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PRESIDENT REAGAN'S START PROPOSAL

Projected U.S./U.S.S.R. Ballistic Missile Forces

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PRESIDENT REAGAN'S START PROPOSAL - Projected U.S./U.S.S.R. Ballistic Missile Forces*

During his address at the Eureka College, on May 9, 1982, President Reagan summarized the strategic weapons plan to be proposed by his Administration to the Soviet Union during forthcoming STrategic Arms Reduction Talks (START).

Reportedly, under the first phase of the President's START proposal, the Soviet Union and the United States would be limited to about 5,000 warheads on no more than 850 intercontinental land-based and sea-based missiles (ICBMs and SLBMs). Within the aggregate limit of 850 ballistic missiles, neither side could have more than 2,500 warheads on land-based ICBMs. Reductions from the current inventories of deployed weapons would take place over a 5-to-10 year period. (Presented in Figure I are graphic illustrations of the quantities of ICBMs versus SLBMs allowed, and the tradeoffs permitted between the aggregate number of ICBM-launched and SLBM-launched reentry vehicles.)

Under the second phase, the implementation of which would be decided during the forthcoming START negotiations, the aggregate missile "throw weight" of both nations would be almost equalized. The United States will propose to the Soviet Union that the ceiling on aggregate ICBM throw weight is to be no larger than the aggregate throw weight of the present U.S. ICBM force.

Projected U.S. and Soviet Ballistic Missile Force Structures

There are many possible numerical combinations between types of ICBMs and SLBMs that can yield results which satisfy the proposed ceilings on ballistic missiles and warheads. However, the U.S. ballistic missile force structures

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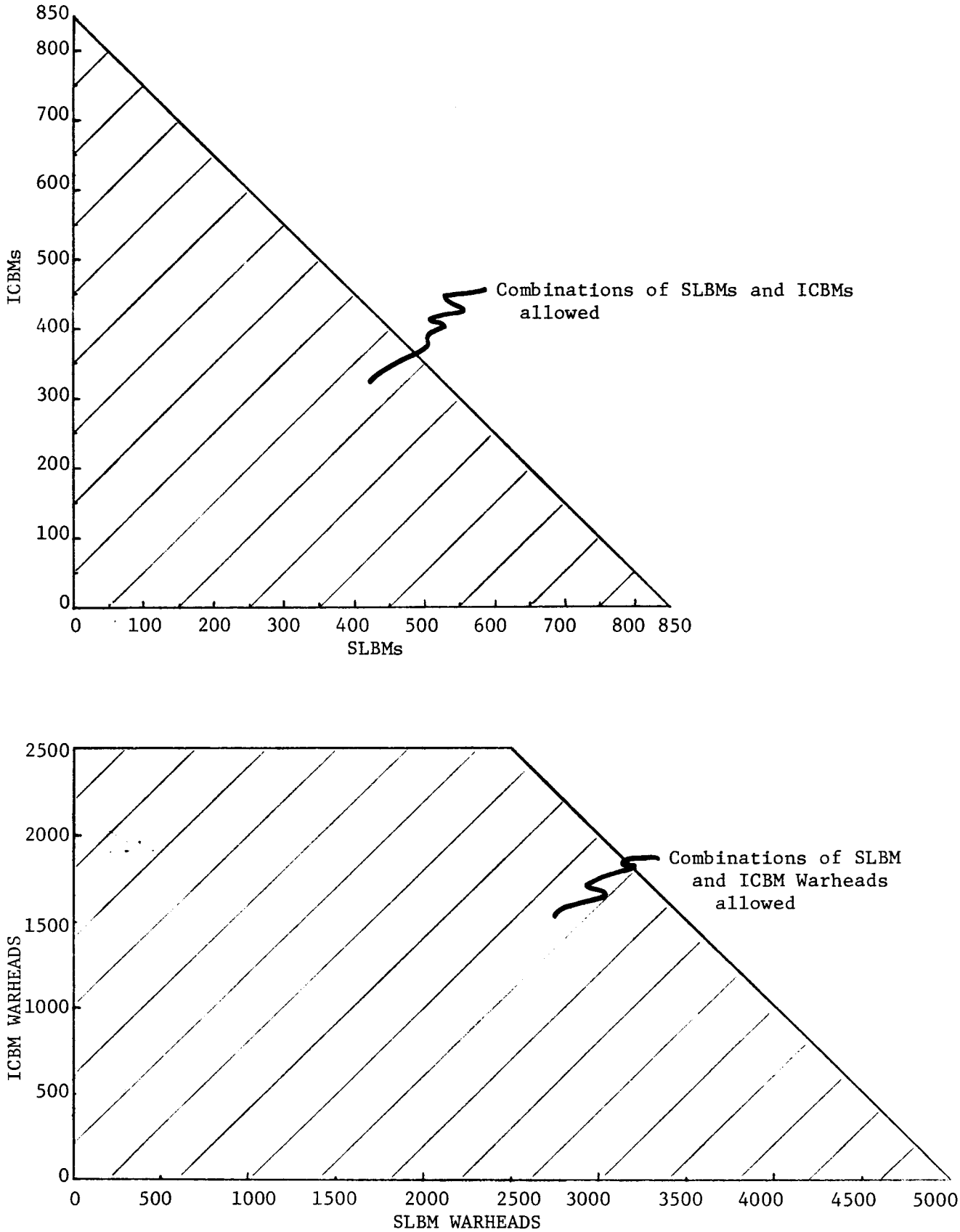
FIGURE I - BALLISTIC MISSILE AND WARHEAD CEILINGS
UNDER THE REAGAN START PROPOSAL



