverage; maritime power may be the only source of such a leverage....

The Soviets place great weight on the nuclear correlation of forces, even during the time before nuclear weapons have been used. Maritime forces can influence that correlation, both by destroying Soviet ballistic missile submarines and by improving our own nuclear posture, through the deployment of carriers and Tomahawk platforms around the periphery of the Soviet Union. Some argue that such steps will lead to immediate escalation, but escalation solely as a result of actions at sea seems improbable, given the Soviet land orientation. Escalation in response to maritime pressure serves no useful purpose for the Soviets since their reserve forces would be degraded and the United States' retaliatory posture would be enhanced. Neither we nor the Soviets can rule out the possibility that escalation will occur, but aggressive use of maritime power can make escalation a less attractive option to the Soviets with the passing of every day.

The real issue, however, is not how the Maritime strategy is influenced by nuclear weapons, but the reverse; how maritime power can alter the nuclear equation. As our maritime campaign progresses, and as the nuclear option becomes less attractive, prolonging the war also becomes unattractive, since the Soviets cannot decouple Europe from the United States and the risk of escalation is always present. Maritime forces thus provide strong pressure for war termination that can come from nowhere else.<sup>9</sup>

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<sup>9</sup> Admiral James D. Watkins, 'The Maritime Strategy', pp.14, 17.

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Thus, as Secretary Lehman stated, though probably with some hyperbole, US SSNs would attack Soviet SSBNs 'in the first five minutes of the war'.<sup>10</sup>

#### (ii) Submarine Bases

Soviet submarine bases would also be subject to early attack. On 12 April 1978, the then CNO, Admiral James L. Holloway, testified:

Our plan would be as the first line of defense to strike the airbases from which the Backfire bombers fly and the submarine bases from which the nuclear-powered submarines operate.<sup>11</sup>

Given the avowed rationales of the maritime strategy, the submarine bases must rank as very high priority targets. Petropavlovsk would be particularly lucrative. As noted above, some 85 per cent of the Pacific Fleet SSBNs are normally sitting at Petropavlovsk in peacetime. Some 15 per cent to 20 per cent of these might be able to put to sea within 10-12 hours of an order, but that would still leave 65 to 70 per cent. Another 20 per cent to 25 per cent could probably depart within 48-72 hours, but that would still leave some 45 per cent in port. Any serious attempt to alter the strategic balance could not ignore these. Moreover, being in a relatively fixed and known location, they would require much less ASW resources and effort to locate and destroy than would hunting and killing a similar number of submarines dispersed throughout the Sea of Okhotsk.

Vladivostok, which is the headquarters of the Soviet Fleet, remains the second most important submarine base in the Soviet Far East. It is the homeport for a wide variety of submarines, including three or four *Delta*-class SSBNs, two *Yankee*-class SSBNs, and six *Golf II* diesel-powered ballistic missile submarines (equipped with three SS-

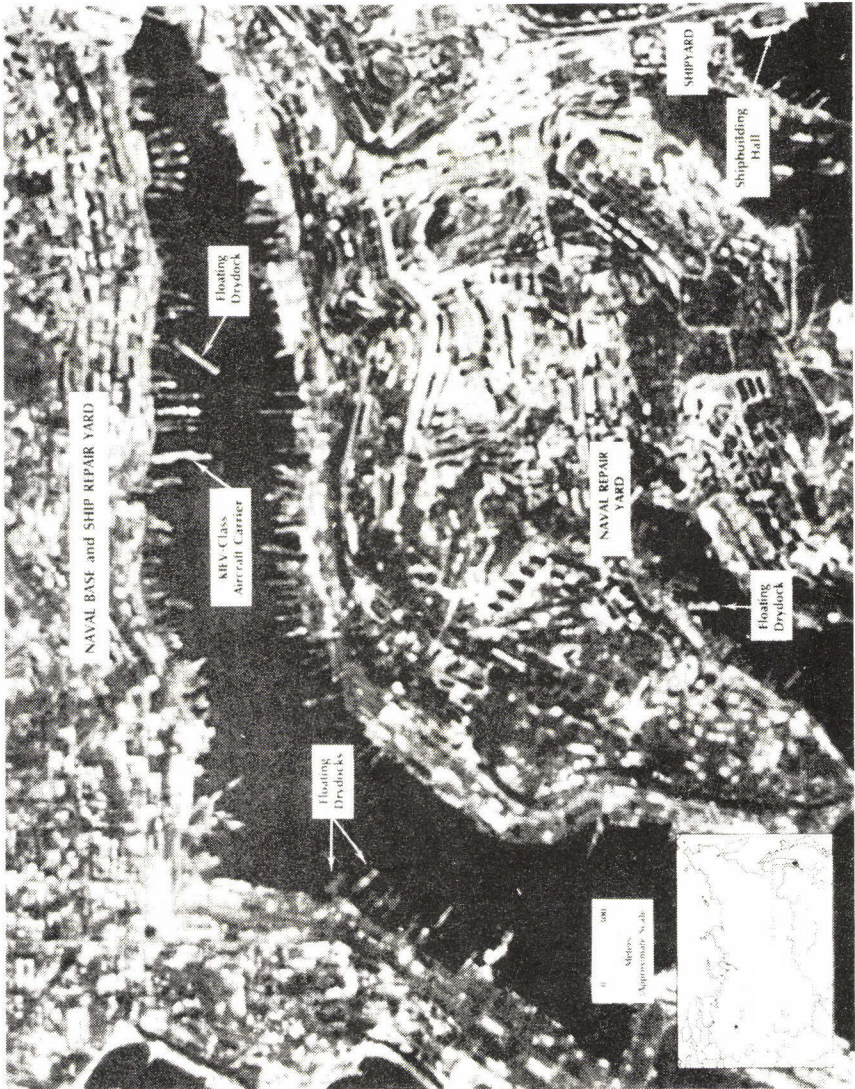
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<sup>10</sup> Cited in Melissa Healy, 'Lehman: We'll Sink Their Subs', *Defense Week*, 13 May 1985, p.18.

<sup>11</sup> US Congress, Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1979*, (U.S. Government Printing Office, Washington, D.C., 1978), Part 5, p.4321.



Figure 14  
Vladivostok Harbour, Headquarters of the Soviet Pacific Fleet



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N-5 SLBMs), as well as numerous SSNs and other attack submarines.<sup>12</sup> Other Soviet submarine bases in the Soviet Far East include Sovetskaya Gavan (the third main Pacific Fleet naval base), as well as Aleksandrovsk-Sakhalinsky, Korsakov, Magadan, Khufusk, Simushir Island, and Nakhodka.<sup>13</sup>

(iii) Other Soviet Naval Bases and Ports

On 8 March 1978, Vice Admiral James H. Doyle, the Deputy Chief of Naval Operations (Surface Warfare), testified that 'sea control entails the use of naval forces for a variety of tasks, including ... strikes against enemy bases'.<sup>14</sup> And Robert Komer observed in 1984 that 'the US Navy has long had contingency plans for multicarrier nonnuclear strikes against Soviet naval bases, but clearly these are now being more heavily stressed'.<sup>15</sup>

In addition to the submarine bases mentioned above, there are more than a dozen other naval bases and ports with significant support and repair facilities - including Petrovskaya, Anadyr,

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12 Derek da Cunha, 'The Growth of the Soviet Pacific Fleet's Submarine Force', *International Defense Review*, (2/1988), pp.127-131; and Thomas B. Cochran, William M. Arkin, Robert S. Norris and Jeffrey I. Sands, *Nuclear Weapons Databook, Volume IV: Soviet Nuclear Weapons*, pp.206-207.

13 William M. Arkin and Richard W. Fieldhouse, *Nuclear Battlefields: Global Links in the Arms Race*, (Ballinger, Cambridge, Massachusetts, 1985), Appendix B; Dora Alves, 'The Submarine's Role in Soviet Pacific Strategy', *Pacific Defence Reporter*, September 1984, p.10; Research Institute for Peace and Security, *Asian Security 1979*, (Research Institute for Peace and Security, Tokyo, 1979), pp.54-55; and Malcolm McIntosh, *Japan Re-armed*, (Frances Pinter, London, 1986), p.75.

14 US Congress, Senate Appropriations Committee, *Department of Defense Appropriations for Fiscal Year 1979*, Part 4, p.356.

15 Robert W. Komer, *Maritime Strategy or Coalition Defense?*, (Abt Books, Cambridge, Massachusetts, 1984), pp.60-61.



Komsomolsk-Na-Amur, Olga, Vladimir, Khabarovsk, Nikolayevsk-Na-Amur, etc.<sup>16</sup>

**(iv) Soviet Naval Aviation (AV-MF) Bases and Facilities**

As Admiral Watkins testified in June 1985, the principal rationale of the 'offensive anti-air warfare (AAW)' component of US strategy is 'to shoot the archer before he releases the arrows'.<sup>17</sup>

The most important AV-MF bases, as Admiral Holloway testified in April 1978, are those 'from which the Backfire bombers fly'.<sup>18</sup>

The primary operating base for the 50 AV-MF *Backfires* in the Pacific Fleet is Alekseyevka. On 14 March 1984, Secretary Lehman testified that the Navy plans 'to catch the Backfires on the ground'.<sup>19</sup> And Admiral Watkins testified the same day that:

In the Northwest Pacific our feeling is that at the very front end of a conflict, if we are swift enough on our feet we would move rapidly into an attack on [the Backfire base at] Alekseyevka, and we think we could get away with it, because we know what the Soviet real capability is....

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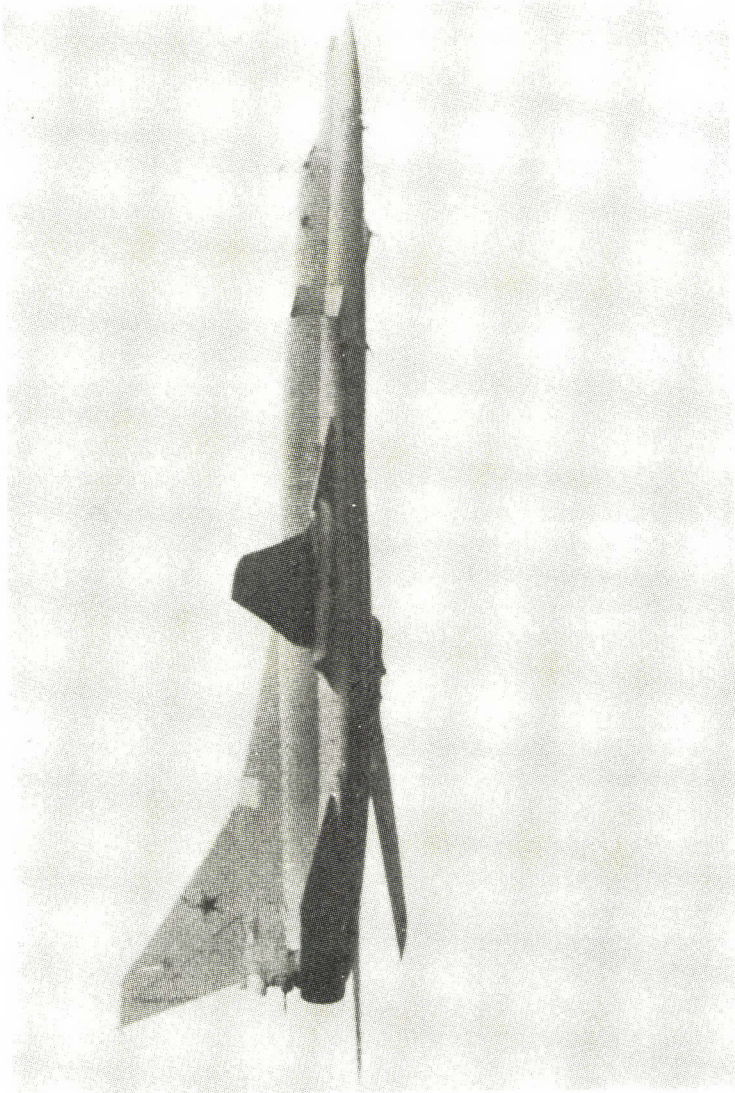
16 William M. Arkin and Richard W. Fieldhouse, *Nuclear Battlefields: Global Links in the Arms Race*, Appendix B; Dora Alves, 'The Submarine's Role in Soviet Pacific Strategy', *Pacific Defence Reporter*, September 1984, p.10; Research Institute for Peace and Security, *Asian Security 1979*, pp.54-55; and Malcolm McIntosh, *Japan Re-armed*, p.75.

17 House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.46.

18 Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1979*, Part 5, p.4321.

19 US Congress, Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, (U.S. Government Printing Office, Washington, D.C., 1984), Part 8, p.3875.

**Figure 15**  
**Tu-22M Backfire Bomber**  
**Flying Over the Sea of Japan in September 1985**



Source: Photograph taken by the Japan Air Self-Defense Force (JASDF).

We know where the weaknesses are up in Alekseyevka today. So we might put a carrier strike in there along with the Air Force. We know how to do that. We test that with the Air Force...[In 1983, for example,] we tested our ability with the Air Force to coordinate strikes at Petropavlovsk or Alekseyevka.<sup>20</sup>

According to Secretary Lehman,

The fact is that Soviet naval bomber bases [including Alekseyevka] are not hardened. They are revetted, but not hardened, quite lucrative targets for both carrier and ... land-based strikes.<sup>21</sup>

In addition to Alekseyevka, the AV-MF *Backfires* could also use the Soviet Long Range Aviation (DA) bases at Belaya (near Usolye Sibirskoye)<sup>22</sup> and on Sakhalin,<sup>23</sup> as well as fully equipped dispersal and staging bases at Svobodnyy, Anadyr, Komsomolsk-Na-Amur and Mys-Schmidta.<sup>24</sup>

The AV-MF also maintains 80 Tu-16 *Badger* C/G intermediate-range bombers for anti-shipping operations in the Pacific. (The *Badgers* carry either *Kipper* or *Kingfish* air-to-surface missiles, which are dual-capable with respect to conventional or 200 Kt nuclear warheads.) As described below, it also deploys some 30 Tu-142 *Bear* F and 20 Il-38 *May* antisubmarine warfare (ASW) aircraft in the Pacific; these aircraft carry, *inter alia*, conventional and/or nuclear torpedoes and depth bombs. These aircraft are based on Sakhalin and at Petropavlovsk, Korsakov, Sovetskaya Gavan, and Provideniya, with numerous dispersal and staging bases in the region.<sup>25</sup>

Some US defence planners have argued that nuclear weapons provide the most effective way of destroying the *Badger* and *Backfire*

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20 *Ibid.*, pp.3887-3888.

21 *Ibid.*, p.3875.

22 William M. Arkin and Richard W. Fieldhouse, *Nuclear Battlefields: Global Links in the Arms Race*, p.253.

23 Japan Defense Agency, *Defense of Japan 1987*, (Japan Defense Agency, Tokyo, 1988), p.33.

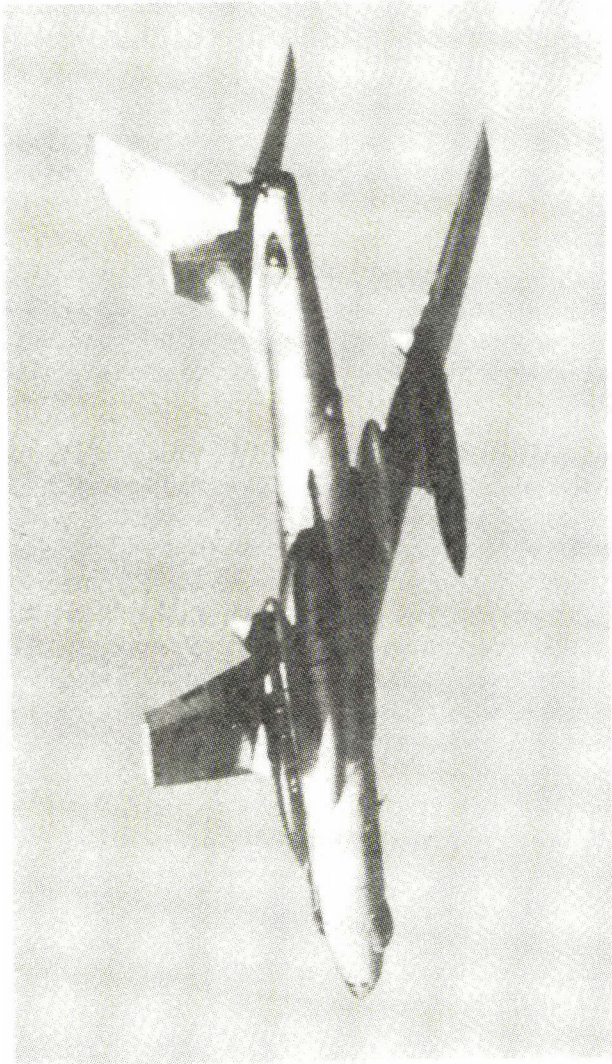
24 Arkin and Fieldhouse, *Nuclear Battlefields*, Appendix B.

25 *Ibid.*.



**Figure 16**

**Soviet Tu-16 *Badger* Medium-range Bomber, Loaded with Two *Kingfish* AS-6 Anti-ship Missiles, About 130 km NW of Shakotan Point in Hokkaido, February 1980**

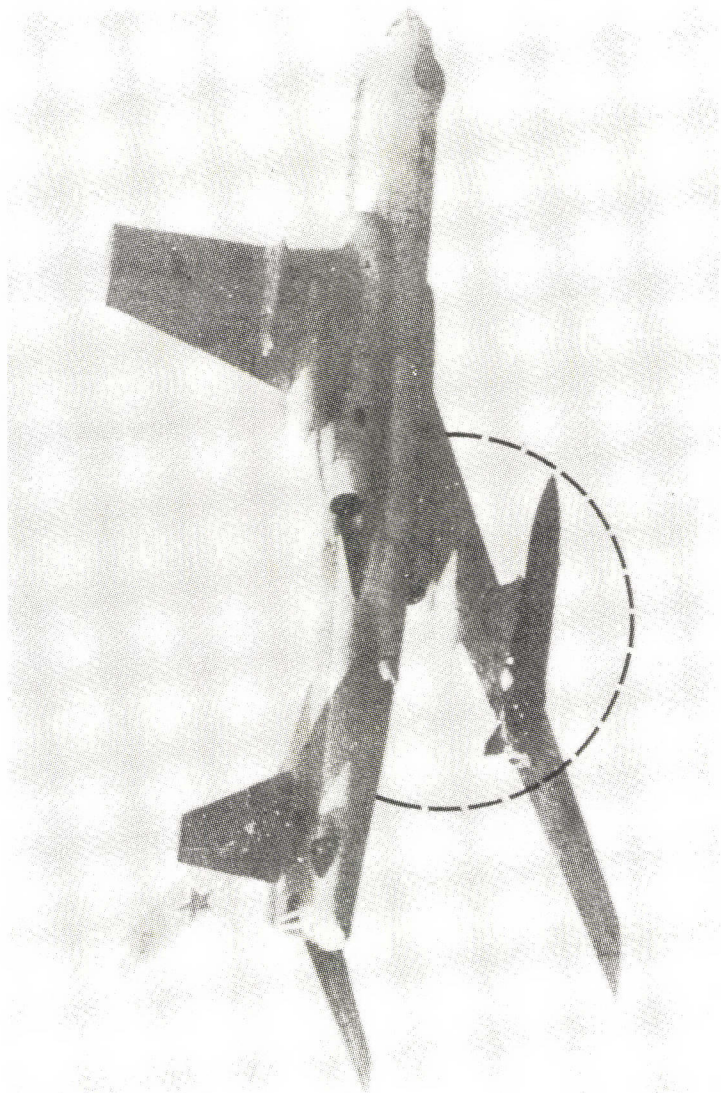


Source: Photograph taken by the Japan Air Self-Defense Force (JASDF), February 1980.



**Figure 17**

**Soviet Tu-16 *Badger* Medium-range Bomber Carrying Two *Kingfish* AS-6 Anti-ship Missiles, off the Noto Peninsula, December 1977.**



Source: Photograph taken by the Japan Air Self-Defense Force (JASDF), December 1977.

Figure 18

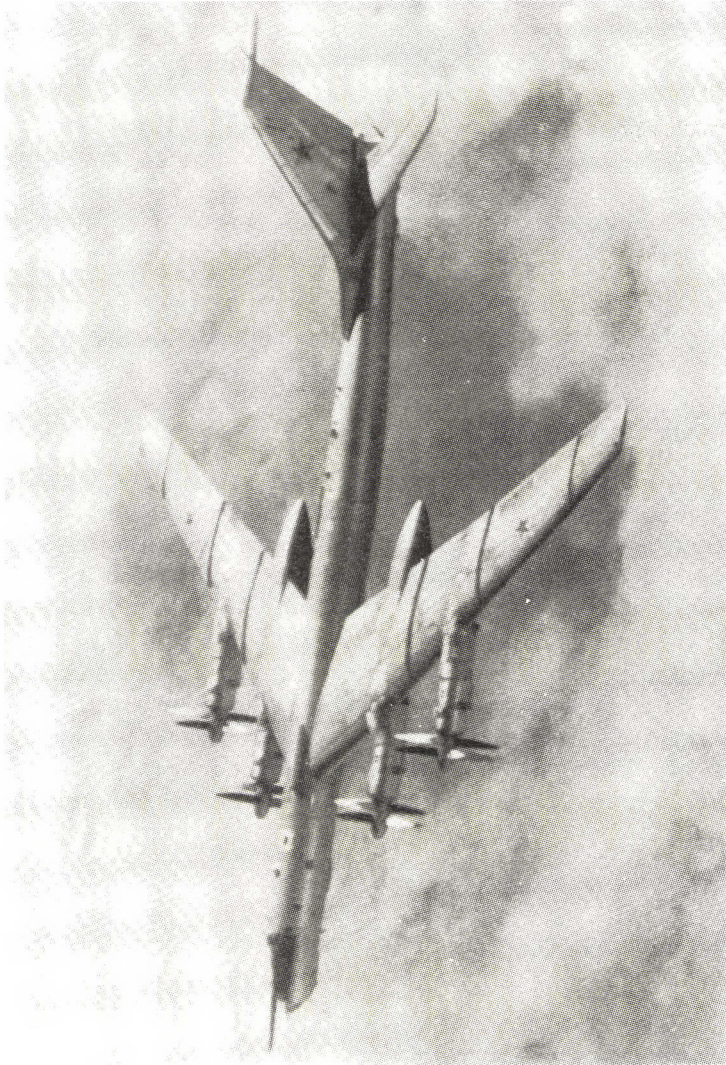
**A Kingfish AS-6 Anti-ship Cruise Missile on a Soviet Pacific Fleet  
Tu-16 Badger G Bomber**



Source: G. Jacobs, 'Soviet Pacific Fleet - Increased Firepower, Less Growth', *Jane's Soviet Intelligence Review*, (Vol.1, No.12), December 1989, p.534.