that meet the ceilings depend on the number of M-X ICBMs and Trident II SLBMs that would be deployed and on the number of warheads each of these missiles would carry.

Shown in Table I and Table II are projections of U.S. ballistic missile force structures with a 100 M-X ICBM force and 200 M-X ICBM force, respectively. These projections serve to illustrate some of the more plausible ballistic missile force structures that the U.S. could eventually develop under the Reagan START proposal once M-X and Trident II deployments are complete. To enable the reader to readily compare the U.S. and Soviet force structures, Tables I and II include the projected Soviet ballistic missile force structure. Tables A-I through A-IV, presented in Appendix A, illustrate how the transition could occur from the current U.S. and Soviet forces to the force structures projected in Table I.

Graphic comparisons of the projected inventories of ballistic missiles and warheads that would be possessed by the United States and the Soviet Union are shown in Figures II and III.

The following assumptions are used in making the projections:

- Reductions in the number of ICBMs and SLBMs from those currently deployed would begin in 1984.
- The ceilings of 850 ballistic missiles and aggregate of 5,000 warheads would have to be met by the end of 1988.
- Deployment of the M-X ICBM and the Trident II SLBM would take place (on schedule) in 1986 and 1989.
- Each M-X ICBM and Trident II SLBM would be deployed with 10 warheads.

TABLE I - ESTIMATED U.S./U.S.S.R. BALLISTIC MISSILE FORCES
UNDER THE REAGAN STRATEGIC ARMS REDUCTION PROPOSAL
(100 M-X ICBMs U.S. Option)

	U.S.		U.S.S.R.	
ICBMs:				
		Warheads		Warheads
	70 Minuteman III (3 MK-12)	210	300 SS-19 (6 Warheads)	1800
	300 Minuteman III (3 MK-12A)	900	70 SS-18 (10 Warheads)	700
	100 M-X (10 MK-12A)1/	1000		
Sub-Totals	470	2110	370	2500
SLBMs:				
	288 Trident II (10 MK-12A)1/ (on 12 OHIO SSBNs)	2880	60 SS-N-20 2/ (on 3 TYPHOON SSBNs)3/	600
			240 SS-N-18 4/ (on 15 DELTA IIIs)	1680
			64 SS-N-17 5/ (on 4 SSBN-Xs)	64
			108 SS-N-8 5/ (on 9 DELTA Is)	108
Sub-Totals	288	2880	472	2452
TOTALS	758	4990	842	4952

1/ The number of warheads each M-X ICBM and Trident II SLBM would carry under the Reagan START proposal has not been disclosed by the Department of Defense. In the projection shown, it is assumed each missile would carry carry 10 MK-12A warheads.

2/ Assumes 10 warheads per missile.

3/ The Soviets could deploy more TYPHOON SSBNs than shown. However, to do so they would have to retire some additional DELTA-class SSBNs not to exceed the aggregate number of SLBMs and SLBM-launched RVs. Also, the Soviets could deploy a new submarine (SSBN-X, equipped with 16 SS-N-17 SLBMs) to replace DELTA I and DELTA II SSBNs. Herein it is assumed that DELTA II SSBNs (not shown in the table) have been replaced by SSBN-Xs.

4/ Assumes seven warheads per missile.

5/ Assumes one warhead per missile.

TABLE II - ESTIMATED U.S./U.S.S.R. BALLISTIC MISSILE FORCES
UNDER THE REAGAN STRATEGIC ARMS REDUCTION PROPOSAL
(200 M-X ICBMs U.S. Option)

	U.S.		U.S.S.R.		
ICBMs:					
		Warheads			Warheads
	300 Minuteman III (3 MK-12A)	900	300	SS-19 (6 Warheads)	1800
	200 M-X (8 ABRVs)6/	1600	70	SS-18 (10 Warheads)	700
Sub-Totals	500	2500	370		2500
SLBMs:					
	144 Trident II (6 ABRVs)6/ (on 6 OHIO SSBNs)	864	60	SS-N-20 7/ (on 3 TYPHOON SSBNs)8/	600
	192 Trident I (8 Warheads) (on 12 LAFAYETTE SSBNs)	1536	240	SS-N-18 9/ (on 15 DELTA IIIs)	1680
			64	SS-N-17 10/ (on 4 SSBN-Xs)	64
			108	SS-N-8 10/ (on 9 DELTA Is)	108
Sub-Totals	336	2400	472		2452
TOTALS	836	4900	842		4952

6/ The number of warheads each M-X ICBM and Trident II SLBM would carry under the Reagan START proposal has not been disclosed by the Department of Defense. In the projection shown, it is assumed that the M-X would carry 8 Advanced Ballistic Reentry Vehicles (ABRVs) and the Trident II would carry 6 ABRVs.

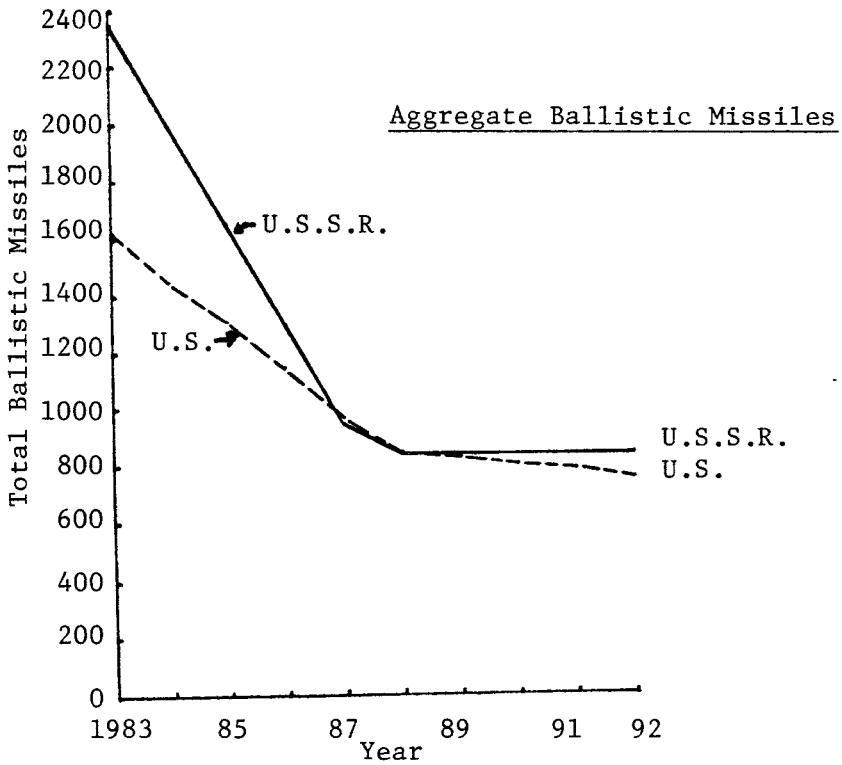
7/ Assumes 10 warheads per missile.