**Figure 19**  
**Soviet Tu-95 *Bear F* Model 3 Anti-submarine Warfare (ASW) and Maritime Reconnaissance Aircraft Photographed Over the Pacific in Late 1988**



Source: *Jane's Soviet Intelligence Review*, (Vol.2, No.2), February 1990, p.70.



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bases and supporting infrastructure. For example, Captain Linton F. Brooks, USN, and Franklin Miller, Director of Strategic Forces Policy in the Office of the Secretary of Defense, argued in 1988 that:

... [the US must have the capability to conduct nuclear] attacks on the infrastructure supporting the nuclear war at sea - especially operating bases for the most dangerous platforms, nuclear-armed Soviet Naval Aviation Badger and Backfire bombers. While striking such bases is militarily effective, it entails making high-risk, direct attacks on the Soviet homeland.... Our declared policy makes it clear that we are willing to accept these risks....

Nuclear strikes can deal with the air threat to the fleet in the most effective way of all: by destroying attacking bombers at their bases.<sup>26</sup>

#### (v) Soviet Air Defences

Attacks against Soviet air defence capabilities would be an essential element of US operations against Soviet AV-MF bases, naval bases and ports, and land-based early warning, ocean surveillance and command and control facilities. The air defence capabilities in the Far East are, however, extremely formidable. There are, for example, major deployments of interceptor aircraft at Petropavlovsk on Kamchatka Peninsula, Dolinsk-Sokol and Kolikovo on Sakhalin, and Tennei on Etorofu in the Kurile Islands; and there are surface-to-air missile (SAM) concentrations on Kamchatka Peninsula, at Yuzhno-Sakhalinsk, Dal'nyaya, Dolinsk-Sokol and Smirnykh on Sakhalin, as well as at numerous locations elsewhere in the Far East Military District.

#### (vi) Soviet Surface Ships

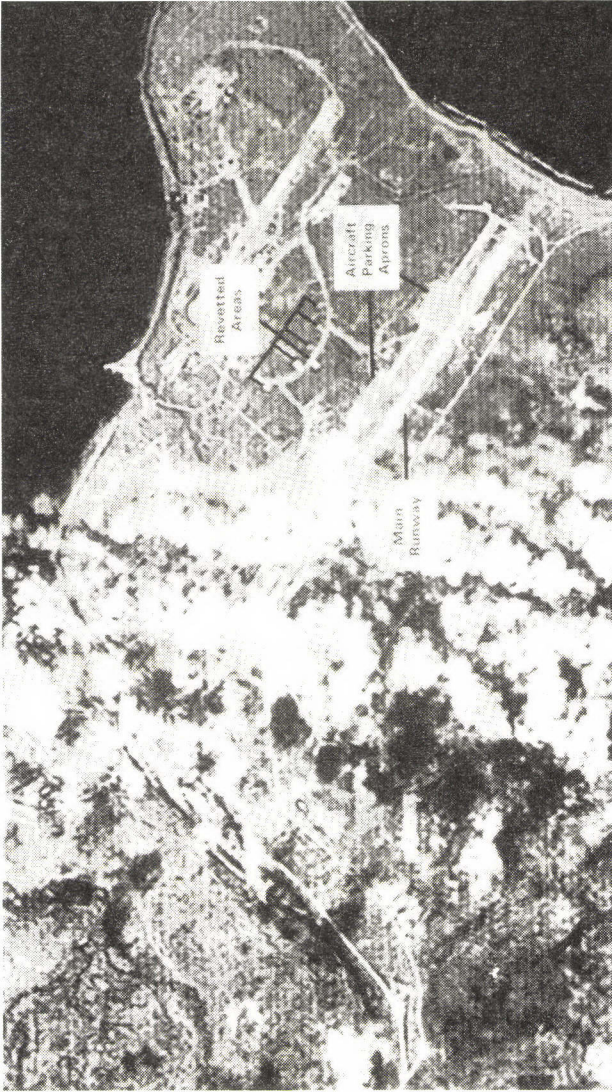
In June 1985, Admiral Watkins testified that:

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<sup>26</sup> Captain Linton F. Brooks, U.S. Navy, and Franklin C. Miller, 'Nuclear Weapons at Sea', *US Naval Institute Proceedings*, (Vol.114/8/1206), August 1988, pp.43-44.

Figure 20

Tennei Air Force Base on Etorofu Island in the Kuriles. (About 40 MiG-23 Flogger Fighter Aircraft are Currently Deployed at the Base.)



Source: US Department of Defense, *Soviet Military Power 1987*, (U.S. Government Printing Office, Washington, D.C., March 1987), p.68.



**Figure 21**

**Soviet Warships Passing Through the Tsushima Straits, April 1980**

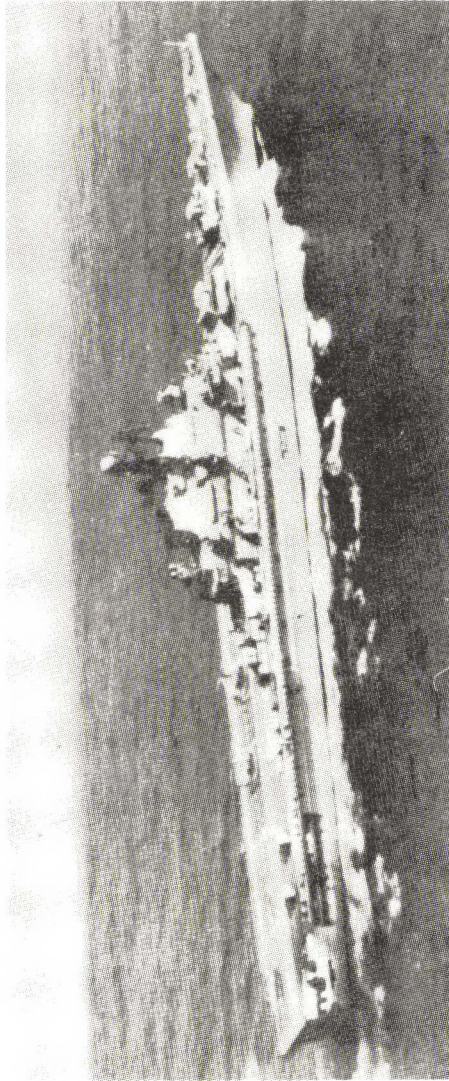


Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF), April 1980.



**Figure 22**

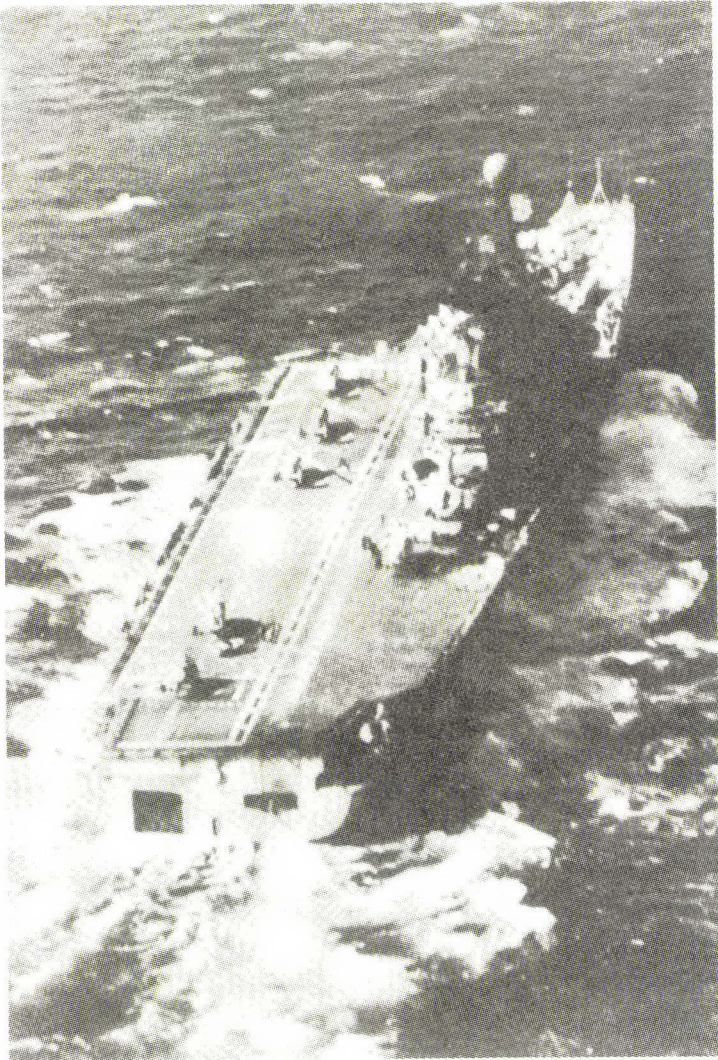
**The *Minsk*, a 40,000 Ton *Kiev*-class Aircraft Carrier, Became Operational with the Pacific Fleet in July 1979**



Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF), June 1979.

Figure 23

The *Novorossiysk*, a *Kiev*-class Aircraft Carrier Assigned to the Pacific Fleet in February 1944, Photographed off Okinoshima Island in March 1985



Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF), March 1985



**Figure 24**  
**The *Novorossiysk* Aircraft Carrier in the Pacific**

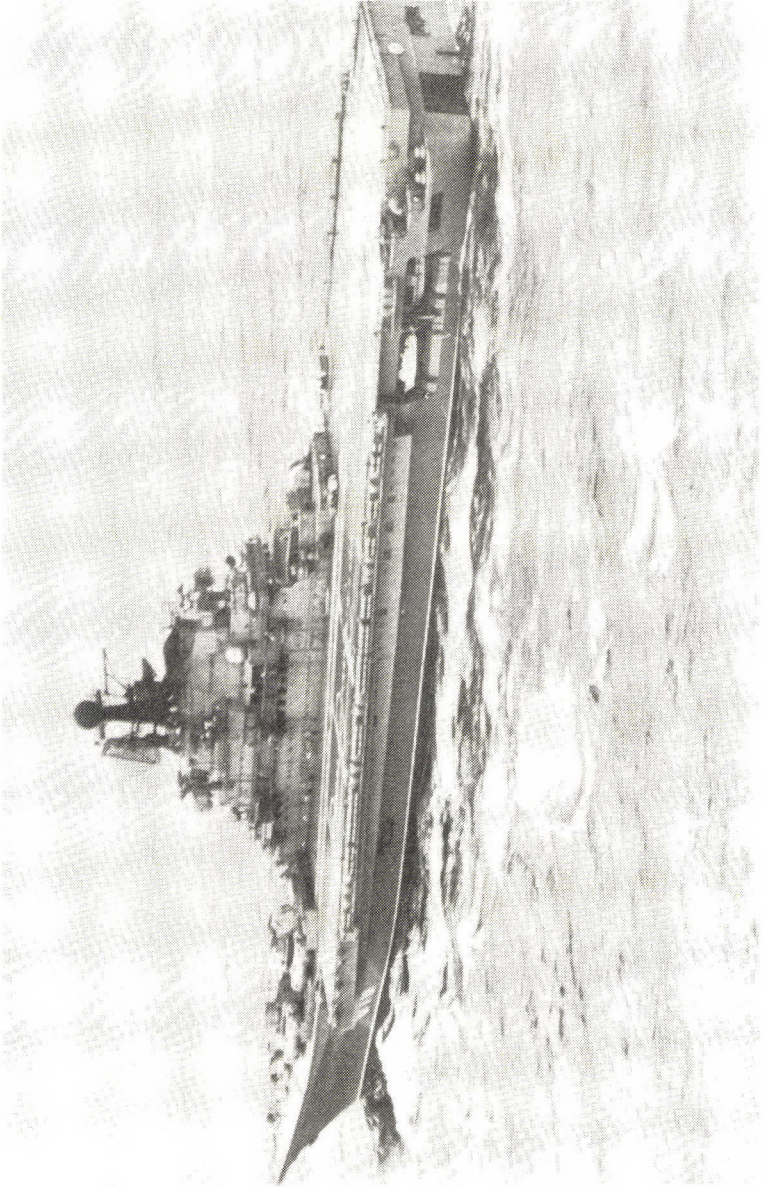
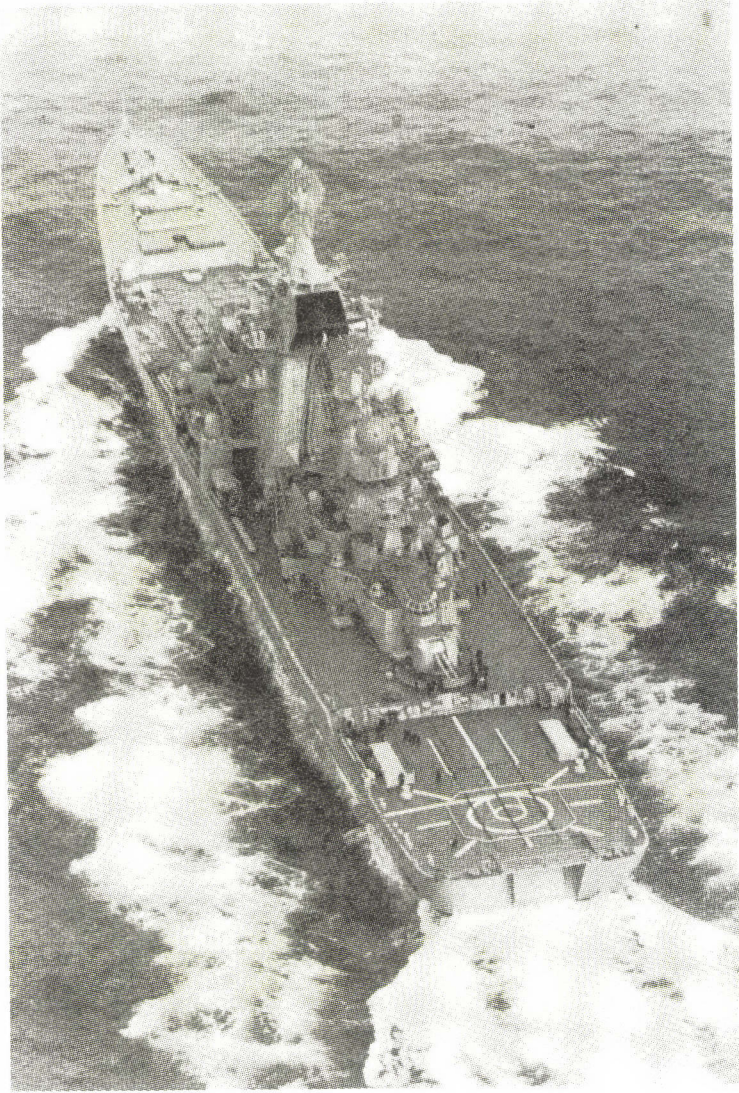




Figure 25

The *Frunze*, a *Kirov*-class Nuclear-powered Guided Missile Cruiser, Sailing North in the East China Sea

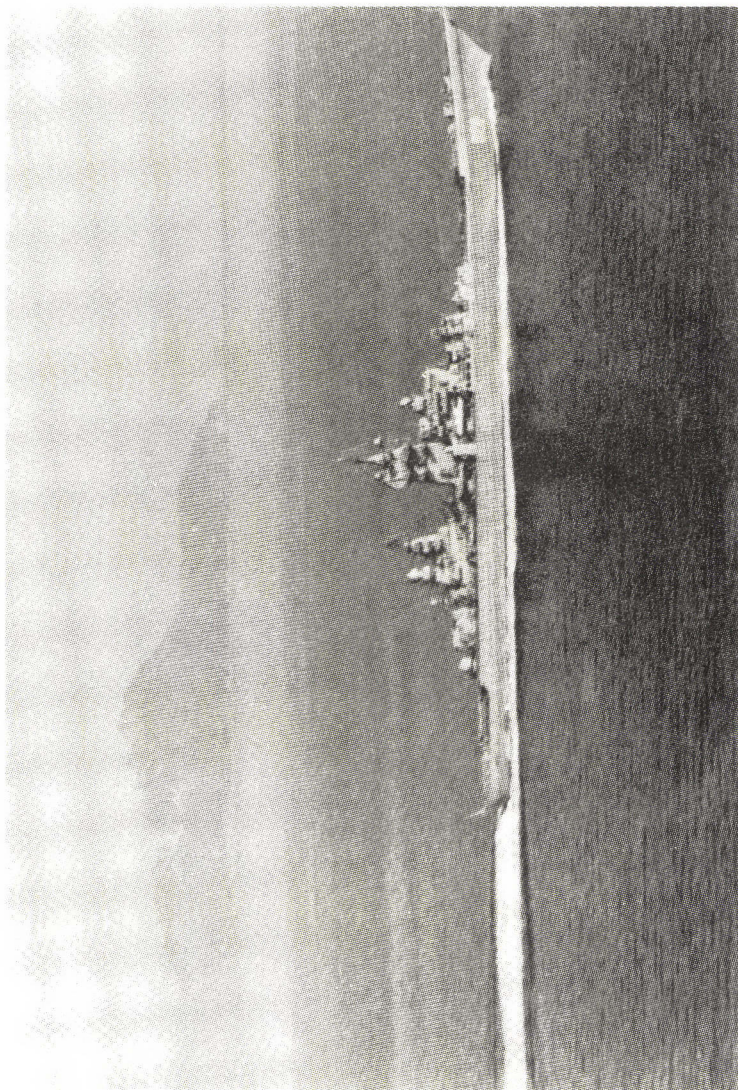


Source: Photograph taken by the Japan Maritime Self-Defense Force.



Figure 26

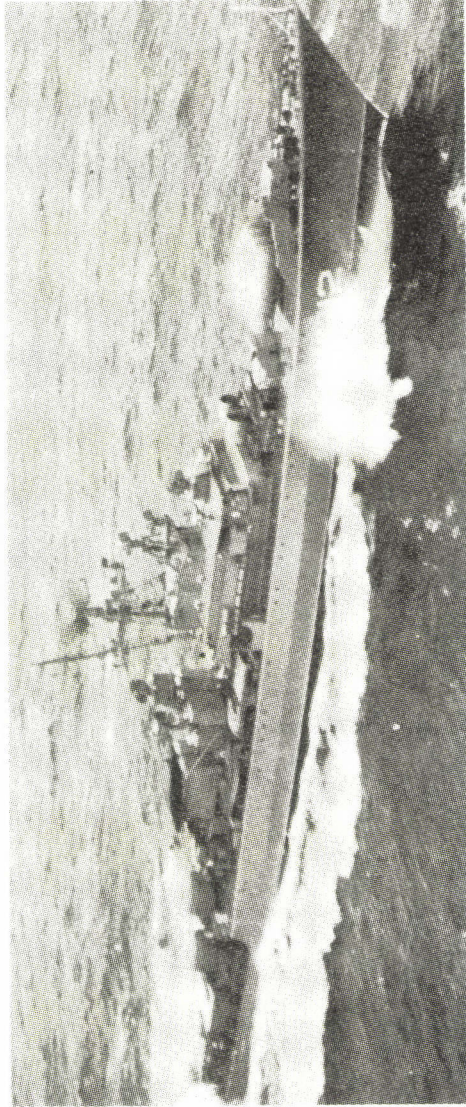
The *Frunze*, a *Kirov*-class Nuclear-powered guided Missile Cruiser,  
Passing Through the Tsugaru Straits in March 1987



Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF).

Figure 27

**Soviet *Krivak* II-class Anti-submarine Missile Frigate Cruising Past the Tsugaru Straits in March 1978**

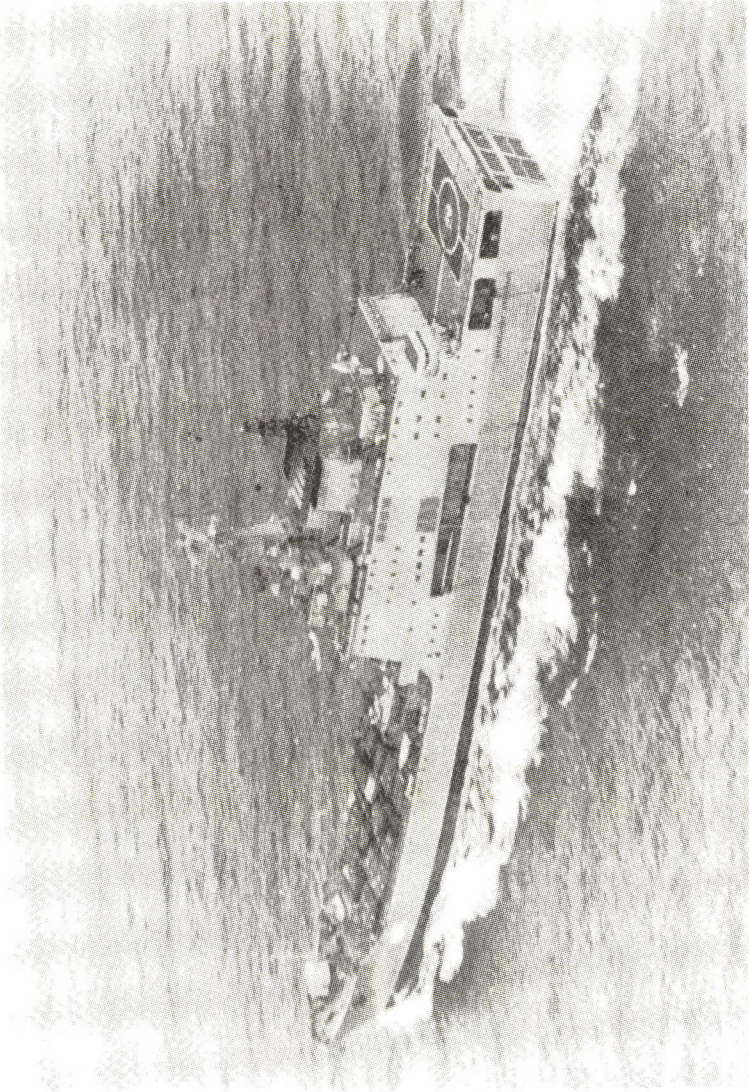


Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF), March 1978.



Figure 28

**The *Alexander Nikolaev*, an *Ivan Rogov*-class Amphibious Assault Ship, Assigned to the Pacific Fleet in April 1984**



Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF), April 1984.

**Figure 29**

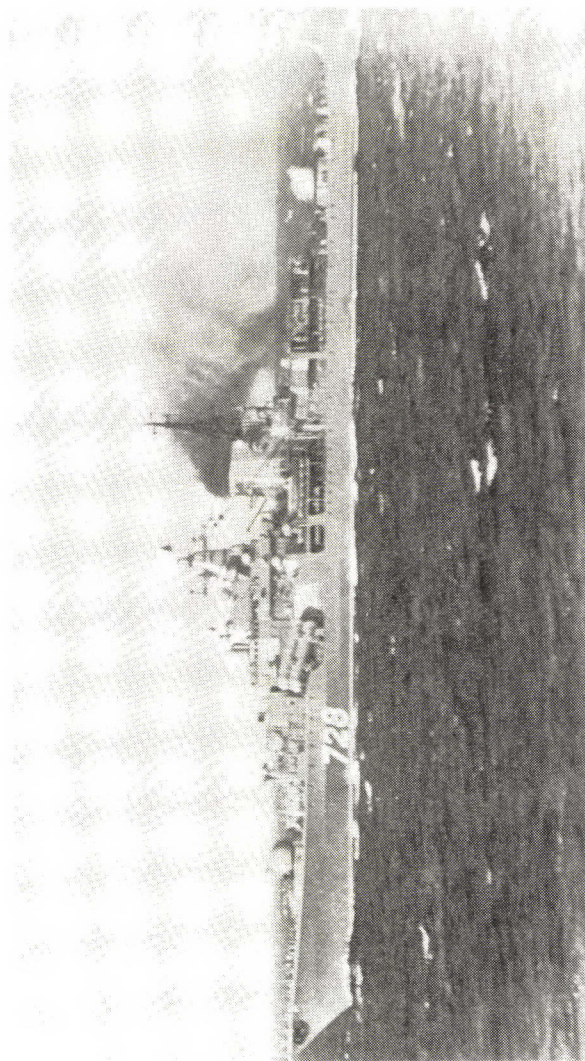
**The *Admiral Fokin*, a *Kynda*-class Guided Missile Cruiser in the Sea of Japan in April 1988**



Source: G. Jacobs, 'Soviet Pacific Fleet - Bases and Administration', *Jane's Soviet Intelligence Review*, (Vol.2, No.2), February 1990, p.65.



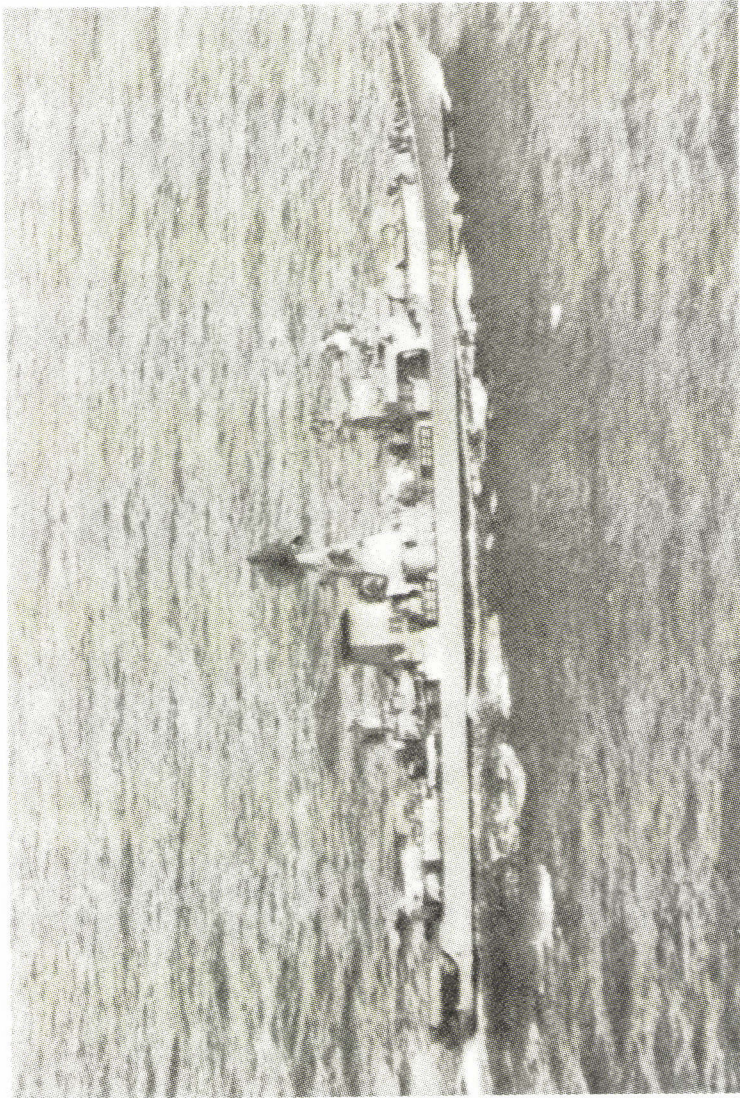
Figure 30  
The *Boyevoy*, a *Sovremenny*-class Guided Missile Destroyer, in the  
Sea of Japan



Source: G. Jacobs, 'Soviet Pacific Fleet - Increased Firepower Less Growth', *Jane's Soviet Intelligence Review*, (Vol.1, No.12), December 1989, p.535.



**Figure 31**  
**The *Petropavlovsk*, a *Kara*-class Cruiser, Became Operational with the Pacific Fleet in July 1979**



Source: Photograph taken by the Japan Maritime Self-Defense Force (JMSDF), June 1979.

We must eliminate enemy surface ships wherever they are at the outset of conflict.<sup>27</sup>

The Soviet surface fleet comprises a very large target set, amounting to some 35 major surface combatants and more than a hundred smaller vessels in the Pacific Fleet.<sup>28</sup> These include two *Kiev*-class aircraft carriers (the *Minsk* and the *Novorossiysk*), which carry a wide range of nuclear-capable weapons systems (including eight SS-N-12 *Sandbox* anti-ship cruise missiles, ASW rockets, and air-delivered weapons); one *Kirov*-class nuclear-powered cruiser (the *Frunze*), which carries 20 SS-N-19 *Shipwreck* anti-ship cruise missiles and helicopters equipped with ASW nuclear depth bombs; three *Kara*-class guided-missile cruisers with major ASW capabilities; etc.<sup>29</sup> Although these ships are generally less capable than their US counterparts, particularly with respect to their capability for extended conventional operations, the large numbers of major surface combatants involved and their extensive anti-ship and anti-submarine systems mean that they would have to be destroyed in support of the forward movement of US SSNs and CVBGs. It would be especially imperative to destroy them before they are authorised or prepared to employ their highly-capable nuclear weapons systems.

#### (vii) The Soviet Ocean Surveillance System (SOSS)

The Soviet Ocean Surveillance System (SOSS) is a 'collective heading' used by US naval intelligence analysts for all Soviet naval surveillance activities, including the surveillance assets and the command and control structure.<sup>30</sup> The principal collection components are ocean reconnaissance satellites, intelligence collection ships, surface warships, submarines and other undersea surveillance

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<sup>27</sup> House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.47.

<sup>28</sup> US Department of Defense, *Soviet Military Power*, 1989, p.15.

<sup>29</sup> Cochran, Arkin, Norris and Sands, *Nuclear Weapons Databook, Volume IV: Soviet Nuclear Weapons*, various entries.

<sup>30</sup> Commodore Thomas A. Brooks, U.S. Navy, 'Intelligence Collection', *US Naval Institute Proceedings*, (Vol.111/12/994), December 1985, pp.47-49; and Calland F. Carnes, 'Soviet Naval Intelligence: A Glimpse Inside', (Mimeo, no date), pp.25-26.



systems, naval reconnaissance aircraft, merchant and fishing ships, coastal defence forces, land-based signals intelligence (SIGINT) stations, and human intelligence (HUMINT). (See Figure 32).<sup>31</sup> Overall control of the SOSS lies in Moscow, where both the Chief Intelligence Directorate of the General Staff (GRU) at Khodinka and the Naval Intelligence Directorate (RU) of the Main Naval Staff at Soviet Navy headquarters on Koslovsk Boulevard have major responsibilities. This enables information from all SOSS and other relevant intelligence sources to be correlated and evaluated before dissemination to the Fleet Intelligence Departments (ROs) at the Headquarters of the Fleets (such as Vladivostok in the case of the Pacific Fleet) and thence to the relevant ships, submarines and aircraft. Many collection sources (such as the ocean surveillance satellites, the reconnaissance aircraft and the intelligence collection ships) also report directly to the Fleet ROs. In some instances, they are also able to report directly to selected weapons platforms.

The SOSS is a powerful 'force multiplier'. It is an integrated system which, if permitted to function undegraded, offers the potential of comprehensive, world-wide surveillance of all US and Allied naval movements. It provides information on ship types and names, positions and bearings, and battlegroup configurations. SOSS intelligence is not only used for strategic planning at the Moscow and Fleet levels, but also to provide over-the-horizon (OTH) targeting data for long-range anti-ship missile strikes - data which is critical to the effective employment of SS-N-3 *Shaddock*, SS-N-12 *Sandbox* and SS-N-19 *Shipwreck* ship- and submarine-based missiles as well as AS-4 *Kitchen* stand-off anti-ship missiles carried by the *Backfire*-B aircraft.<sup>32</sup> US Navy plans for negating the SOSS involve the destruction of the

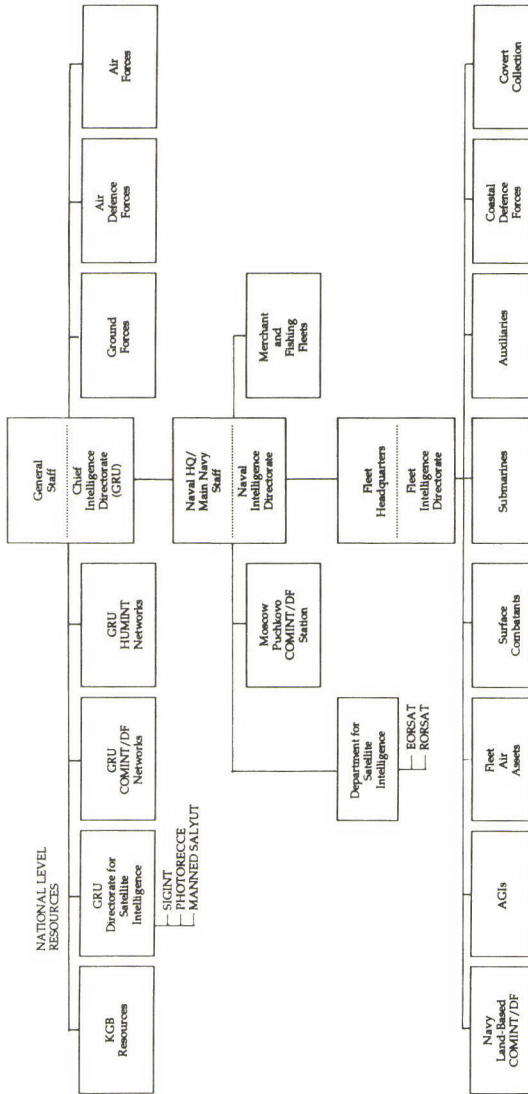
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31 US Naval Intelligence Support Center (NISC) for the Defense Intelligence Agency (DIA), *The Soviet Naval Threat Circa 2000*, (Defense Intelligence Agency, DST-1200F-597-85, Washington, D.C., 19 September 1985), p.C-1.

32 Milan Vego, 'Over the Horizon Detection and Targeting in the Soviet Navy', *Jane's Soviet Intelligence Review*, July 1989, pp.293-297.



Figure 32  
Soviet Ocean Surveillance Structure



Source: US Naval Intelligence Support Center (NISC), *The Soviet Naval Threat Circa 2000*, (Defense Intelligence Agency, DST-1200F-597-85, Washington, DC, September 1985), p.C-9.

60 *Provocative Plans: US Strategy for Maritime Conflict in the North Pacific* collection ships and aircraft as well as extensive use of electronic countermeasures (ECM).<sup>33</sup>

(a) Satellite systems (RORSATs and EORSATs):

The Soviet Union maintains two complementary satellite systems - Radar Ocean Reconnaissance satellites (RORSATs) and Electronic Intelligence (ELINT) Ocean Reconnaissance satellites (EORSATs) - which provide a world-wide ocean surveillance system and a capability for providing this data directly to certain Soviet naval forces and indirectly via ground processing centres and communications facilities to relevant combatants. The RORSATs and EORSATs are the most worrisome element of the SOSS. As Brigadier General Robert R. Rankine, USAF, Director of Space Systems and Command, Control and Communications, stated in 1987,

Both of these intelligence satellites [RORSATs and EORSATs] are dedicated to detecting the precise location of Alliance naval forces world-wide and providing real-time targeting data to the appropriate Soviet weapons platform.<sup>34</sup>

And as General John W. Piotrowski, Commander-in-Chief of the North American Defense Command (NORAD) stated in November 1988,

These satellites provide real-time targeting data directly to selected deployed forces. Utilizing this space-derived targeting data, Soviet antiship weapons could accurately engage U.S. forces at sea.<sup>35</sup>

Targeting data is transmitted from the EORSATs and RORSATs directly to those major surface combatants equipped with

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33 House Armed Services Committee, *The 600-Ship Navy and the Maritime Strategy*, p.49.

34 Brigadier General Robert R. Rankine, (USAF), 'The Military and Space ... Yesterday, Today and Tomorrow', *Royal United Services Institute [RUSI] Journal*, (Vol.132, No.2), June 1987, p.9.

35 General John L. Piotrowski, 'The Geostrategy of Space: The View from Space Command', *Vital Speeches of the Day*, (Vol. LV, No.6), January 1989, p.163.

*Punch Bowl* satellite communication (SATCOM) receivers.<sup>36</sup> These include the *Baku* aircraft carrier and the *Kirov* class cruisers, each of which have two *Punch Bowl* terminals.<sup>37</sup> In the case of the *Baku*, the *Punch Bowls* are associated with the SS-N-12 long-range anti-ship missile system.<sup>38</sup> Other Soviet surface ships use *Big Ball* terminals, and some submarines a *Pert Spring* SATCOM antenna, to receive processed EORSAT and RORSAT targeting data by relay from *Molniya* and *Raduga* communications satellites.<sup>39</sup>

According to US intelligence assessments, the RORSATs are probably able to detect ships the size of a destroyer when weather and sea conditions are good, but only ships the size of an aircraft carrier, or smaller ships in close proximity to each other when weather conditions are bad. In other words, RORSATs can probably identify aircraft carriers 90 per cent of the time; cruisers some 50 per cent; and frigates only 30 per cent. Real-time tracking and targeting data can be provided to users in the vicinity of the target or non-real-time data to central control points. Data is stored on tape for playback to headquarters whenever needed.<sup>40</sup>

The capability of the EORSATs has been assessed as follows:

The EORSAT is possibly the Soviet space-based system which is most capable of sea target detection.

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<sup>36</sup> Jim Bussert, 'Wartime Needs Give Direction to Soviet C3I Technology', *Defense Electronics*, May 1985, p.166; and 'Analysis of Changes to the Baku', *Jane's Defence Weekly*, 6 August 1988, p.225.

<sup>37</sup> *Ibid.*; and Neville H. Cross, 'Kirov and Frunze in Soviet Strategy', *Navy International*, September 1988, pp.431-432.

<sup>38</sup> 'Analysis of Changes to the Baku', *Jane's Defence Weekly*, 6 August 1988, p.225.

<sup>39</sup> *Ibid.*; Jim Bussert, 'Wartime Needs Give Direction to Soviet C3I Technology', *Defense Electronics*, May 1985, p.155; and Neville H. Cross, 'Kirov and Frunze in Soviet Strategy', *Navy International*, September 1988, pp.131-132.

<sup>40</sup> 'Soviet Satellites Over the Falklands', *Foreign Report*, (The Economist Newspaper Limited, London), 10 June 1982, pp.1-2; 'Pointers', *Foreign Report*, 13 January 1983, p.7; and Jack Anderson, 'GAO Audits Soviet Spy Satellites', *Washington Post*, 11 February 1985, p.C-12.



It provides targeting data of about 2-kilometer accuracy to anti-ship missile platforms (on other ships, helicopters, etc.).<sup>41</sup>

The operations of the RORSATs and EORSATs are nicely complementary. Not only does each type operate in pairs, but their orbital planes are carefully phased to allow them to operate cooperatively.<sup>42</sup> Information concerning the electromagnetic emanations monitored by the EORSATs together with radar images of the general size and shape of a vessel produced by the RORSATs should allow identification of the vessel.

Because of the direct threat to US naval vessels posed by EORSAT and RORSAT targeting data, the US has considered a range of countermeasures against these systems. The Joint Chiefs of Staff, for example, have identified the EORSATs and the RORSATs as the first priority target - and primary justification - for the anti-satellite (ASAT) system the Pentagon wishes to deploy.<sup>43</sup> However, ASAT development currently remains under Congressional constraint. Many US Navy officers are confident that electronic warfare activity can nullify the EORSATs and RORSATs. However, this is operationally difficult. Jamming the RORSATs would provide positional and other electronic order of battle (EOB) intelligence to the EORSATs. The US Navy has also practised emission control (EMCON) techniques and procedures - in effect operating in radio and radar silence - evidently with considerable success. When asked about the vulnerability of the fleet to RORSAT and EORSAT operations on 1 March 1983, Secretary Lehman testified:

We have been working this problem a long time.

And so, we have built our fleet tactics and our ECM [electronic counter-measures] and other equipment to deal with that....

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<sup>41</sup> *Ibid.*.

<sup>42</sup> Nicholas L. Johnson, 'Orbital Phasings of Soviet Ocean Surveillance Satellites', *Journal of Spacecraft*, (Vol.19, No.2), March-April 1982, p.113.

<sup>43</sup> Jack Anderson, 'GAO Audits Soviet Spy Satellites', *Washington Post*, 11 February 1985, p.C-12.

The results of the major fleet exercises we have run in the last two years give us some confidence that we know how to cope with those kind of [satellite intelligence] collectors, and that while we are obviously never going to hide in geographic areas where large task forces are, we are confident.<sup>44</sup>

During the *Ocean Safari* exercise in 1985, Soviet ocean surveillance satellites reportedly 'could not locate the *America* at sea'.<sup>45</sup> During the RIMPAC 86 exercise in July 1986, the carrier *Ranger* could not be located 'from the time it departed Southern California exercise areas until it steamed into Pearl Harbour some 14 days later'.<sup>46</sup> And during a covert exercise in the Aleutians in August 1986, the *Carl Vinson* was able to get into position to strike targets in Siberia without Soviet surveillance.<sup>47</sup> There is a vast difference, however, between operating with EMCON in exercise or single sortie situations and large-scale, rapid movement against a surging Soviet Pacific Fleet.

The most effective way of nullifying the EORSAT and RORSAT systems is to attack the ground control stations and alternative ground reception terminals, together with the associated processing centres and communications facilities. This would deny the EORSAT and RORSAT data to Soviet submarines and surface combatants without the ability to receive data directly from the satellites, and after three or four days without ground support the satellites themselves would progressively degrade.

(b) Reconnaissance aircraft:

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<sup>44</sup> US Congress, House Committee on Appropriations, *Department of Defense Appropriations for 1984*, (U.S. Government Printing Office, Washington, D.C., 1983), Part 2, p.631.

<sup>45</sup> See Ola Tulander, *Cold Water Politics: The Maritime Strategy and Geopolitics of the Northern Front*, (Peace Research Institute, Oslo, and Sage Publications, London, 1989), p.94.

<sup>46</sup> Rear Admiral I.W. Knox (RAN), quoted in 'How to Make Carriers Vanish', *Journal of Commerce*, 20 August 1986, p.22B.