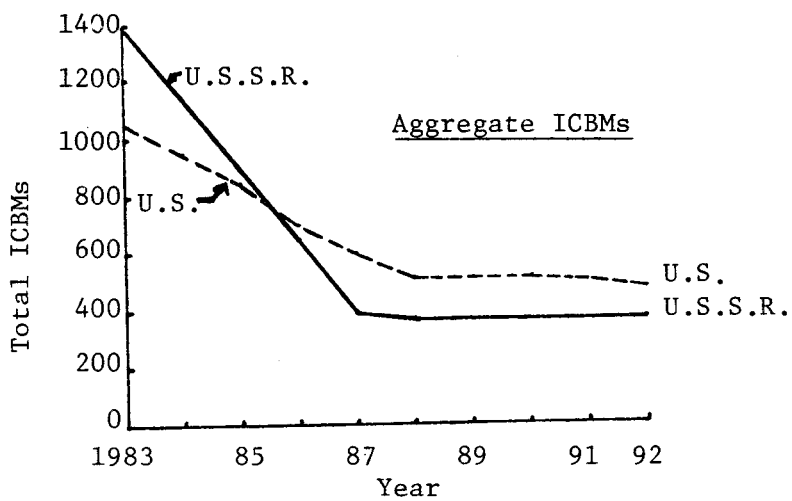
8/ The Soviets could deploy more TYPHOON SSBNs than shown. However, to do so they would have to retire some additional DELTA-class SSBNs not to exceed the aggregate number of SLBMs and SLBM-launched RVs. Also, the Soviets could deploy a new submarine (SSBN-X, equipped with 16 SS-N-17 SLBMs) to replace DELTA I and DELTA II SSBNs. Herein it is assumed that DELTA II SSBNs (not shown in the table) have been replaced by SSBN-Xs.

9/ Assumes seven warheads per missile.

10/ Assumes one warhead per missile.