<sup>47</sup> See Sheldon Simon, *The Future of Asian-Pacific Security Collaboration*, (Lexington Books, Lexington, Massachusetts, 1988), p.13.

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The Soviet Navy maintains an extensive range of maritime reconnaissance and anti-submarine warfare (ASW) aircraft for searching for and tracking US and Allied ships and submarines, and for providing targeting data for strikes against these vessels. There are some 130 of these aircraft in the Pacific Fleet - including some 25 Tu-95 *Bear D* maritime surveillance and ELINT aircraft, 25 Tu-16 *Badger* maritime reconnaissance and ELINT aircraft, 30 Be-12 *Mail* maritime reconnaissance and ASW aircraft, 30 Tu-142 *Bear F* ASW aircraft, and 20 Il-38 *May* ASW aircraft.<sup>48</sup>

The *Bears* are the most capable component of this force, with long range and endurance and sophisticated electronic sensor equipments. The *Bear D* has a large *Short Horn* undernose radar, a large *Big Bulge* underbelly surface search radar, various ELINT antennas, and a Video Data Link (VDL) for transmitting target data directly to missile-launching units on board aircraft, surface ship and submarine launch platforms.<sup>49</sup> The *Bear F* ASW variant has less radar and ELINT capability than the *Bear D*s, but have two store bays in the fuselage for expendable sonobuoys, torpedoes and nuclear depth charges.<sup>50</sup> From a main operating base near Vladivostok, the *Bears* conduct long-range surveillance operations around Japan and across North Korea to Okinawa and down to Vietnam. A subsidiary detachment of four *Bear D*s and four *Bear F*s at Cam Ranh Bay in

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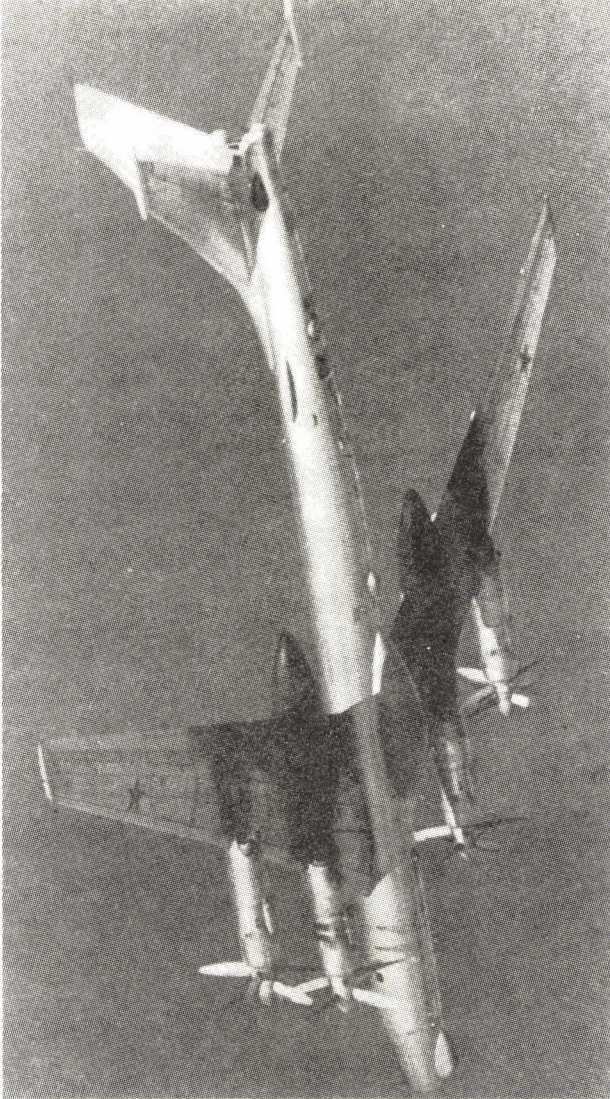
<sup>48</sup> Information provided by Mr Derek da Cunha, Department of International Relations, Australian National University, Canberra, September 1989.

<sup>49</sup> Normal Polmar (ed.), *Soviet Naval Developments*, (The Nautical and Aviation Publishing Company of America, Annapolis, Maryland, Second Edition, 1981), p.124; Normal Polmar, *Guide to the Soviet Navy*, (Naval Institute Press, Annapolis, Maryland, Fourth Edition, 1986), p.390; and John W.R. Taylor (ed.), *Jane's All The World's Aircraft 1986-87*, (Jane's Publishing Company Limited, London, 1986), p.165.

<sup>50</sup> *Ibid.*.



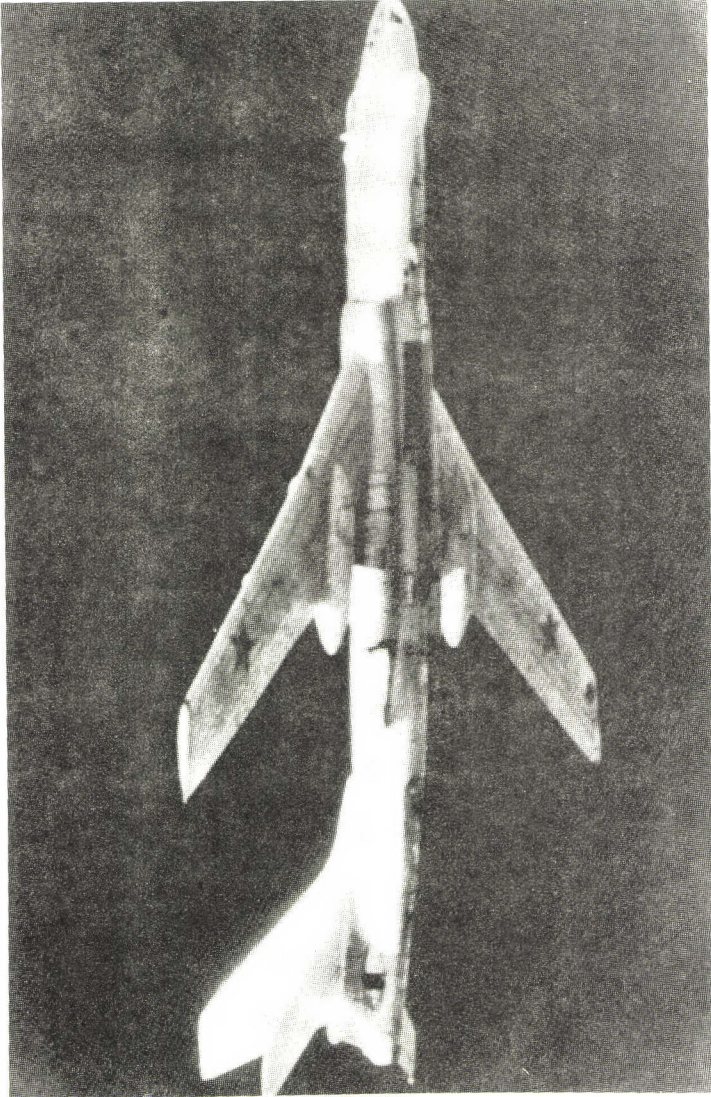
**Figure 33**  
**Soviet Tu-95 *Bear-D* Long-range Electronic Reconnaissance Aircraft**  
**Flying South Over the Tsushima Straits in February 1979**



Source: Photograph taken by the Japan Air Self-Defense Force (JASDF), February 1979.

**Figure 34**

**Tu-16 *Badger*-J Electronic Warfare Aircraft Invading Japanese  
Airspace in December 1987**

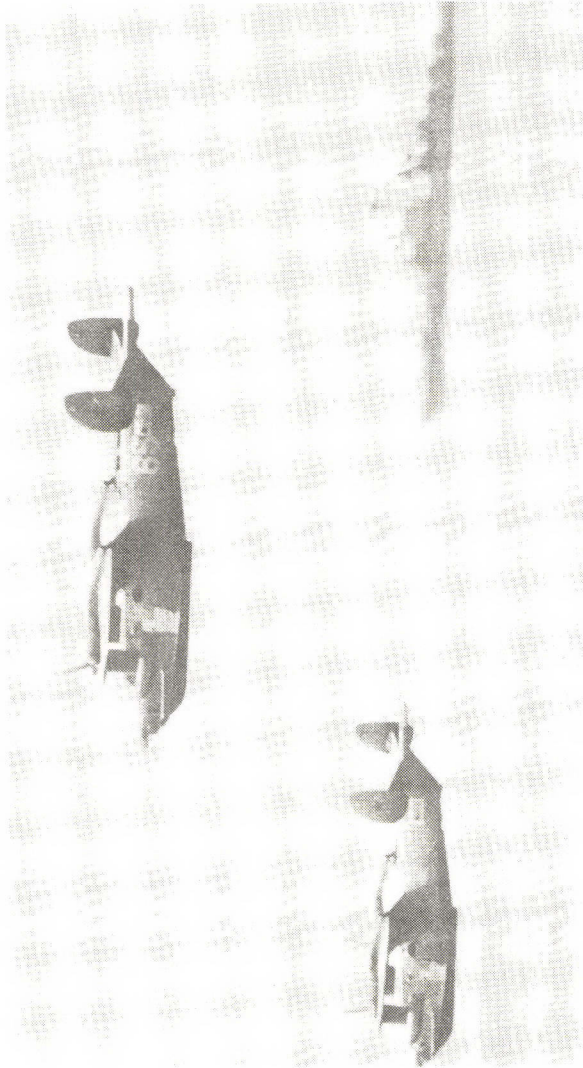


Source: Photograph taken by the Japan Air Self-Defense Force (JASDF), December 1987.



**Figure 35**

**Soviet *Be-12 Mail* Anti-submarine and Maritime Patrol Aircraft in the North Pacific**



Source: G. Jacobs, 'Soviet Pacific Fleet - Increased Firepower, Less Growth', *Jane's Soviet Intelligence Review*, (Vol.1, No.12), December 1989, p.533.



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Vietnam conducts surveillance operations over a wide area of the South China Sea.<sup>51</sup>

The Tu-16 *Badger* intermediate-range maritime reconnaissance, ELINT and anti-shipping aircraft have a large *Puff Ball* undernose radome, various other radars and ELINT antennas, and various air-to-surface winged standoff missiles. The B-12 *Mail* maritime reconnaissance and ASW aircraft carry an elongated radome on the nose, a magnetic anomaly detector (MAD) boom mounted in the tail, and an extensive suite of expendable sonobuoys, torpedoes, mines and nuclear depth bombs. The Il-38 *May* ASW aircraft carry a *Wet Eye* surface search radar, a MAD antenna, expendable sonobuoys and non-acoustic sensors, mines, and conventional and/or nuclear torpedoes and depth bombs.

(c) Intelligence collection ships:

The Soviet Navy maintains a large fleet of SIGINT collection ships, formally known as AGIs (Auxiliary General Intelligence), some 20 of which are based with the Pacific Fleet. There are several classes of these AGIs, some of which were originally designed for other purposes and then modified for SIGINT collection and some of which were purpose-built for this role.<sup>52</sup>

The *Vishnya*, *Balzam* and *Primorye* AGIs were designed specifically for SIGINT collection. A *Vishnya*-class AGI (SSV-208) was seen for the first time in the western Pacific in September 1988, some 400 km northwest of Okinawa.<sup>53</sup> The most notable feature of the *Balzams* is two large, spherical radomes, which house antennas for the interception of satellite communications. The three main masts and

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51 Desmond Ball, *Soviet Signals Intelligence (SIGINT): Listening to ASEAN*, (Working Paper No.188, Strategic and Defence Studies Centre, Australian National University, Canberra, September 1989), pp.28, 31-32.

52 Desmond Ball, *Soviet Signals Intelligence (SIGINT)*, (Canberra Papers on Strategy and Defence No.47, Strategic and Defence Studies Centre, Australian National University, Canberra, 1989), Chapter 6.

53 G. Jacobs, 'Soviet Navy AGIs', *Jane's Soviet Intelligence Review*, (Vol.1, No.7), July 1989, p.323.

the small mast forward of the bridge bristle with passive antennas, including several different types of direction-finding (DF) systems. The large displacement (5,000 tons) provides considerable space for equipment for on-board data-processing and signals analysis. Two *Balzam*-class vessels (SSV-80 and SSV-493) are assigned to the Pacific Fleet.<sup>54</sup> The *Primorye*-class ships were the first to be custom-built for SIGINT collection and analysis. Each ship is 'a huge floating intelligence station', linked by elaborate communications systems to sensors on smaller ships, on aircraft and on satellites. The interiors contain extensive SIGINT processing and analysis equipment, the product of which is transmitted back to Moscow and the headquarters of the Fleets by a secure satellite data link.<sup>55</sup> The *Primorye*-class AGIs based in the Pacific include the *Primorye* itself (SSV-465) and the *Selmon Zabaykalye* (SSV-464), which typically operates either off Hawaii or along the US Pacific coast.<sup>56</sup>

Other Soviet AGIs based in the Pacific include the *Gavriil Sarychev* SSV-468 and *Semen Chelyushkin* SSV-469 of the *Nikolay Zubov*-class; the *Gidrofon* and others of the *Okean*-class; and several *Moma*-class vessels. Some two to four AGIs (generally of the *Moma* and/or *Okean* classes) operate out of Cam Ranh Bay.

All Soviet naval combatants are also equipped with extensive SIGINT capabilities. These typically include crossed loop HF-DF antennas used to find the bearing of hostile radio transmissions, as well as other electronic support measures (ESM) systems.

In addition, numerous Soviet merchant and fishing vessels are equipped with SIGINT systems as part of the SOSS.

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<sup>54</sup> *Ibid.*, pp.321-322; and 'Latest Soviet Intelligence Ship Sighted in South China Sea', *Defense Electronics*, September 1985, p.17.

<sup>55</sup> Captain John Moore (ed.), *Jane's Fighting Ships 1983-84*, (Jane's Publishing Company Limited, London, 1983), p.552; and Ray Bonds (ed.), *The Soviet War Machine*, (Salamander Books Ltd., London, 1980), p.136.

<sup>56</sup> 'Two Soviet Spy Ships Spotted Off West Coast', *The Tribune* (San Diego), 21 August 1984, p.A-14; 'Soviet Spy Ship Seen Off Coast', *The San Diego Union*, 22 August 1984, p.A-13; and 'Navy Coolly Eyes Soviet Spyships Off West Coast', *New York Post*, 22 August 1984, p.16.



**Figure 36**

**The Vega SSV-474, a Moma-class AGI, off Honolulu in 1988**

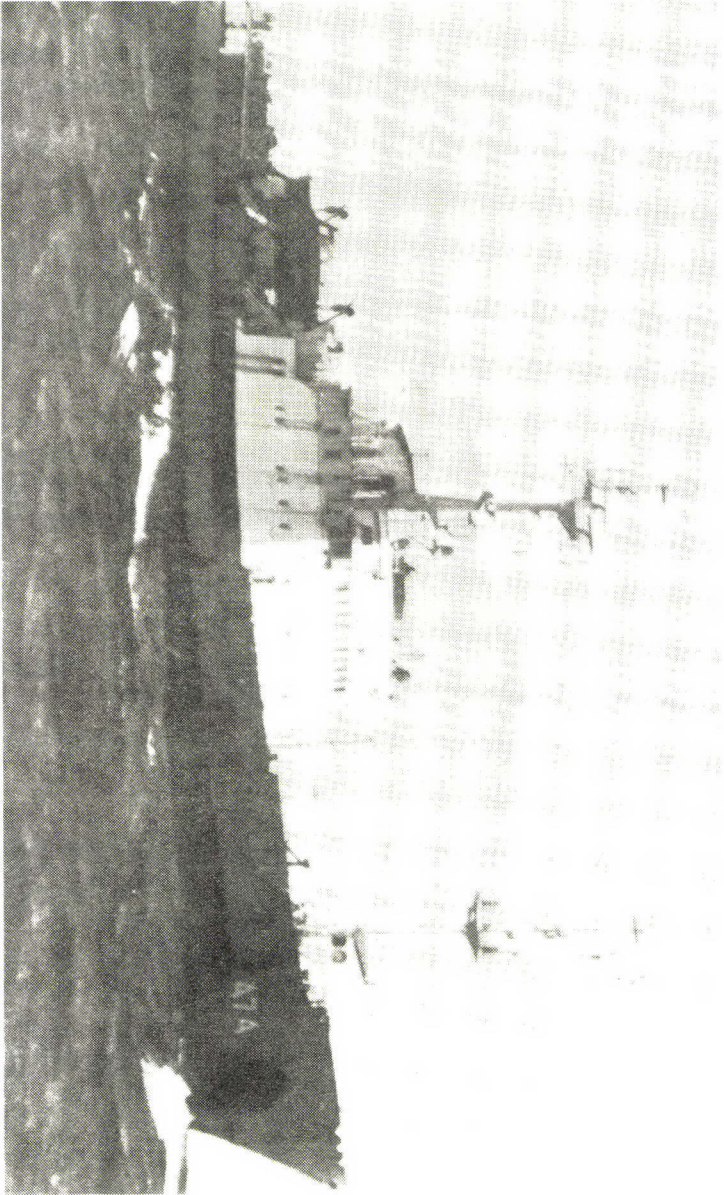
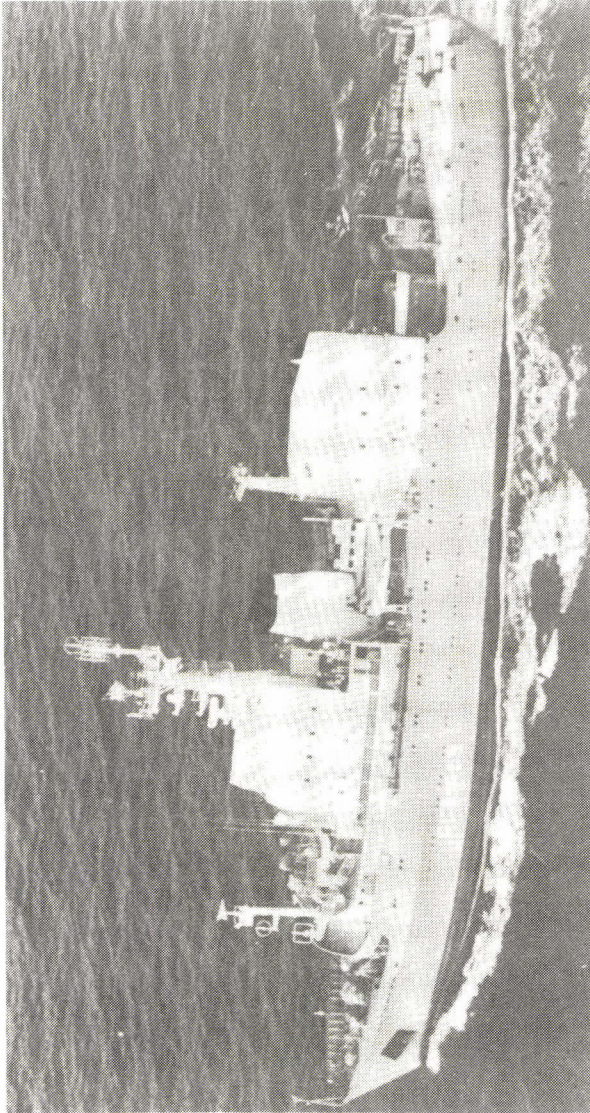




Figure 37

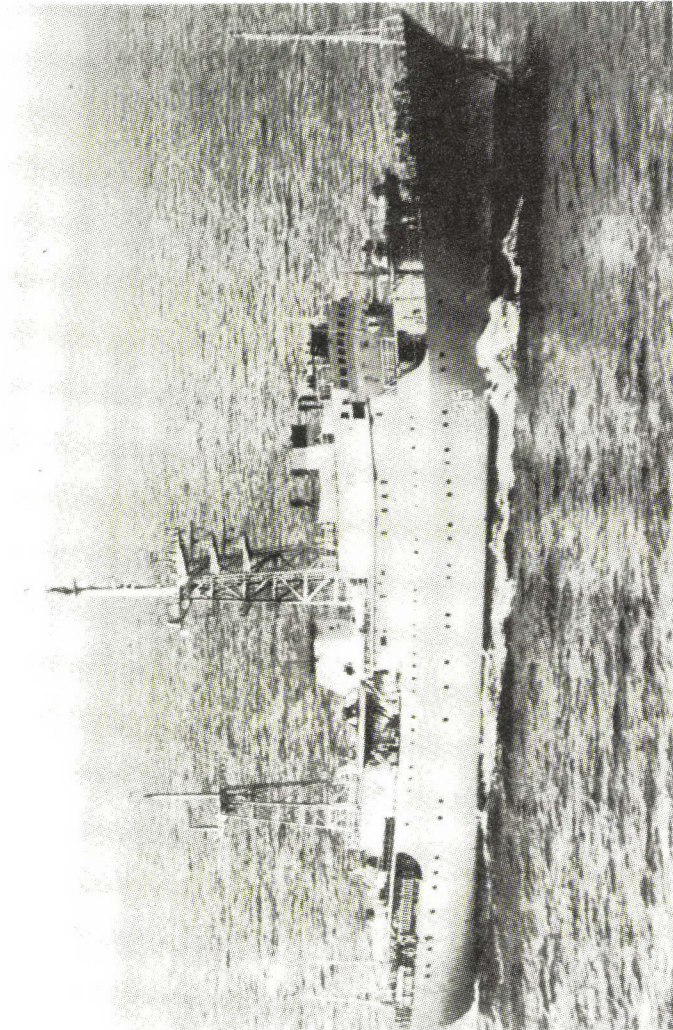
The *Primorye* SSV-465, one of two *Primorye*-class AGIs operating in the North Pacific



Source: U.S. Department of Defense.

Figure 38

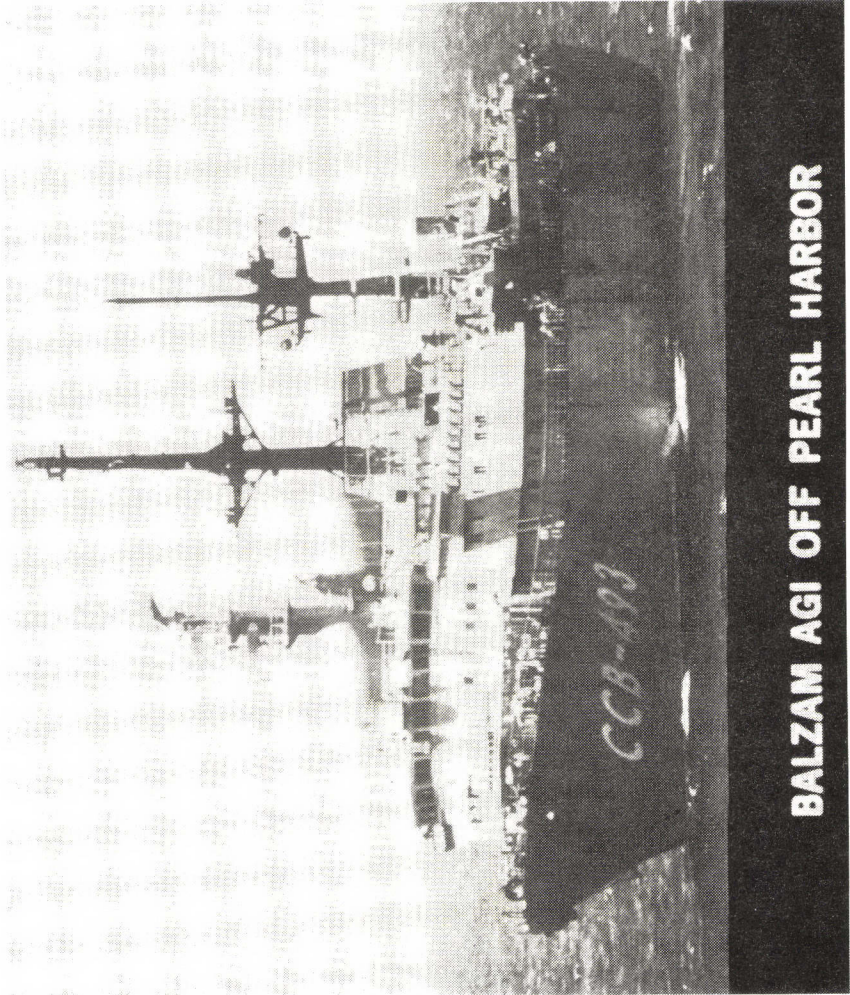
SSV-535, a *Vishnaya*-class AGI, Photographed in the Sea of Japan in March 1989, when Monitoring the Joint US-South Korea *Team Spirit '89* Exercise on the Korean Peninsula. Two *Vishnayas* Operate with the Pacific Fleet



Source: G. Jacobs, 'Newest AGIs - The *Vishnaya* Class', *Jane's Soviet Intelligence Review*, (Vol.2, No.3), March 1990, p.101.



**Figure 39**  
**The SSV-493, a *Balzam*-class AGI Based in the Pacific,**  
**Photographed off Pearl Harbor in 1988**



**BALZAM AGI OFF PEARL HARBOR**



These intelligence collection ships perform several missions which would be important during times of crises and conflict in the Pacific. In the first place, they monitor activity in US naval bases - such as Guam, Pearl Harbor, San Diego, Subic Bay in the Philippines, and Yokohama in Japan. They report on the readiness status of particular ships in port, as well as on departure times and movements. Second, they conduct 'gatekeeping' operations, monitoring the entrances into critical seas and other maritime choke points. In the Pacific, patrol stations for SIGINT-equipped vessels include the La Perouse, Tsugara and Tsushima Straits linking the Sea of Japan to the Pacific Ocean,<sup>57</sup> and the Straits of Southeast Asia.<sup>58</sup>

Third, the collection ships monitor US and Allied naval communications to discern patterns of signal traffic, movement of ships and, hopefully, the intentions of naval planners and commanders. Particular attention is accorded the naval communications stations at San Diego; Oahu, Hawaii; San Miguel in the Philippines; North West Cape in Australia; and Kamiseya, Yokosuka, Totsuka, Yokota and Yosami in Japan.

And, fourth, the collection ships attempt to trail all major fleet movements and report their location and type of activity. For example, during the second annual Northern Pacific exercise in November 1987, conducted around Adak in the Aleutians, a *Balzam*-class AGI shadowed the US task force for four days, and on 16 November closed to within 1,200 yards of the *Enterprise*.<sup>59</sup> (During the Vietnam War, a continuous AGI deployment was maintained in the Gulf of Tonkin from 1965 to 1973, the primary purpose of which was to

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<sup>57</sup> Charles C. Petersen, 'Trends in Soviet Naval Operations', in Bradford Dismukes and James M. McConnell (eds.), *Soviet Naval Diplomacy*, (Pergamon Press, New York, 1979), p.54-55.

<sup>58</sup> Seth Mydans, 'Two Battle Fleets Play at Cat and Mouse', *Sydney Morning Herald*, 30 October 1985, p.12.

<sup>59</sup> Dean Fosdick, 'Soviets Shadow Navy Drill in Aleutians', *Washington Times*, 18 November 1987, p.3; Tom Burgess, 'Navy Jet Feints at USSR Told', *San Diego Union*, 22 November 1987, p.A-1; and Tom Burgess, 'Armed U.S. Navy Bombers Fly Mock Raids at Soviet Base', *Washington Times*, 24 November 1987, p.1.

monitor US aircraft carrier operations and US Air Force bomber missions against North Vietnam.<sup>60</sup>)

In a conflict in the North Pacific, AGIs and other 'tattletales' would have a two-fold mission - first, to report the location and identity of US and Allied ships for targeting purposes; and, second, to warn Soviet command authorities of impending strikes from these ships.

The collection ships are naturally equipped with extensive communications systems for transmission of intelligence to Moscow, the Fleet Headquarters, and selected naval combatants. Some communication involves HF radio, but the more recent AGIs rely primarily on SATCOM systems - including the *Molniya* elliptical-orbit communications satellites and *Volna* transponders on the *Raduga* and *Gorizont* geostationary communications satellites.<sup>61</sup> (The *Volna* ground station responsible for support of Pacific and Indian Ocean traffic is located near Nakhodka.<sup>62</sup>)

US naval commanders being trailed by AGIs and other 'tattletales' would have few alternatives. They could attempt to lose the trailer by practising EMCON or, alternatively, to prevent them reporting by jamming their transmission systems, but the success of these measures would be problematic. Destruction of the SATCOM ground stations and other communication links would only be effective if a large segment of the telecommunications and radio networks in the Far East was effaced. The most attractive course is simply to sink the AGIs and other 'tattletales'.

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<sup>60</sup> Peterson, 'Trends in Soviet Naval Operations', p.52; and General T.R. Milton (USAF), 'Crime and Nonpunishment', *Air Force Magazine*, November 1983, p.38. See also the photograph of the *Gidrofon* (Okean-class) AGI underway with the *Coral Sea* in the Gulf of Tonkin in 1969, in Desmond Ball, *Soviet Signals Intelligence (SIGINT)*, p.105.

<sup>61</sup> Philip J. Klass, 'Conflicting Interests Hinder Plans for Avsat System', *Aviation Week and Space Technology*, 28 April 1986, pp.133-141.

<sup>62</sup> Desmond Ball, *Soviet Signals Intelligence (SIGINT)*, pp.49-52.

(d) Navy land-based COMINT and DF stations and SIGINT processing centres:

There are several dozen Soviet SIGINT stations in the Far East, including several large stations maintained by the Navy primarily for ocean surveillance purposes.

The largest and most sophisticated Soviet ground-based SIGINT system is the large (130-yard diameter) *Krug* circularly-disposed *Wullenweber* array, which is used for high frequency (HF) interception and direction finding (DF) out to ranges of about 10,000 km. The system covers the frequency band from 6 through 30 MHz, and its performance characteristics are broadly comparable to those of the US Navy AN/FRD-10 HF DF system. The DF accuracy of the *Krug* is typically better than one-half of a degree.<sup>63</sup>

There are two particularly significant SIGINT stations in the Soviet Far East. One, maintained by a GRU OSNAZ unit, is located at Chita, which is both the headquarters of the Transbaykal Military District and a theatre headquarters combining control of the Soviet Pacific Fleet with the land and tactical air forces of both the Transbaykal and Far East Military Districts. This SIGINT complex is reportedly capable of monitoring communications traffic 'throughout Northeast Asia'.<sup>64</sup> The second is operated by the Fifth Division of the Fleet Intelligence Department (RO) at the headquarters of the Pacific Fleet in Vladivostok. This station also provides extensive coverage of signals throughout Northeast Asia, but it has a particular role with respect to monitoring communications facilities in Japan.<sup>65</sup> (Yuri Nosenko, who served at the station in 1950-1952, and who defected to

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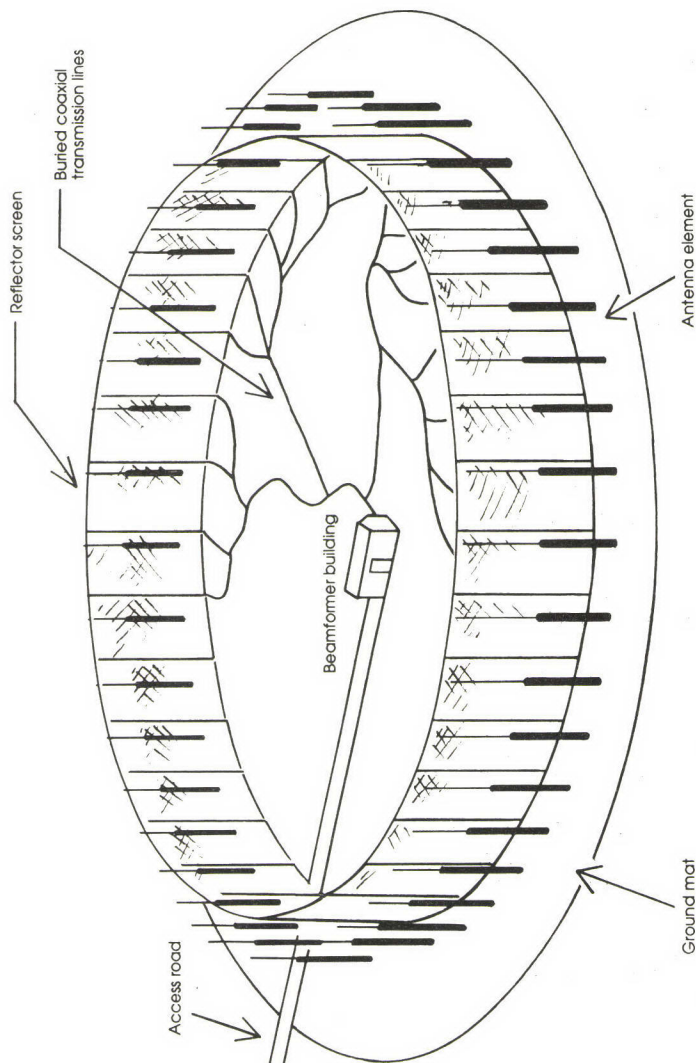
<sup>63</sup> *Ibid.*, pp.24-25.

<sup>64</sup> Colonel William V. Kennedy, *Intelligence Warfare: Penetrating the Secret World of Today's Advanced Technology Conflict*, (Crescent Books, New York, 1983), pp.48-49.

<sup>65</sup> Desmond Ball, *Soviet Signals Intelligence (SIGINT)*, p.21.



Figure 40  
Krug HF DF Ocean Surveillance SIGINT System, Several of Which  
are Located in the Soviet Far East



Source: Desmond Ball, *Soviet Signals Intelligence (SIGINT)*, (Canberra Papers on Strategy and Defence No.47, Strategic and Defence Studies Centre, Australian National University, Canberra, 1989), p.25.

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the US in 1964, worked particularly on signals concerning US aircraft  
operations from bases in Japan.<sup>66</sup>)

Other Soviet SIGINT stations in the Far East are located at  
Ostrov Ratmanova (Big Diomede) in the Bering Strait, and at Magadan  
and Khufusk.<sup>67</sup>

(e) Assessing the SOSS:

The strength of the SOSS derives from its extraordinary  
comprehensiveness and integration. It is an extremely effective, all-  
source system. Intelligence is rapidly transmitted, frequently in real-  
time, to the Naval Headquarters in Moscow and the Pacific Fleet  
Headquarters in Vladivostok. It is disseminated equally rapidly to the  
relevant naval combatants and supporting air forces. The SOSS is an  
extremely large target set, consisting of hundreds of collection and  
transmission sites. Many of its elements are redundant. It is not only a  
powerful 'force multiplier', but it would also be difficult to disrupt.  
Limited or selective attacks against it would be to little military effect.  
Negating the SOSS in the North Pacific would require the destruction  
of hundreds of collection platforms and transmission facilities.

(viii) Soviet C<sup>3</sup> Facilities

The Soviet command, control and communications (C<sup>3</sup>)  
system in the Far East consists of a very extensive and complex  
network of headquarters, early warning stations, certain elements of  
the SOSS, and numerous communications facilities.

The principal Soviet headquarters for the conduct of maritime  
operations in the North Pacific are the headquarters of the Far East  
Theatre of Military Operations (TVD) at Chita, which is also the

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<sup>66</sup> Gordon Brook-Shepherd, *The Storm Birds: Soviet Post-War Defectors*, (Weidenfeld and Nicolson, London, 1988), p.181; and US Congress, House of Representatives, Select Committee on Assassinations, *Investigation of the Assassination of President John F. Kennedy*, (U.S. Government Printing Office, Washington, D.C., 1979), Appendix, Volume XII, p.479.

<sup>67</sup> Malcolm McIntosh, *Japan Re-armed*, p.75.

headquarters of the Transbaykal Military District and which (as noted above) also combines control of the Pacific Fleet with the land and tactical air forces of both the Transbaykal and Far East Military Districts; the headquarters of the Pacific Fleet in Vladivostok; the headquarters of the Pacific Fleet Naval Aviation at Sovetskaya Gavan; and the headquarters of the Far East Military District at Khabarovsk. In addition, the KGB maintains a major regional headquarters at Nakhodka, and there are numerous Army headquarters, Air Army headquarters, and Air Defence District headquarters in the region.

The principal early warning facilities include a *Hen House* ballistic missile early warning radar at Angarsk, near Lake Baikal, which provides some coverage over the Sea of Okhotsk and the Sea of Japan;<sup>68</sup> the *Hen Roost* SLBM early warning radar at Komsomolsk-Na-Amur;<sup>69</sup> and over-the-horizon (OTH) radars at Nikolayevsk-Na-Amur and near Vladivostok, which can detect and track aircraft and ship movements over the northwest Pacific.<sup>70</sup> In addition, there are numerous air defence radar stations throughout the region, including on Kamchatka Peninsula, Sakhalin, and the Kuriles.

Soviet communications facilities in the Far East include SATCOM, HF, LF, VLF, and terrestrial and undersea cable systems. There are more than two dozen major satellite ground stations, including four stations in the primary Soviet satellite tracking and control network (Irkutsk, Ussuriysk, Petropavlovsk and Ulan Ude); six large *Orbita* SATCOM ground stations (Khabarovsk, Magadan, Severo Kurilsk, Ulan Ude, Chita, and on Sakhalin); three major *Molniya* stations (Komsomolsk-Na-Amur, Magadan and Petropavlovsk); six ground control stations for the *Gorizont* and *Raduga* communications satellites (Khabarovsk, Komsomolsk-Na-Amur, Chita, Ulan Ude,

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68 See Thomas K. Longstreth, John E. Pike and John B. Rhineland, *The Impact of U.S. and Soviet Ballistic Missile Defense Programs on the ABM Treaty*, (National Campaign to Save the ABM Treaty, Washington, D.C., March 1985), p.70.

69 William M. Arkin and Richard Fieldhouse, *Nuclear Battlefields*, p.256.

70 US Department of Defense, *Soviet Military Power, 1988: An Assessment of the Threat*, (Department of Defense, Washington, D.C., April 1988), p.82; and Japan Defense Agency, *Defense of Japan 1988*, (Japan Defense Agency, Tokyo, 1988), p.39.



Irkutsk and Iakustsk); and the *Volna* ground station near Nakhodka. There are also three LF radio stations (Kholmsk, Severo Kurilsk and Vladivostok), and eight VLF stations which provide coverage across the Sea of Japan, the Sea of Okhotsk, and the north Pacific Ocean.

The Soviet C<sup>3</sup> target set has been accorded particular attention by US Navy planners. For one thing, despite its criticality, it is a relatively small target set, consisting of less than 100 sites. Second, it is regarded as a lucrative target set because of the perceived centralisation of the Soviet command and control structure. As Admiral Murphy testified on 10 December 1975,

Their command and control is highly centralized.... If we put enough effort into countering the Soviet ocean surveillance system and their command and control system, we could find that this could be the Achilles Heel of the fighting forces of the Soviet Union in a war.... There are so many things that we can do to make their system less perfect.<sup>71</sup>

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<sup>71</sup> US Congress, Senate Armed Services Committee, *Fiscal Year 1977 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths*, (U.S. Government Printing Office, Washington, D.C., 1976), Part 4, p.1971.

## CHAPTER FIVE

# ESCALATION AND THE USE OF NUCLEAR WEAPONS

Two conclusions emerge from this review of US operational concepts and the Soviet target set: First, the operations could take place very fast indeed, with large-scale surges occurring during crises, and major attacks at the very outset of conflict, with continuing intensive operations through the first several days following the outbreak of conflict. Second, the scale of these operations is vast - in terms of both the forces involved and the geographical theatre. These are the ingredients of rapid escalation.

### (i) US objectives and the scale of the Soviet target set:

The target set in the Soviet Far East which is relevant to conventional conflict in the north Pacific is extremely large. The Soviet Pacific Fleet itself has more than 100 submarines, including 26 SSBNs, some 50 nuclear-powered attack submarines and some 30 conventional attack submarines; some 35 major surface combatants, including two aircraft carriers, a dozen cruisers and a dozen destroyers; some 130 AV-MF *Backfire* and *Badger* bombers designed for anti-shipping operations; and some 165 maritime reconnaissance and anti-submarine aircraft. There are more than a hundred important naval bases and ports, AV-MF bases and facilities, and air defence sites. There are a couple of hundred SOSS facilities. And there are several dozen C<sup>3</sup> facilities in the region. In sum, it is a target set of some 750 platforms, bases and supporting facilities.

The US strategy for attacking these targets involves the coordinated employment of all available submarine, surface and air forces, together with electronic warfare (EW) systems. The principal US 'offensive strike' forces include more than 40 SSNs, half a dozen carriers and several dozen cruisers and destroyers, and several hundred aircraft based in Japan, Alaska, and aboard the carriers.

The employment of these US forces against the complete notional Soviet target set, when considered in terms of the compressed time lines likely to obtain, would produce the largest, most intensive and most destructive maritime conflict in history. There are, of course, a range of quite conceivable scenarios which do not involve either the

employment of all US forces or attacks against the whole of the Soviet target set. For example, the US National Command Authorities (NCA) could well intervene to constrain execution of the maritime strategy in the interests of escalation control. The Soviet leadership, on the other hand, could concede the issues in contention before the full target set was destroyed or US capabilities exhausted. Or careful and informed planning might enable the US to achieve its objectives through the destruction of certain critical elements of the Soviet target set (such as C<sup>3</sup> nodes) rather than more comprehensive attacks. More likely, perhaps, is the possibility that the conflict would escalate so rapidly that not all US forces could be mobilised and brought to bear before the conventional phase was transcended.

The pressures to mobilise all available US forces and bring them to bear against the whole Soviet target set in the Soviet Far East as rapidly as possible are likely to prove compelling.

The structure of Soviet target set is such that limited and selective attacks would have little military effect. Such attacks might well serve to demonstrate US resolve and to distract Soviet attention and capabilities from other theatres, but unless they are rapidly followed by more widespread destructive operations their principal effect could well be to enable the Soviet forces to themselves mobilise and disperse and hence increase the threat to the US forces. The elements of the SOSS are so redundant and so well integrated with the Soviet forces that the system could only be nullified by very comprehensive attacks. There are so many naval bases and ports and air bases and facilities capable of supporting and providing succour to dispersed Soviet naval and air forces that US operations must simultaneously attempt to destroy the Soviet forces before they can disperse and destroy or at least disrupt the numerous dispersal and support sites. The Soviet air defence network is itself extremely formidable, and would have to be destroyed or negated before US air attacks could effectively proceed against most other elements of the Soviet target set.





The task is so large and demanding that it may well be beyond the conventional capabilities of the US maritime forces. The attainment of US objectives might only be possible with the use of nuclear weapons to complement the conventional attacks.

**(ii) Inadvertance:**

Even in the absence of compelling strategic reasons to employ nuclear weapons to achieve US objectives, the operational environment of large-scale maritime conflict in the north Pacific is unfortunately very conducive to inadvertent escalation, including the inadvertent use of nuclear weapons.

The maritime environment is generally characterised by poorer communications connectivity, poorer intelligence, and greater autonomy of local commanders than pertain in the land environment. This is especially the case with underwater operations, where communications between attack submarines and higher authorities may be as infrequent as once every twelve hours.<sup>1</sup>

These general characteristics of the maritime environment are compounded by the key operational features of the US maritime strategy. The rapid forward movement of numerous attack submarines, major surface combatants and air forces is not only bound to increase the rate of accidents but will also significantly enhance the dimensions of uncertainty.