FIGURE II - PROJECTED U.S./U.S.S.R. BALLISTIC MISSILE FORCES UNDER THE REAGAN START PROPOSAL





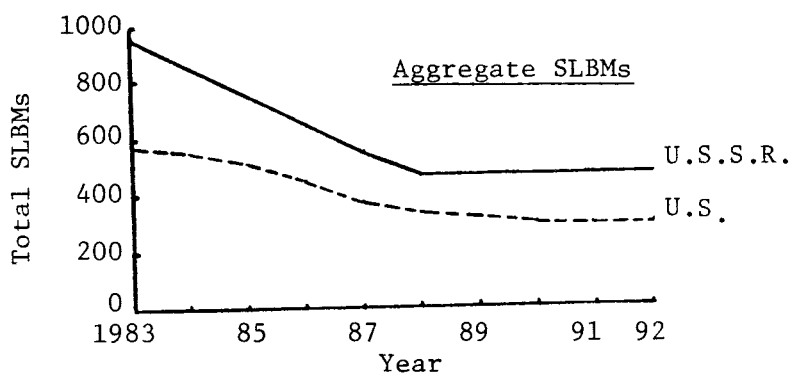
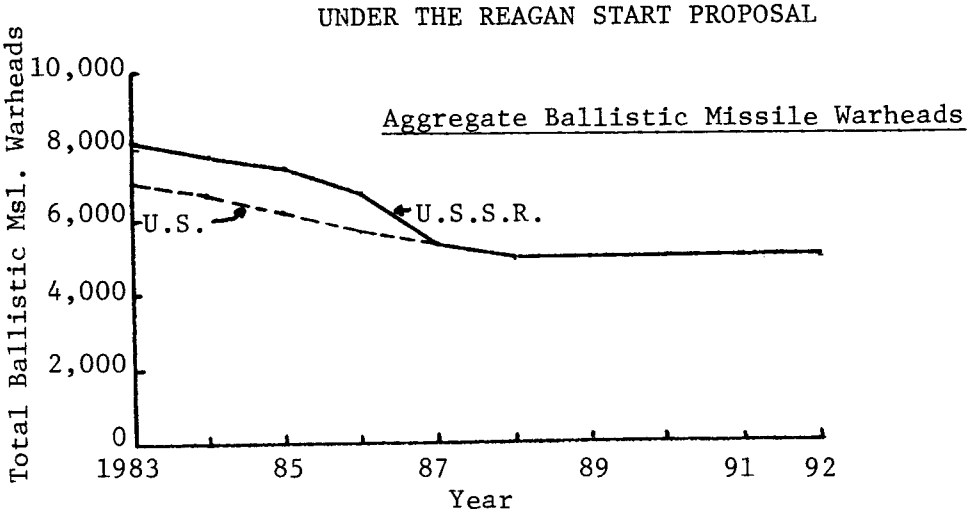
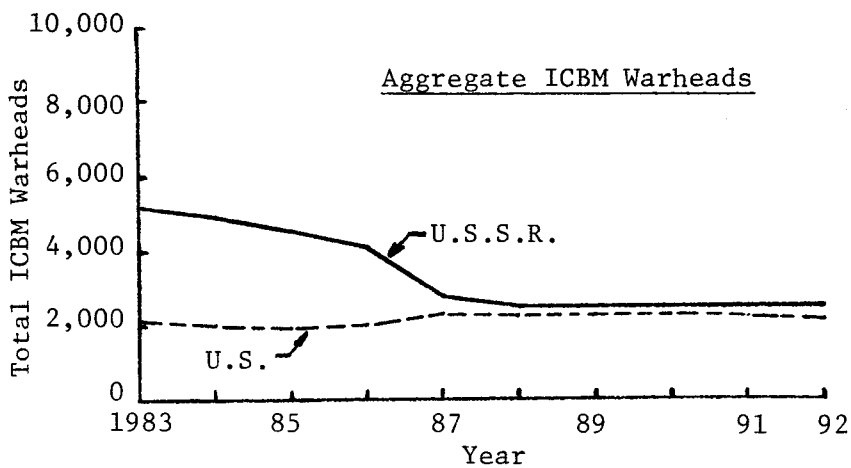
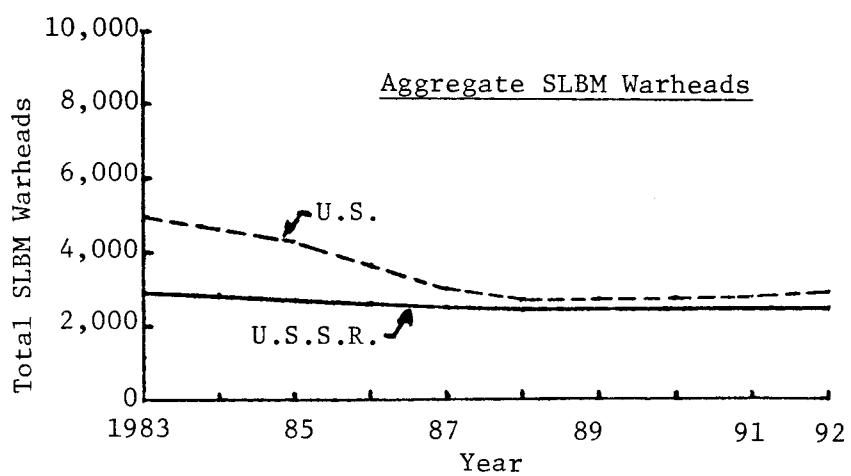