Early forward movement of US forces would be required to hold Soviet SSBNs hostage in their bases at Vladivostok and Petropavlovsk, to catch Soviet SSNs before they are 'flushed' from their bases, to destroy the AV-MF bases and support facilities in order to impair the ability of Soviet naval aviation to attack the US fleet, to prevent Soviet forces from destroying or incapacitating US ASW and other ocean surveillance sensors, and to relieve the pressure on other theatres of conflict. As Admiral Watkins testified on 14 March 1985, the US Navy would hope to surge its SSNs from Hawaii and San Diego some '30 days or so, 10 days, before a conflict starts'.<sup>2</sup> However,

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1 Bruce Blair, 'Arms Control Implications of Anti-Submarine Warfare (ASW) Programs', pp.116-117.

2 Senate Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, Part 8, p.3888.

while this is the US Navy's preferred operational move, it would necessarily have to be undertaken before the intentions and plans of the Soviet Union are known. Indeed, it is unlikely that the Soviets themselves would have formalised any firm intentions some 10 or 30 days before a conflict was joined; Soviet intentions and plans are only likely to be clarified after the US decision to surge its Pacific forces.

Some conflict is likely even as the US forces proceed to the northwest Pacific. As the US SSNs and major surface combatants depart from Hawaii, San Diego and other bases on the US west coast, they are likely to be trailed very closely by Soviet AGIs and other 'tattletales'. At some point in transit to the northwest Pacific, the US commanders would have to take action against these vessels in order to protect their own operational security - action which could well initiate the first sinkings in the Pacific and which would also increase Soviet uncertainty about US intentions and movements.

Attacking the SOSS more generally would pose an awkward dilemma for US defence planners. On the one hand, the SOSS not only provides the Soviet national command authorities with intelligence on the deployment and movement of US forces in the north Pacific; it is also an integral and vital component of the national-level Soviet SIGINT system on which the Soviet leadership depends for monitoring US global deployments and operations and for the provision of strategic warning.<sup>3</sup> The disruption of this system could be calamitous. Threatened with the imminent loss of their principal source of strategic early warning, the most likely response of the Soviet leadership would be to seize the initiative and escalate dramatically to the large-scale employment of strategic nuclear weapons. On the other hand, the SOSS is such a powerful 'force multiplier', providing the targeting information that could threaten the survivability of the US naval forces, that US naval planners would feel compelled to take action against it. Whether or not the Soviet SIGINT architecture is understood and appreciated sufficiently sensitively to allow negatory action against some of its elements without impairing Soviet strategic

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<sup>3</sup> See Desmond Ball, 'The Soviet Strategic C<sup>3</sup>I System', in Fred D. Byers (ed.), *The C<sup>3</sup>I Handbook*, (EW Communications, Inc., Palo Alto, California, First Edition, 1986), pp.208-209; and Charles A. Zraket, 'Strategic Command, Control, Communications, and Intelligence', *Science*, (Vol.224, No.4655), 22 June 1984, p.1309.



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monitoring and warning capabilities in problematical. At a minimum, inducements to inadvertent escalation would undoubtedly be enhanced.

The underwater environment is particularly opaque, and underwater operations are particularly subject to uncertainty, confusion, loss of control, and inadvertent escalation. To begin with, as discussed above, there is the difficulty of distinguishing between Soviet SSNs and SSBNs. To say that 'in a conventional war all submarines are submarines. They are all fair game', as Vice Admiral Kaufman stated in 1977,<sup>4</sup> and that US SSNs would attack Soviet SSBNs 'in the first five minutes of the war', as Secretary Lehman stated in May 1985,<sup>5</sup> is to accept the likelihood that the Soviet command authorities would be faced with the loss of a significant proportion of its strategic nuclear deterrent and hence with the choice of launching these SLBMs before they are lost - and most likely simultaneously launching the land-based strategic nuclear forces as well - at some relatively early stage in a conventional conflict.

In addition, the circumstances of tactical submarine combat make early recourse to tactical nuclear weapons a distinct possibility. The US *Los Angeles* and *Sturgeon* SSNs, for example, carry a mixture of some two dozen conventional and nuclear-armed torpedoes, anti-submarine rockets, and depth bombs. Similarly, the Soviet *Victor II* and *Victor III* SSNs are equipped with SS-N-15 *Starfish* rocket-delivered nuclear depth bombs and/or SS-N-16 *Stallion* anti-submarine missiles as well as nuclear torpedoes. It is not difficult to envisage a submarine commander, having an enemy submarine in his sights but also having exhausted his conventional ordnance, employing these nuclear anti-submarine weapons; or a submarine commander, forced into a position from which escape otherwise seems impossible, using nuclear weapons to save himself. It appears from incidents in the 1960s and 1970s, when US SSNs were found by Soviet submarines in Soviet

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4 US Congress, Senate Armed Services Committee, *Fiscal Year 1978 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve, and Civilian Personnel Strengths*, (U.S. Government Printing Office, Washington, D.C., 1977), Part 10, p.6699.

5 Cited in Melissa Healy, 'Lehman: We'll Sink Their Subs', *Defense Week*, 13 May, 1985, p.18.

waters off the SSBN bases in the White Sea and at Vladivostok and Petropavlovsk, that US commanders have the authority to use their nuclear anti-submarine rockets and torpedoes if their survivability is threatened.<sup>6</sup>

Communications between US SSNs and higher command authorities are infrequent at the best of times. Once engaged in tactical combat, submarine commanders are likely to be even less able and certainly less inclined to maintain scheduled or timely communications with higher authorities. At the very time when national command authorities would be seeking to tightly manage operations, their information on the locations and status of their submarines, the state of mind of crews, and the circumstances pertaining to underwater detonations - who initiated the use of nuclear weapons, for what reason, and with what consequences - would be both meagre and of indifferent quality. Informed and timely management of the operations would be essentially impossible.

Inadvertent escalation is also a quite conceivable product of Soviet air operations against US surface combatants. The AS-2 *Kipper*, AS-5 *Kelt* and AS-6 *Kingfish* anti-ship cruise missiles carried by the AV-MF *Badgers* and the AS-4 *Kitchen* missiles carried by both the AV-MF *Badgers* and *Backfires* are all dual capable - i.e., they can be armed with either conventional warheads or with nuclear warheads with yields of 200 kt to 1 Mt. The threat posed by these missiles is the principal justification for the deployment of nuclear-armed surface-to-air missiles aboard US carriers, cruisers and destroyers. As two senior US defence planners argued in 1988,

Nuclear weapons ... may offer the only chance to defeat large-scale nuclear-armed cruise missile attacks on the fleet. First, by threatening to destroy multiple aircraft, nuclear weapons can thwart densely spaced mass raid tactics. More significantly, they increase the probability of killing aircraft-delivered missiles....

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<sup>6</sup> See Desmond Ball, 'Nuclear War at Sea', pp.5-6.



Nuclear anti-air warfare weapons are almost certainly required to counter the unique threat that Soviet nuclear-armed anti-ship cruise missiles pose.<sup>7</sup>

A fundamental problem, however, is that there is no way of determining whether an incoming air strike is conventional or nuclear. The US could thus initiate a nuclear war at sea without the certain knowledge that the Soviets had decided to in fact use nuclear weapons against its major surface combatants.

The deployment of dual-capable *Tomahawk* land-attack missiles aboard US attack submarines, cruisers and destroyers is similarly inherently escalative. The Soviet Union would have to consider that any US vessel equipped with *Tomahawks* and positioning itself for attacks against land targets in the Far East posed a nuclear threat even if in fact these missiles were carrying only conventional payloads. The obfuscation of the distinction between conventional and nuclear weapons systems occasioned by the *Tomahawk* and other dual-capable weapons is likely to increase Soviet paranoia about US naval deployments in the vicinity of the Soviet homeland; it inevitably reduces the degree of certainty with which Soviet responses can be predicted; and it increases the chances of miscalculation and misperception and hence of inadvertent escalation.

### (iii) Soviet policy and capabilities:

Most large Soviet naval combatants are equipped to carry nuclear weapons, including ship-to-ship weapons such as the *Shaddock* SS-N-3 (the standard warhead for which has a yield of about 250 kt), deployed on the *Kresta-1* and *Kynda* class guided missile cruisers; and anti-submarine weapons such as the *FRAS-1* anti-submarine rocket (with a 5 kt nuclear depth charge) deployed on the *Moskva* class helicopter carriers and the *Kiev* class aircraft carriers, and the nuclear-capable SS-N-14 *Silex* anti-submarine torpedo deployed on the *Kirov*, *Kresta-II*, and *Kara* class guided missile cruisers and the *Krivak* class

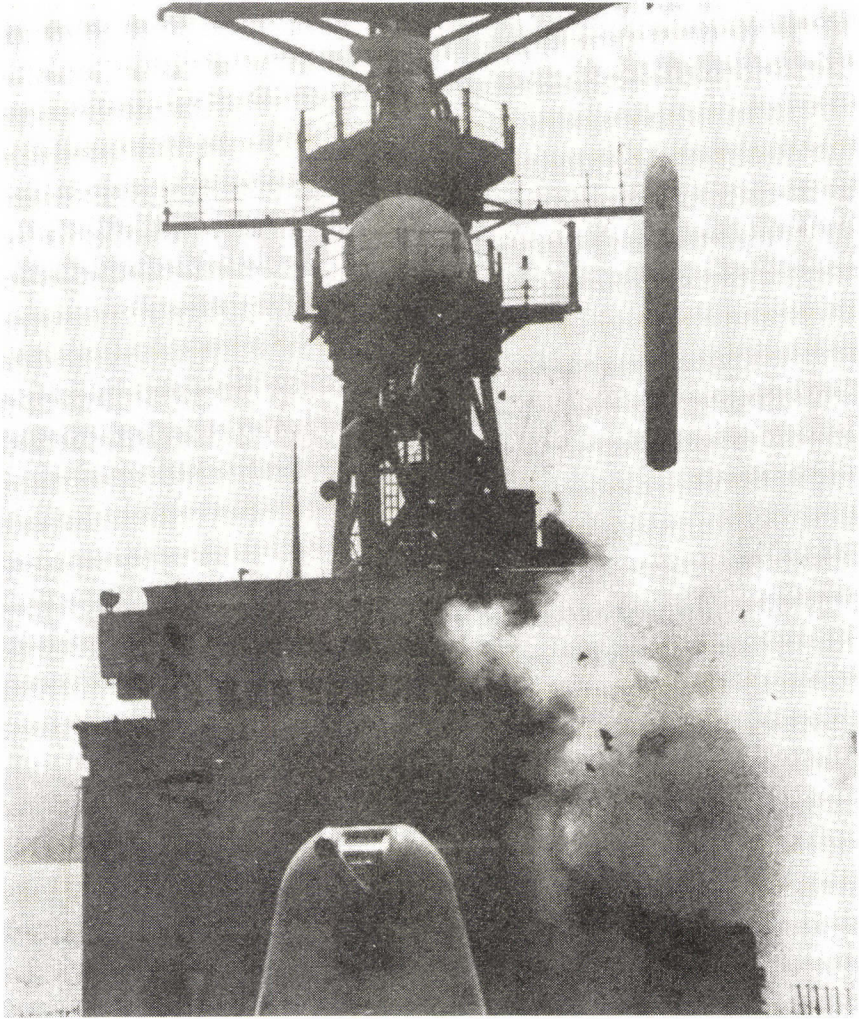
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<sup>7</sup> Captain Linton F. Brooks, U.S. Navy, and Franklin C. Miller, 'Nuclear Weapons at Sea', *US Naval Institute Proceedings*, (Vol.114/8/1206), August 1988, p.44.



Figure 42

*Tomahawk* SLCM launched from the USS *Merrill* (DD-976). The *Merrill* is based at San Diego, California.



missile frigates. A version of the standard Soviet 533 mm torpedo has also been fitted with a nuclear warhead with an estimated yield of about 15 kt and deployed in some submarines, including the *Whiskey* class submarine (No. 137) that ran aground in Swedish waters in October 1981.<sup>8</sup>

The major Soviet surface combatants are generally quite inferior to their US counterparts. In particular, they are less capable of engaging in any extended conventional operations. As a study prepared for the Atlantic Council has argued:

The dominant characteristics of many Soviet surface combatant ships - high speed; great striking power; and relatively limited cruising ranges and reload and resupply capabilities - all suggest that their employment in a long drawn-out conventional war was not foreseen as a major mission when they were built.<sup>9</sup>

Moreover, Soviet naval forces are less designed for and generally not deployed in Western-style task forces, so that the possibility of destroying US carriers in matched-fleet battles is not a real option for them.<sup>10</sup>

In these circumstances, the Soviet navy must be expected to resort to the use of nuclear weapons at a fairly early stage in any major engagement at sea, particularly when it is called upon to destroy US carrier task forces and particularly if it is believed that the use of nuclear weapons could be confined to the sea.

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8 Ronald T. Pretty, (ed.), *Jane's Weapons 1983-84*, (Jane's Publishing Company Limited, London, 14th edn., 1983), pp.84, 166, 167.

9 Paul H. Nitze, Leonard Sullivan, Jr., and the Atlantic Council Working Group on Securing the Seas, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, (Westview Press, Boulder, Colorado, 1979), p.74.

10 *Ibid.*, pp.20, 74.



## STRATEGIC C<sup>3</sup>I AND CONFLICT IN THE PACIFIC THEATRE

Just as considerations of the nuclear balance are relevant to US strategy even during the conventional phase of a conflict, so also should those concerning Soviet strategic C<sup>3</sup>I systems in the Far East.

At least some of the command and control facilities, communication systems, early warning stations and intelligence posts that would be required by the Soviet National Command Authorities in determining whether and when to initiate strategic nuclear strikes, and to conduct a strategic nuclear exchange, would be destroyed or damaged in the conventional or theatre nuclear phases of a conflict.<sup>11</sup>

Extensive segments of the Soviet strategic C<sup>3</sup>I system are based in the Far East/Pacific theatre. These include major early warning radar stations (such as the Over-the-Horizon Radars at Nikolaevsk-Na-Amur and near Vladivostok, the *Hen House* system at Angarsk, and the *Hen Roost* system at Komsomolsk-Na-Amur); RORSAT and EORSAT ground stations; satellite tracking stations at Irkutsk, Ulan Ude, Ussuriysk and Petropavlovsk; some two dozen SATCOM ground stations in the Far East Military District; and some eight VLF communications stations in the Far East Military District.

The Soviet SIGINT system is relied upon by the Soviet national command authorities as its most important source of strategic early warning. At the same time, the system is thoroughly integrated into the Soviet war-fighting posture. Because of the critical targeting information which it provides directly in real-time to major Soviet surface combatants and indirectly (via shore-based processing and communications facilities) to Soviet submarines, it is considered a legitimate target for US naval and air attack. To the Soviet national command authorities, however, the progressive degradation of its single most important national strategic warning capability would be cause for extraordinary concern.

It also follows that the Soviet Union would find, at the outset of any subsequent strategic nuclear exchange with the US, that its strategic C<sup>3</sup>I system was already impaired, with important

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11 See Desmond Ball, 'Controlling Theatre Nuclear War', *British Journal of Politics*, (Vol.19, No.3), July 1989, pp.323-324.



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geographical segments missing. The prospects for controlling the strategic exchange would be correspondingly weakened.

## CHAPTER SIX

# IMPLICATIONS OF 50 PER CENT REDUCTIONS IN STRATEGIC NUCLEAR FORCES

The prospective 50 per cent START reductions have important consequences for FBM submarine survivability and hence the presumed stabilising aspects of FBM submarine deployments, compounded by the asymmetries in US and Soviet SSN deployments and missions.<sup>1</sup>

Discussion of the consequences must be somewhat speculative, as the details of the 50 per cent reductions are yet to be determined. However, reasonable assumptions can be made which provide some illumination of the issues involved.

The relevant parameters of the 50 per cent reductions were agreed at the summit meetings in December 1987 and May-June 1990. It was agreed, for example, that a Strategic Arms Reduction Treaty (START) would set a ceiling of no more than 6,000 warheads on all strategic nuclear systems, and a sub-ceiling of 4,900 warheads on ICBMs and SLBMs.<sup>2</sup>

The current Soviet SSBN and SLBM warhead numbers were given in Table 1. The likely impact of a 50 START on these numbers is difficult to determine. The problem of restructuring the extant strategic forces to accord with the agreed ceiling and sub-ceiling is probably

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- 1 For a more comprehensive discussion of the implications of 50 per cent START reductions for FBM survivability, see Desmond Ball, 'Some Implications of Fifty Per Cent Reductions in Strategic Nuclear Forces for Sea-Based Systems', in Sverre Lodgaard (ed.), *Naval Arms Control*, (Sage Publications, London, 1990), pp.213-223.
  - 2 US Congress, House Committee on Armed Services, Defense Policy Panel, *Breakout, Verification and Force Structure: Dealing with the Full Implications of START*, (U.S. Government Printing Office, Washington, D.C., 1988), p.1; and 'Documents from the U.S.-Soviet Summit', *Arms Control Today*, (Vol.20, No.5), June 1990, pp.22-23.

greater for the Soviet Union than for the United States. The Soviet forces are on the whole newer than the US forces - notwithstanding the Soviet maintenance of relatively large numbers of SS-II ICBMs and *Yankee* SSBNs produced in the 1960s. The Soviet penchant for larger ICBMs also poses a special problem. It has been agreed that the Soviet Union will maintain no more than 154 heavy ICBMs (i.e., SS-18s and SS-24s), with 1,540 warheads, but it would undoubtedly wish to also maintain significant numbers of the 6-warhead SS-19s and the new single-warhead land-mobile SS-25s and new 10-warhead rail-mobile SS-24s.

According to Rear Admiral Studeman, Director of Naval Intelligence, in a statement presented to a subcommittee of the House Armed Services Committee on 1 March 1988,

Under START limits, the Soviet SSBN force can be expected to decrease from its current level of 63 units to a level of between 14 to 34 submarine hulls.

[The] Soviets will probably opt to keep more of their newer SSBNs. Fewer modern SSBNs can be retained because of the limited number of warheads allowed and the larger number of warheads that a modern SSBN with MIRVed missiles carries.<sup>3</sup>

The preferred Soviet position is to maintain only about 1,800-2,000 SLBM warheads (and between 3,000 and 3,300 ICBM warheads). A report by the Defense Policy Panel of the Committee on Armed Services of the US House of Representatives in May 1988 estimated that the Soviets would maintain 1,896 SLBM warheads, deployed aboard *Typhoon* and *Delta IV* SSBNs as shown in Table 4.<sup>4</sup>

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3 Rear Admiral William O. Studeman (US Navy), Director of Naval Intelligence, *Statement Before the Seapower and Strategic and Critical Materials Subcommittee of the House Armed Services Committee*, 1 March 1988, Mimeographed, p.23.

4 US Congress, House Armed Services Committee, Defense Policy Panel, *Breakout, Verification and Force Structure: Dealing With the Full Implications of START*, p.23.



**Table 4**  
**Soviet SSBN/SLBM Deployment**  
**(Defense Policy Panel, 50 per cent START)**

SSBN Class	SLBM	Number of SSBNs	SLBMs per SSBN	Warheads per SLBM	Total Warheads
Typhoon	SS-N-20	5	20	10	1,000
Delta IV	SS-N-23	14	16	4	896
		19			1,896

(This would enable the Soviets to maintain some 3,000 ICBM warheads - 1,540 on 154 10-warhead SS-18s, 1,120 on 112 10-warhead SS-24s, and 340 on single-warhead SS-25s). On the other hand, the US has insisted that greater reductions be made in ICBM warhead numbers and that somewhat larger numbers of SLBM warheads be retained. Moreover, the Defense Policy Panel has made the unlikely assumption that the Soviets would wish to retire all the modern *Delta III* submarines with their 7-warhead SS-N-18 SLBMs in favour of increased deployment of the *Delta IV* SSBN with the 4-warhead SS-N-23 SLBMs. It is more likely that the Soviet SSBN deployment under START would look something like that shown in Table 5.

**Table 5**  
**Soviet SSBN Deployment**  
**(50 per cent START)**

Class	Northern Fleet	Pacific Fleet	Total SSBNS	Total SLBMs	Total Warheads
Typhoon	4	-	4	80	800
Delta IV	3	-	3	48	192
Delta III	3	7	10	160	1,120
		10	7	17	288
					2,112

(This would enable the Soviets to maintain 2,788 ICBM warheads - 1,540 on 154 SS-18s, 1,000 on 100 SS-24s, and 248 single-warhead SS-25s.)

Given that something like these numbers eventuate (17-19 Soviet SSBNs with 1,896-2,112 warheads) then the US ASW resources devoted to each Soviet SSBN will be increased dramatically - by a factor of about 4. In the Pacific, as shown in Table 6, the increase in the ASW/SSBN ratio is a similar factor.

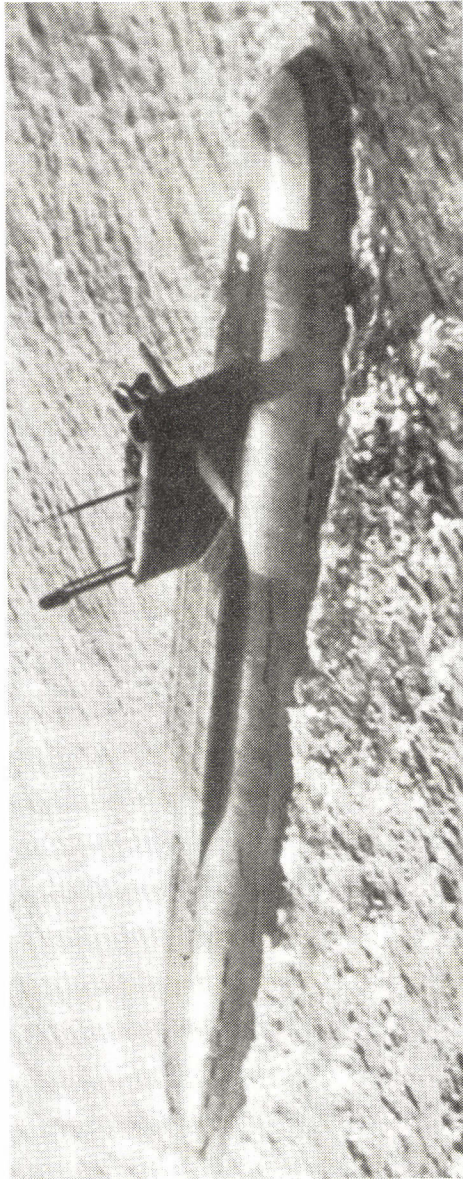
**Table 6**  
**Soviet SSBNs and US SSNs**  
**Pacific Fleet**

	Soviet SSBNs	US SSNs	US SSNs Counter SSBNs	Ratio
1989	26 (17 Delta 9 Yankee)	43	28	1:1
50%START	7 (Delta)	43	28	1:4

The START regime will thus greatly increase the potential vulnerability of Soviet SSBNs to US attack submarines and other ASW capabilities. Not only will the number of SSNs and other ASW capabilities which can be devoted to each Soviet SSBN be quadrupled, but the greatly reduced absolute number of Soviet SSBNs also raises the prospect of the US locating and destroying the whole force. Given that the Soviet SSBN force in the Pacific will be reduced to something like seven submarines (with some 1120 warheads) and that Soviet SSBN deployment and operational patterns remain substantially unchanged, only one of these submarines would normally be on patrol at sea in peacetime. Another one or two submarines would be on alert dockside at Petropavlovsk, able to launch their missiles in a launch on warning (LOW) or launch under attack (LUA) mode, but themselves unable to take the sea at less than 10-12 hours notice, and requiring at least another 10-12 hours to move from Petropavlovsk to the Sea of Okhotsk. Depending on their state of refit and repair and the speed

**Figure 43**

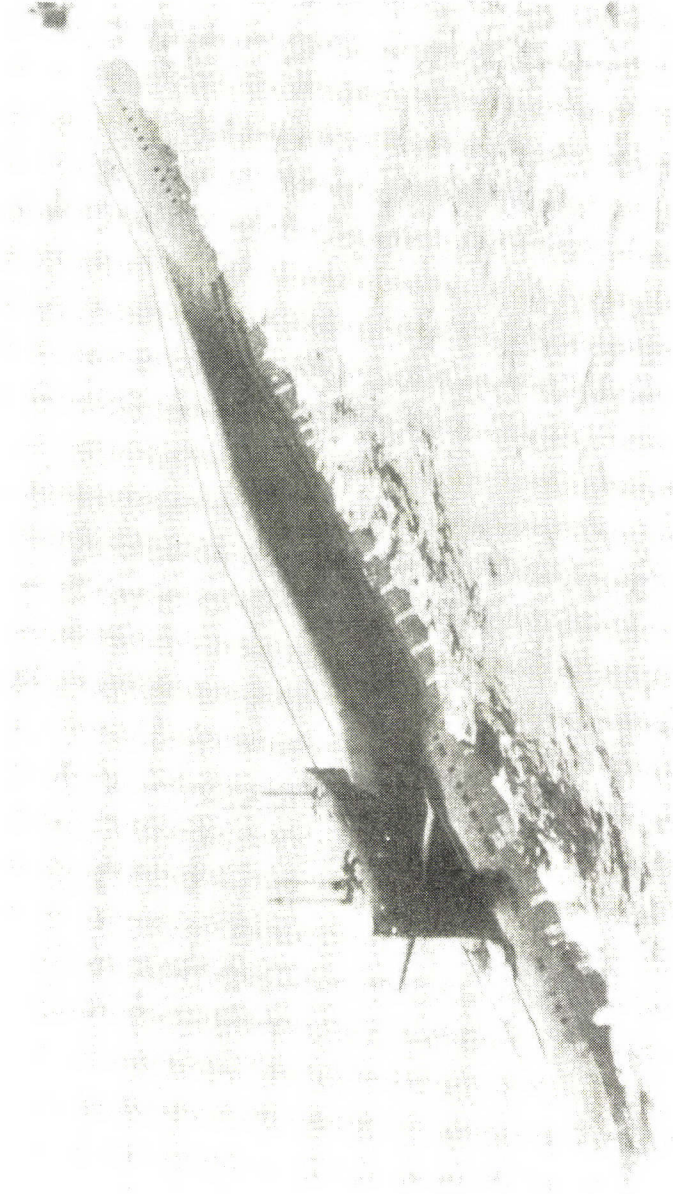
**A Yankee-class SSBN, Nine of which were Based in the Pacific  
in 1989**





**Figure 44**

**A Delta III SSBN, 15 of which were Based in the Pacific in 1989**



with which their crews could be reassembled, perhaps another one or two submarines could probably put to sea within 48-72 hours, leaving three or four 'sitting ducks' at Petropavlovsk.

It is likely that both the SSBNs and their base at Petropavlovsk would be attacked very quickly following the outbreak of a conflict in the Pacific. The US maintains some 30 SSNs in the Pacific for counter-SSBN operations, some of which would be on patrol in the Sea of Okhotsk, off Petropavlovsk and along the access points through the Kuriles into the Sea of Okhotsk even in peacetime. The US Navy has extensively practiced the use of carrier-based A-6 *Intruders* against Petropavlovsk,<sup>5</sup> and has also planned coordinated attacks against the base with the US Air Force.<sup>6</sup>

The Soviet SSBNs based at Petropavlovsk would represent some 12-14 per cent of the Soviet strategic nuclear forces following implementation of the START agreement. The vulnerability of this significant proportion of the Soviet strategic arsenal to destruction at the outset of even a conventional conflict is potentially extremely destabilising. The Soviet national command authorities could not afford to be but seriously perturbed at losing this strategic capability. It would have to face the awful issue of launching these SLBMs before they are destroyed, and hence also of launching its other strategic nuclear forces, much earlier in a conflict than would otherwise be necessary.

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5 Tom Burgess, 'Navy Jet Feints at USSR Told', *San Diego Union*, 22 November 1987, pp.A-1, A-10; and 'Pacific Provocations', *Bulletin of Atomic Scientists*, September 1989, p.63.

6 US Congress, Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1985*, Part 8, p.3888.

## CHAPTER SEVEN

### SUBJECTS FOR FURTHER CONSIDERATION

Conflict at sea is fraught with particular dangers that do not obtain, at least to the same extent, in the land environment. The control of nuclear weapons by central national authorities is physically much looser, at least aboard US vessels, with naval commanders having much greater autonomy with respect to the use of such weapons. Both submarines and major surface combatants (especially aircraft carriers) make lucrative targets for nuclear weapons, and there is a commonplace, albeit unfounded, assumption that a nuclear engagement at sea would be relatively easy to contain. On the other hand, the doctrines and operational procedures associated with sea-based nuclear weapons are subject to less well-defined thresholds than those associated with land operations. In fact, there are good reasons for concern that the escalation dynamics of warfare, including nuclear warfare, are far less constrained in the maritime theatre than those that would attend conflict on land. These dangers are greatly exacerbated by certain key elements of US strategy for the conduct of maritime operations, especially the 'imperative' to rapidly undertake offensive operations in forward areas.

It is therefore worthwhile to consider various strategic, doctrinal and force structure issues which might be resolved to enhance the stability of maritime operations in crises and conventional conflict.

#### **Reducing the momentum of offensive maritime operations:**

The requirement of US maritime strategy to rapidly initiate large-scale offensive operations in forward areas is inherently escalatory. Such a strategy is, unfortunately, very attractive on operational grounds. It offers the prospect of catching Soviet naval and maritime air forces before they can disperse, and it would force the Soviet high command to divert attention and resources from other, perhaps more critical theatres, elsewhere. However, these important military aspects should be considered secondary to the overriding concern to inhibit escalation proceeding to a nuclear exchange.



Impeding the momentum of offensive maritime operations is critical to the attainment of general strategic objectives which are more important than the more narrow military considerations which might suffer from such impediment. At a minimum, it would allow national decision-makers to keep abreast of events in a more informed fashion and to impose greater control over those events. More particularly, it would reduce the possibilities of inadvertent escalation to the use of nuclear weapons. The transition to nuclear conflict would be a more considered act rather than an inadvertent product of 'the battle for the first salvo'.

There are several possible approaches to impeding the momentum of offensive forward operations. Some involve the imposition of constraints on the rapid forward movement of maritime forces. Others would impose constraints on the scale of attacks against the Soviet target set and on strikes against particular targets - such as Soviet SSBNs and the Soviet C<sup>3</sup> and ocean surveillance systems. Rules of engagement should be promulgated to ensure that the forward movement of maritime forces does not generate Soviet reactions which necessitate the early employment of those forces - for example, by generating Soviet forces to the highest alert levels at the outset of the forward movement. The forward movement itself should be designed to signal that it was not irreversible but was proceeding in close consort with Soviet behaviour and with policies formulated at the highest level in the US to influence Soviet behaviour. Particular rules should address underwater operations. Although these would be the most difficult to design, given the opaqueness of the underwater medium and the vagaries of communication with submarines, they are also the rules most in need of codification. The movements and tactics which encourage inadvertence and propel the escalation process should be formally addressed and resolved, and the relevant considerations incorporated in both national guidance and operational rules of engagement. Self-imposed restraints along both temporal and targeting dimensions - i.e. allowing 'breathing spaces' for policy re-consideration, and more controlled and discriminate use of force - would serve higher national interests.

In addition to doctrinal and operational restraint, the momentum of offensive forward operations and the attendant escalation dynamics can be reduced by addressing the force structures and deployments themselves. Some force structure developments can

be undertaken unilaterally. For example, it would be in the interests of not only the survivability of a significant proportion of Soviet strategic nuclear deterrent capability but also of strategic stability more generally if the extraordinary concentration of SLBM warheads sitting dockside at Petropavlovsk could be more dispersed - even if only to the extent of maintaining a somewhat higher proportion of Pacific Fleet SSBNs in the Sea of Okhotsk or at rudimentary facilities along the Far East littoral rather than at Petropavlovsk.

Other force structure measures are likely to be more successful if undertaken through the bilateral arms control negotiation process. Unfortunately, the principal current strategic arms control regime, i.e. START, has not contributed to a more stable submarine balance. Rather, it has led to a reduced number of SSBN platforms and a much higher ratio of ASW resources per SSBN - making the SSBNs not just more lucrative targets but also more vulnerable targets. On the other hand, the START process has led to a more widespread acknowledgement of the need to design and develop new classes of smaller SSBNs and single-warhead SLBMs so that the permitted number of SLBM warheads could be distributed aboard a much larger number of SLBMs and submarine hulls.<sup>1</sup> In addition, strategic stability would be enhanced by limitations on SSN capabilities and deployments, at least insofar as these are directed at the anti-SSBN mission of the SSNs.

The prospect of inadvertent escalation could also be alleviated by bilateral and/or unilateral restraints on the initiation of use of tactical and theatre nuclear weapons. Unlike US Air Force and Army nuclear weapons, which can only be fired following an electronic release authorisation from the National Command Authority (NCA) to unlock their Permissive Action Links (PALs), the US Navy's *Tomahawk* TLAM(N) SLCMs and carrier-based B-57 anti-submarine nuclear depth bombs can be fired without any technical or other physical action by anyone outside the individual submarines or ships. The Navy has justified its resistance to any outside control on the grounds that rigorous launch procedures have been designed, that careful

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<sup>1</sup> See Desmond Ball, 'Some Implications of Fifty Per Cent Reductions in Strategic Nuclear Forces for Sea-Based Systems', in Sverre Lodgaard (ed.), *Naval Arms Control*, (Sage Publications, London, 1990), p.222.



personnel selection, training and discipline are a strong guarantee against unauthorised use, and that continuous or timely communications between naval (and particularly submarine) commanders and the NCA is frequently impossible.<sup>2</sup> However, these arguments are unpersuasive. The rigorous arming and firing procedures established by the Navy are salutary, but they are no substitute for physical/technical systems. The most significant impediment to the use of tactical and theatre nuclear weapons at sea would of course be the removal of such weapons from the theatre.

### Phasing-out naval nuclear weapons:

The United States and the Soviet Union currently possess more than 5,000 non-strategic (i.e. non-SLBM) naval nuclear weapons. These include nuclear-armed long-range SLCMs (such as the *Tomahawk* TLAM(N) and SS-N-21 *Sampson*); shorter-range anti-ship cruise missiles (such as the SS-N-3, SS-N-7 *Starbright*, SS-N-9 *Siren*, SS-N-12 *Sandbox*, SS-N-19 *Shipwreck*, and SS-N-22 *Sunburn*); nuclear-armed ASW torpedoes and depth bombs (such as the US B-57 nuclear depth bomb and the Soviet Type 65 and ET-80 torpedoes, FRAS-1 rocket and SS-N-15 *Starfish* nuclear depth bomb); nuclear-armed ship-to-air missiles (such as the Soviet SA-N-1 *Goa* and SA-N-3 *Goblet*); and naval air-delivered nuclear weapons (such as the US B-43 Mod 1 and B-57 bombs and the Soviet AS-4 *Kitchen*, AS-5 *Kelt* and AS-6 *Kingfish* air-to-surface missiles).<sup>3</sup>

In December 1989, at the summit meeting in Malta, President Gorbachev proposed to President Bush that negotiations be instituted to eliminate tactical nuclear weapons from all US and Soviet surface vessels, but President Bush rejected the proposal.<sup>4</sup> As General Edward

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<sup>2</sup> See Desmond Ball, 'Nuclear War at Sea', pp.10-11.

<sup>3</sup> See Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons 1990: A Complete Inventory*, (Neptune Papers No.5, Greenpeace, Washington, D.C., September 1990).

<sup>4</sup> See Hugh Davies, 'Soviet Summit Call to Slash Naval Rockets Rejected', *Daily Telegraph* (London), 7 December 1989, p.13; and Jack Dorsey, 'Top U.S. Negotiator Against Talks on Navy's Tactical Nuclear Arms', *Norfolk Virginian Pilot*, 14 January 1990, p.10.



L. Rowny, President Bush's chief arms control negotiator stated in response to the Gorbachev proposal: 'There is nothing in it for us. We can only lose'.<sup>5</sup> In fact, there is little real consensus within the US defence establishment on the utility of naval tactical nuclear weapons or on the value of naval nuclear arms control and disarmament. On the one hand, the US Navy generally believes that naval arms control is simply not in its interests. As Admiral Thomas A. Brooks, Director of Naval Intelligence, testified on 14 March 1990:

It is easy to see how the Soviet Union, a great land power, benefits from naval arms control. It is very difficult to see how the United States, a great maritime nation, could possibly benefit.<sup>6</sup>

More specifically, two senior US defence planners argued in 1988 that 'giving up naval nuclear weapons would impair both our deterrent and war-fighting capabilities, and the U.S. Navy would no longer be a navy worthy of a superpower'.<sup>7</sup>

On the other hand, the US Navy has never developed any clear or coherent tactical concepts or doctrine for the use of naval nuclear weapons. As Joseph Douglass and Amoretta Hoerber have asserted:

The [US] Navy has developed very little in the way of doctrine, tactics, strategy, or policy for the use of [tactical nuclear weapons] capabilities.<sup>8</sup>

And as a US Navy officer has written:

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<sup>5</sup> *Ibid.*

<sup>6</sup> Testimony of Rear Admiral Thomas A. Brooks, Director of Naval Intelligence, Seapower, Strategic and Critical Materials Subcommittee of the House Armed Services Committee, 14 March 1990, p.16.

<sup>7</sup> Captain Linton F. Brooks, U.S. Navy, and Franklin C. Miller, 'Nuclear Weapons at Sea', *US Naval Institute Proceedings*, (Vol.114/8/1206), August 1988, p.41.

<sup>8</sup> Joseph D. Douglass, Jr., and Amoretta M. Hoerber, 'The Role of the U.S. Surface Navy in Nuclear War', *US Naval Institute Proceedings*, (Vol.108, No.1), January 1982, p.58.

[US Navy planners] have consistently failed to consider a factor which might alter the character of future war - the existence of tactical nuclear weapons. Despite repeated declarations in the Chief of Naval Operations' annual posture statements that it '... is essential that the U.S. Navy maintain a capability to use tactical nuclear weapons if the United States is to be able to fight and win at sea', we have given little serious thought to the naval implications of tactical nuclear war.<sup>9</sup>

In fact, several senior US Navy officers and other national security advisers have argued that the elimination of naval nuclear weapons would actually be in the interests of the United States. As Captain Linton F. Brooks, U.S. Navy, wrote in 1987:

In contrast to the Soviet Navy, the U.S. Navy gains relatively little from the ability to employ nuclear weapons at sea.<sup>10</sup>

Admiral William J. Crowe, who served as Chairman of the Joint Chiefs of Staff from 1985 to 1989, has argued that a ban on tactical nuclear weapons would be in the US interest because it would improve the survivability of US aircraft carriers: 'The only thing in the world that can sink an aircraft carrier is a nuclear weapon'.<sup>11</sup> More generally, recourse to the use of nuclear weapons would provide the only means by which the Soviet Navy could destroy the US Navy. So long as naval conflict was confined to conventional forces, the outcome would be beyond doubt - the US Navy is simply too superior with respect to integral air defence, speed, striking power, cruising ranges, and on-board spares and maintenance capabilities, not to mention the skills and proficiency of officers and other ranks. As Paul Nitze and others

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<sup>9</sup> Captain Linton F. Brooks, 'Tactical Nuclear Weapons: The Forgotten Facet of Naval Warfare', *US Naval Institute Proceedings*, (Vol.106, No.1), January 1980, p.29.

<sup>10</sup> Captain Linton F. Brooks, 'The Nuclear Maritime Strategy', *US Naval Institute Proceedings*, (Vol.1134/1010), April 1987, p.36.

<sup>11</sup> Cited in Jack Dorsey, 'Top U.S. Negotiator Against Talks on Navy's Tactical Nuclear Arms', *Norfolk Virginian Pilot*, 14 January 1990, p.10.

have argued for more than a decade, the employment of naval nuclear weapons provides the Soviets with 'equalizers to compensate for America's maritime superiority'.<sup>12</sup> Hence, during the Reagan Administration, Nitze, as the senior arms control adviser to the Secretary of State, became an active proponent of eliminating nuclear-armed SLCMs as well as nuclear-armed torpedoes and depth bombs.<sup>13</sup>

In any event, a process of 'spontaneous disarmament' began to take effect in the late 1980s.<sup>14</sup> Between 1988 and 1990, for example, the number of US non-strategic naval nuclear weapons declined from some 3,645 to 2,500, with the elimination of all ASROC, SUBROC and *Terrier* nuclear systems from the fleet. In addition, eight US naval nuclear weapons under development since the mid-1970s - including a vertical launch ASROC with a nuclear warhead, the *Standard 2* surface-to-air missile, a nuclear-armed *Harpoon*, a nuclear-armed *Phoenix*, the *Sea Lance*, an ASW stand-off weapon, and a naval nuclear artillery projectile - have all been cancelled for one reason or another.<sup>15</sup>

On the US side, there are two remaining non-strategic naval nuclear weapons programs which warrant critical examination - the *Tomahawk* TLAM(N) and the new B90 Nuclear Strike/Depth Bomb. Under the US-Soviet SLCM agreement made in conjunction with the START agreement in May 1990, 880 nuclear-armed SLCMs are permitted each side. The US Navy's original objective was 758 TLAM(N)s. However, the number of platforms which could carry these missiles has declined by some 25 per cent as compared with Navy plans in the mid-1980s, as problems have been encountered with

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<sup>12</sup> Strobe Talbott, *The Master of the Game: Paul Nitze and the Nuclear Peace*, (Vintage Books, New York, 1989), p.379. See also Paul Nitze, Leonard Sullivan, Jr., and the Atlantic Council Working Group on Securing the Seas, *Securing the Seas: The Soviet Naval Challenge and Western Alliance Options*, (Westview Press, Boulder, Colorado, 1979), pp.20, 74.

<sup>13</sup> See Michael R. Gordon, 'U.S. Aide Offers Plan to Cut Arms at Sea', *New York Times*, 6 April 1988, p.3; and Talbott, *The Master of the Game*, pp.379-380.

<sup>14</sup> Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons 1990*, p.1.

<sup>15</sup> *Ibid.*. See also 'Navy Cuts Tactical Nuclear Arms', *Washington Times*, 18 December 1989, p.6.



the conversion of *Sturgeon*-class SSNs to carry *Tomahawks*, postponements in the acquisition of new *Los Angeles*-class SSNs, and the early retirement of some 50 surface combatants.<sup>16</sup> More importantly, 'nuclear-armed SLCMs have extremely limited military utility' - as reflected in the Navy's plans to arm only about 20 per cent of its projected *Tomahawk* inventory with nuclear warheads.<sup>17</sup> Indeed, as General Brent Scowcroft, President Bush's national security advisor, has pointed out, any technical military advantage which nuclear-armed SLCMs might provide the US Navy would be illusory since geographical asymmetries favour the Soviet Union: key US military installations and population centres are located close to the coast and constitute ideal SLCM targets, whereas comparable Soviet targets are located deep inland and protected by the most extensive air defences in the world.<sup>18</sup> Even a relatively small number of nuclear-armed SLCMs ('perhaps several tens') would greatly enhance the Soviet ability to conduct a 'decapitating' strike against critical US command and control centres.<sup>19</sup> A complete ban on nuclear-armed SLCMs would therefore be in US interests. (In addition, such a ban would obviate the verification problem of distinguishing between conventional and nuclear-armed SLCMs, since bans on classes of weapons are much easier to monitor than numerical limits within particular classes).<sup>20</sup>

The B90 Nuclear Strike/Depth Bomb is being developed to replace the B57. The Navy reportedly plans to procure about 1,000 B90s, to be deployed on A-6 *Intruder* and F/A-18 *Hornet* strike aircraft

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16 See Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons* 1990, pp.3-4; and Michael Krepon, 'Put A Ceiling on Nuclear-Armed SLCMs', *Defense News*, 18 June 1990, pp.29-30.

17 *Ibid.*, pp.29-30.

18 See Talbott, *The Master of the Game*, p.379.

19 See Theodore Postol, 'Banning Nuclear SLCMs: It Would Be Nice If We Could', *International Security*, (Vol.13, No.3), Winter 1988/89, pp.194-195. See also Alan Henderson, *SLCMs, Naval Nuclear Arms Control and US Naval Strategy*, (Working Paper No.209, Strategic and Defence Studies Centre, Australian National University, Canberra, June 1990), p.15.

20 *Ibid.*, p.5.

on carriers and by S-3 Viking and P-3 Orion ASW aircraft, for both tactical land-attack and ASW missions.<sup>21</sup> However, the weapon has little Congressional support, and in July 1990 the Senate Armed Services Committee refused to authorise funds for the program. The Committee justified halting development of the B90 on three grounds: the fact that the Navy itself is de-emphasising nuclear anti-submarine warfare; the availability of other nuclear strike bombs (i.e. the B57s) in the Navy inventory; and the cost of the program.<sup>22</sup> The cancellation of the B90 program would leave the US Navy with the B57, which first entered service in 1963, as its only non-strategic nuclear weapon. However, there would seem to be little justification for continued retention of the B57. It lacks modern safety and security features, and will have to be phased out of the inventory during the late 1990s anyway. A decision to retire them early would have many advantages for the US, particularly if it was reached in the context of bilateral negotiations with the Soviet Union. A nuclear-free US Navy - SSBNs apart - would eliminate much of the opposition to port calls from US ships that may be carrying nuclear weapons, which has severely damaged US relations with several 'allied' governments and constrained US Navy operations in some areas. If linked to an agreement to phase out Soviet land-based anti-ship and anti-submarine nuclear weapons, it would enhance the survivability of the US fleet as well as diminish the escalatory dynamics which attend the sea-land connection.

### **The sea-land connection:**

The sea-land connection is both a major impediment to progress in naval arms control and, in a conflict situation, an impelling escalatory factor. It has sometimes been argued that a nuclear engagement could be contained to the sea because attacks against naval vessels could be clearly distinguished as a specific, limited operation, particularly if the strikes were launched from other ships

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21 Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons 1990*, p.13; and 'Lulu's Grandchild Due in 1993', *Bulletin of the Atomic Scientists*, October 1989, p.47.

22 See Handler and Arkin, *Nuclear Warships and Naval Nuclear Weapons 1990*, p.42.



rather than from land bases, and because civilian casualties would not be involved. This is nothing more than a dangerous delusion. The destruction of large naval assets would disproportionately disadvantage the United States, both because of the enormous US investment in its carrier forces and because of the greater US dependence on sea lines of communication. The seven US nuclear-powered carriers alone represent a total investment of some \$15-20 billion and have a total complement of about 50,000 officers and men (including air crews) - the loss of which would exceed the total number of US fatalities suffered during the Second Indochina War! Moreover, attacks against US vessels are likely to unleash emotional pressures for positive strikes against higher-value targets in the Soviet homeland.

In fact, an important aspect of US maritime strategy as adumbrated in the mid-1980s is that nuclear operations at sea would be explicitly coupled to the prospect of escalation to land operations. As Richard Perle, Assistant Secretary of Defense for International Security Policy, testified in 1982, official US policy is to 'discourage the Soviets from believing that they could limit a nuclear war to forces at sea'.<sup>23</sup> And as the *Fiscal Year 1984-1988 Defense Guidance* issued by Secretary of Defense Caspar W. Weinberger on 29 March 1982 stated:

It will be U.S. policy that a nuclear war beginning with Soviet nuclear attacks at sea will not necessarily remain limited to the sea.<sup>24</sup>

Indeed, the threat to attack selected targets on Soviet territory in response to Soviet nuclear attacks against US naval forces was an explicit and integral component of the 'horizontal escalation' deterrent strategy explicated during the Reagan Administration.<sup>25</sup>

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<sup>23</sup> US Congress, Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1983*, (U.S. Government Printing Office, Washington, D.C., 1982), Part 7, p.4377.

<sup>24</sup> Cited in George C. Wilson, 'Pentagon Guidance Document Seeks Tougher Sea Defenses', *Washington Post*, 25 May 1982, p.1.

<sup>25</sup> See Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal year 1983*, Part 7, pp.4377-4380.



However, the logic of horizontal escalation - of threatening, in other words, to exacerbate the problems inherent in the sea-land connection - has never been carefully or persuasively articulated. The premises are simple enough: the Soviet strategic view is dominated by the land campaign, while Soviet naval assets are regarded in Moscow as secondary; hence the Soviets are far more likely to make decisions based on conditions ashore than at sea, and the survivability of the Soviet fleet would be a secondary consideration to the avoidance of escalation to nuclear attacks against Soviet territory. Horizontal escalation simply moves the domain of conflict to the land theatre where Soviet commitments are more intransigent and removes it from the naval theatre where Soviet forces would be destroyed with less dire consequences.

The irony is that Soviet leaders do not need to be reminded that conflict at sea is intrinsically coupled to land-based systems and operations. Significant Soviet maritime capabilities are located ashore. Some of the most important elements of the Soviet ocean surveillance system (SOSS), which provides a very robust and powerful 'force multiplier' for Soviet naval operations, are based on land - including the ocean reconnaissance satellite ground control stations, the reconnaissance aircraft, the SIGINT ground stations, and the processing and communications centres. Soviet land-based Naval Aviation is the most dangerous threat to both the US carrier battle groups (the *Badger* and *Backfire* bombers equipped with conventional and nuclear-armed anti-ship cruise missiles) and submarines (the *Bear F* and *May ASW* aircraft).

So long as these land-based capabilities remain so critical to the effectiveness of Soviet maritime operations, the US Navy will remain justified in emphasising the land strike mission, the escalation dynamics will be potent, and the prospects for naval arms control will be poor. The Soviet Union refuses to consider reductions or constraints on its land-based naval aviation while the US Navy retains nuclear-armed land-attack cruise missiles and strike aircraft, and the US Navy can resist proposals to phase-out its nuclear land-attack capabilities while Soviet nuclear-armed land-based naval aircraft provide the predominant threat to the survivability of its carrier battle groups.

There are two possible ways out of this impasse which warrant further consideration. One involves a re-structuring of Soviet capabilities to reduce the dependence on land-based naval aviation for anti-carrier battle group and anti-submarine operations - perhaps by relying more on SSNs for these operations. The second is to use the bilateral arms control negotiation process to pursue mutual and balanced reductions in Soviet Naval Aviation and US Navy nuclear land-attack capabilities to the point where the US Navy phases out its nuclear land-attack capabilities entirely and the Soviet air threat to the US fleet is effectively nullified. Crisis stability would be enhanced, the survivability of the US fleet would be improved, and the nuclear threat to the Soviet homeland would be diminished.

### **Separation of maritime/theatre C<sup>3</sup>I and strategic C<sup>3</sup>I systems:**

The vulnerabilities of C<sup>3</sup>I systems pose particular problems for escalation control. C<sup>3</sup>I systems are especially lucrative targets because they are generally easier to destroy than the weapons systems which they control and support, and because their destruction could neutralise or at least impair the effective operation of those forces, thus acting as an 'inverse force multiplier'. It is therefore not surprising that C<sup>3</sup>I systems rank high in both Soviet and US operational target plans.

The obvious consequence of destroying an adversary's C<sup>3</sup>I systems, however, is to reduce the ability of the adversary to use its forces in controlled and informed fashion. From an operational perspective, this is of relatively little negative import once an engagement is joined since the primary operational objective is the achievement of victory. Indeed, that is the very reason for focussing operational attention on these systems. Severing the connectivity between command and control systems and the forces greatly reduces the ability of those forces to be employed with timely, informed and expeditious effect against one's own forces, thus enhancing their survivability, and at the same time increases the vulnerability of the disconnected adversary forces to attacks at times and in circumstances of one's own choice.

The problem from the broader perspective of escalation control is that many of the C<sup>3</sup>I systems that control and support the



tactical and theatre forces are also designed to provide command and control, communications, early warning, and attack assessment for the strategic forces. Hence, many of the C<sup>3</sup>I systems which would be required to conduct a strategic exchange in some controlled and informed fashion would have been destroyed in the tactical or theatre phases of a conflict - and hence the prospects for controlling a conflict beyond these phases would be quite problematic. Further, the presumption that the ability to effectively control the strategic forces at some subsequent time was being lost would itself provide strong incentives to employ those forces before too much of the C<sup>3</sup>I architecture was destroyed or impaired. In other words, attacks against C<sup>3</sup>I systems conducted for sound operational reasons could have the unfortunate and unplanned consequence of inducing escalation to a large-scale strategic nuclear exchange.

There are several possible measures which might be pursued in an effort to alleviate this problem. One would be to physically separate tactical and theatre C<sup>3</sup>I assets from the strategic C<sup>3</sup>I systems in network designs. There are, however, major limitations to this approach. To begin with, C<sup>3</sup>I systems are not inexpensive. To design and construct entirely separate C<sup>3</sup>I networks for the maritime and strategic domains would cost billions of dollars above and beyond that already expended or programmed for the current networks. Many systems would inevitably remain multi-functional. For example, a *Krug* SIGINT system monitoring national communications systems for the purposes of strategic early warning would inevitably be capable of monitoring ship-to-ship and command post-to-ship communications, while the VLF communications stations at Petropavlovsk and Komsomolsk-Na-Amur could transmit to Soviet SSNs in a maritime conflict in the north Pacific no less than it could transmit to SSBNs in the course of a strategic nuclear exchange. Moreover, it would not be possible to separate certain command functions and facilities. There can only be one national command authority, in both maritime and strategic contingencies, and the headquarters of the Pacific Fleet at Vladivostok would function as a headquarters in both levels of contingency.

A supplementary approach would be to separate the C<sup>3</sup>I systems that would be required in a strategic nuclear exchange out from the targets which could be attacked in a maritime conflict - even if those systems were undoubtedly involved in the control and support



of maritime operations. In effect, a class of 'withholds' could be created for maritime conflict in the same fashion that they have been proscribed in US strategic nuclear target planning.<sup>26</sup> However, this would require much more familiarity with the intricacies of the Soviet C3I system and much more sensitivity to the role of C3I in Soviet operational planning than has been evinced by US strategic and military planners to date.

The process would be greatly assisted by the institutionalisation of some form of dialogue between US and Soviet planners to identify those C3I systems on both sides which should be exempted from theatre operations.

### **Limitations on SSN deployments, capabilities and operational concepts:**

The prospective START agreement will greatly reduce the number of SSBNs deployed by both the United States and the Soviet Union while leaving ASW capabilities (including SSNs) unconstrained. In the Pacific, the ratio of US SSNs to Soviet SSBNs is likely to increase from about 1.6:1 to 6:1 and, perhaps more to the point, the ratio of US SSNs devoted to counter-SSBN operations to Soviet SSBNs from about 1:1 to 4:1 - i.e. a four-fold increase. The ratio of Soviet SSNs to US SSBNs will also increase, but by a somewhat lesser factor - perhaps two-fold. The START regime will thus greatly increase the potential vulnerability of SSBNs and hence reduce strategic stability.

One way to redress this disturbing situation would be to place limits on SSN deployments, capabilities and operational practices. Such limitations would, however, be very difficult to implement.

The US and Soviet SSN forces are asymmetrical in terms of both their capabilities and their missions. Both are designed for multiple purposes, tactical and strategic, with counter-SSBN operations being a primary role only in the US case (see Table 3). In

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<sup>26</sup> See Desmond Ball, 'The Development of the SIOP, 1960-1983', in Desmond Ball and Jeffrey Richelson (eds.), *Strategic Nuclear Targeting*, (Cornell University Press, Ithaca, New York, 1986), pp.73,82.

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 the Soviet case, as shown in Table 7, homeland defence and SSBN protection are the primary roles.

**Table 7**  
**Soviet Attack Submarine Deployments and Missions**

Fleet	Homeland Defence	SSBN Protection	Counter SSBN Interdiction	SLOC Interdiction	Total
Northern	33	33	5	17	88
Pacific	26	26	3	14	69
Other	42	-	-	10	52
	101	59	8	41	209

If in fact Soviet attack submarine deployments and missions are something like those depicted in Table 7, then reductions in SSNs, even if feasible, would work at least in part to reduce the protection accorded to Soviet SSBNs and hence to increase Soviet SSBN vulnerability.

On the other hand, because of the superior capabilities of US SSNs, the threat which they pose to Soviet SSBNs would outweigh the protective value of the Soviet SSNs. It would therefore remain in Soviet interests to accept bilateral constraints on SSN deployments, even discounting the shared general interest in the enhancement of strategic stability.

It would seem worthwhile to ensure, therefore, that there are no further additions to the SSN forces once the SSBN levels have been reduced by START. At present, the United States is producing about 2-3 new SSNs per year. In the early 1980s, the Soviet Union demonstrated a capability to build 8-12 SSNs per year.<sup>27</sup> During the mid-1980s, some 6-8 were produced each year,<sup>28</sup> but in the late 1980s

<sup>27</sup> Orr Kelly, 'Sub Duel Under Polar Ice: How Ready is U.S.?', *U.S. News & World Report*, 5 March 1984, pp.35-36.

<sup>28</sup> Siegfried Breyer, 'The Soviet Submarine Force Today', *International Defense Review*, (Vol.20, No.9), 1987, pp.1155-1159.

the rate fell to 3-4 per year.<sup>29</sup> The deployment rate in the early 1990s is likely to be 4-5 new SSNs per year, but this could accelerate in the late 1990s if the second production line for the *Akula* class comes into full operation.<sup>30</sup>

It might also be expected that with ceilings on SSBN levels, there would be pressures to use the submarine shipyards for additional SSN production. Whereas the US now has only two shipyards which specialise in submarine production (the Electric Boat Division of General Dynamics at Groton, Connecticut, and the Newport News Shipbuilding Company at Newport News, Virginia), the Soviet Union has five - Severodvinsk; the Amur shipyard at Komsomolsk; the Admiralty and Sudomekh shipyards in Leningrad; and the Krasnoye Sorvomo shipyard at Gorky.<sup>31</sup>

Further, both the US and the Soviet Union have already been converting deactivated *Polaris* and *Yankee*1 SSBNs into attack submarines.<sup>32</sup> It would be important, therefore, for START to be accompanied by some agreement that submarine shipyard capacities not be converted from SSBN production to SSN production or used to convert SSBNs to either cruise missile carriers or attack submarines.

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<sup>29</sup> Rear Admiral William O. Studeman, Director of Naval Intelligence, US Navy, *Statement Before the Seapower and Strategic and Critical Materials Subcommittee of the House Armed Services Committee*, 1 March 1988, Mimeo, p.34; and Rear Admiral Thomas A. Brooks, Director of Naval Intelligence, US Navy, *Statement Before the Seapower, Strategic and Critical Materials Subcommittee of the House Armed Services Committee on Intelligence Issues*, 22 February 1989, Mimeo, p.10.

<sup>30</sup> Handler and Arkin, *Nuclear Warships and Naval Nuclear Weapons* 1990, p.3.

<sup>31</sup> Siegfried Breyer, 'The Soviet Submarine Force Today', pp.1155-1159.

<sup>32</sup> *Ibid.*, p.1156; Captain Richard Sharpe (ed.), *Jane's Fighting Ships 1988-89*, (Jane's Publishing Company Limited, London, 91st Edition, 1988), pp.553, 559; and Captain John Moore (ed.), *Jane's Fighting Ships 1982-83*, (Jane's Publishing Company Limited, London, 85th Edition, 1982), p.604.



Even in the absence of an agreement prohibiting new SSN construction, the overall numbers of SSNs are likely to fall significantly in both the US and Soviet fleets as older classes of submarines are retired. In the US case, the number of SSNs could well decline to a total of some 70-80 by the end of the century as the retirement of older submarines outnumbers the introduction of new ones.<sup>33</sup> Similarly, in the Soviet case, all the *November*, *Hotel II* and *Echo I* SSNs are in the process of being retired, and well over 100 diesel-powered but nuclear-armed submarines will have been scrapped by the mid-1990s.<sup>34</sup> This process of 'spontaneous disarmament' will enhance strategic stability.

On the other hand, the retirement of such significant numbers of older attack submarines means that neither the US nor Soviet navies would be likely to agree to prohibitions on new submarine construction. For one thing, both are concerned that their ability to destroy submarines belonging to countries other than their principal adversaries be maintained, if not, indeed, improved. The Soviet Navy has to take account of British, French, German and Japanese submarines, while the US Navy has recently evinced concern at the proliferation of advanced submarine capabilities in the Third World.<sup>35</sup>

Assuming that new SSN production proves impossible to prohibit, consideration should be given to constraints on the types and capabilities of such new submarines. For example, since there is a correlation between the size and offensive capability of a submarine, limitations could be imposed on the maximum displacement of new SSNs.

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33 Robert Holzer, 'Navy's 100-sub Fleet Unrealistic, Admiral Says', *Defense News*, 12 March 1990, p.1; and Eric Rosenberg, 'Navy Attack Sub Stockpile to Take a Dive', *Defense Week*, 12 March 1990, p.6.

34 See Handler and Arkin, *Nuclear Warships and Naval Nuclear Weapons 1990*, p.29.

35 See, for example, Rear Admiral Thomas A. Brooks, Director of Naval Intelligence, US Navy, *Statement Before the Seapower, Strategic and Critical Materials Subcommittee of the House Armed Services Committee on Intelligence Issues*, 22 February 1989, Mimeo, p.40.

Finally, there are several ways in which the operations of attack submarines might be constrained. One proposal is the idea of an 'ASW sanctuary', an area off bounds except for SSBNs. This proposal, however, has many formidable problems - such as defining the area and ensuring that the sanctuary status is observed - not just by attack submarines, but also by surface vessels, aircraft and satellites which might be equipped with ASW sensors.

### **SSBN/SLBM considerations:**

Another set of possibilities concerns measures designed to permit deep reductions in SLBM warhead levels while not involving reductions in the number of submarine hulls. Three possibilities come to mind.

The first is to retain the present number of SSBNs while reducing their SLBM and warhead fits. In the Soviet case, for example, Table 5 posits a reduction in SLBMs to 288 - 80 SS-N-20s, 48 SS-N-23s and 160 SS-N-18s - with 2,112 warheads, as compared to the current total of 950 SLBMs with 3,460 warheads. This proposal would simply retain the present number of 63 SSBNs but close 662 launch tubes - by filling them with cement or fitting some form of electronic locks - or physically removing some of the launch tubes.

The second approach would be to permit the design and development of new classes of smaller SSBNs so that the reduced number of 288 SLBMs could be deployed aboard a much larger number of hulls - say 48 hulls with 6 SLBMs each or 72 hulls with 4 SLBMs each. The third approach would provide for the development of not just new SSBNs but also new single-warhead SLBMs, so that the 2,112 warheads could be spread across a much larger number of SSBNs and SLBMs - say 88 SSBNs each with 24 single-warhead SLBMs. There would be obvious cost disadvantages associated with the development of new SSBNs and SLBMs involved in these approaches, but it would nevertheless be worthwhile to consider such possibilities. At the very least, they would provide a sounder base for any further disarmament beyond the currently-proposed 50 per cent START - such as the 90 per cent radical reductions which are already being considered by some arms controllers.

**Designing a strategy and force structure for stability:**

Finally, serious consideration should be accorded the design and development of a strategy, force posture and operational concepts for maritime conflict which are less offensive, less provocative and less escalatory than those which currently obtain. A strategic posture which was less threatening to Soviet SSBNs would allow the Soviets to adopt a more defensive posture in the Far East. Moreover, a less offensive and less provocative US maritime strategy would have more chance of actual implementation in the event of conflict. The present strategy depends on the initiation of forward, offensive operations at the very outset of a conflict or even intense crisis, but it is inherently so escalatory that the NCA could well be indisposed to authorise its implementation at such an early time. A less offensive and provocative maritime strategy would therefore not only be more conducive to stability but would also be more likely to receive operational approval.



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US strategy for the conduct of maritime operations in the Pacific in the event of a conflict with the Soviet Union is fundamentally and purposefully offensive. US forces would mobilise and move towards Soviet home waters during periods of crisis and confrontation, and would move rapidly and directly to attack a wide range of Soviet submarine, surface and air forces, and supporting bases and facilities, at the very outset of a conflict.

This monograph is concerned with some of the more critical *operational* aspects of the US strategy for offensive forward operations in the event of maritime conflict in the north Pacific. It discusses the basic rationales for this strategy; the role of the principal submarine, surface and air elements of the US posture; the relevant Soviet *operational* concepts and force posture; the strong escalatory pressures that derive from the interaction of the US and Soviet operational concepts and postures; some possible implications of a START agreement; and some particular subjects which warrant further consideration from the perspective of enhancing strategic stability.