FIGURE III - PROJECTED U.S./U.S.S.R. DEPLOYED BALLISTIC MISSILE WARHEADS UNDER THE REAGAN START PROPOSAL







Some Major Goals of the Reagan START Plan

Some of the major goals that the Administration expects its START proposal to achieve are: 11/

- o Permit the U.S. to develop and possess sufficient military capability to deter the Soviet Union and to execute the U.S. national military strategy, taking into account the military capability that would be allowed the Soviet Union.
- o Establish equality in the provisions of any future strategic arms limitation agreement.
- o Promote strategic stability by reducing the vulnerability of U.S. strategic forces.
- o Establish effective verification with the necessary counting rules, collateral constraints, and cooperative measures.
- o Substantially reduce the number of currently deployed strategic nuclear weapons to equal ceilings.

Major Critical Views of the Reagan START Proposal

Some of the major critical views of the Reagan START proposal are that:

- o The Administration has not stated ceilings on sea-launched cruise missiles (SLCMs), air-launched cruise missiles (ALCMs), and bombers.
- o The Soviets probably will not agree to scrap 1,498 of their 2,348 ballistic missiles while the U.S. scraps only 770.
- o The Administration has not presented a way to verify either the number of Soviet ballistic missiles or warheads to be limited under its proposal.
- o Unless the entire U.S. ICBM force is retired or the Trident II missile is armed with a small number of warheads, the U.S. would probably have a relatively small number of ballistic missile-launching submarines which could become vulnerable to Soviet anti-submarine warfare (ASW).
- o The 5,000 warhead ceiling could create an incentive toward a breakout of anti-ballistic missile (ABM) systems.
- o The proposal itself does not alleviate the U.S. ICBM vulnerability problem. (Under the proposal, M-X missiles need to be deployed in a survivable basing mode in order to close the "window of vulnerability.")

11/ Haig, Alexander, Secretary of State. The Strategic Arms Reduction Talks. Current Policy No. 389. May 11, 1982. U.S. Dept. of State, Bureau of Public Affairs, Washington, D.C.

The ICBM Survivability Issue

Of the issues raised by the Reagan START proposal, ICBM survivability is both the most controversial and critical. The discussion below provides some information relevant to this debate.

Under the Reagan START proposal, the United States and Soviet Union could each have 2,500 ICBM-launched warheads. Many experts believe these warheads would possess a hard target capability. If this belief is correct, then (depending on how the ICBMs are based) both the U.S. and the Soviet ICBM forces could be vulnerable to attack by ballistic missiles.

The vulnerability of the U.S. and Soviet ICBM forces projected in Table I is highly dependent on how they are based. The Administration has not yet decided how to base ICBMs in the future. Analyzed below are three options for ICBM basing: (1) fixed deployment in existing silos; (2) deceptive deployment among existing silos; and, (3) deployment in the "closely spaced basing system" (CSB) -- popularly known as "dense pack" -- now proposed for the M-X. 12/

Option (1) - If both sides deployed their ICBMs in currently existing silos, and all empty silos were dismantled to simplify verification, the Soviets could target 940 of their 2,500 ICBM-launched warheads against the 470 U.S. ICBMs, and the U.S. could target 740 of its 2,500 ICBM-launched warheads against the 370 Soviet ICBMs. For those who believe that U.S. and Soviet ICBMs possess

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12/ The latest Air Force proposal for basing the M-X is to deploy the missiles in closely spaced (1,800 feet apart) silos within a triangular area of about 12 square miles. Each missile silo, capable of withstanding pressures up to 5,000 pounds per square inch, would contain one M-X missile. According to the Air Force, Soviet nuclear warheads would tend to neutralize each other (because of the phenomena known as "fratricide") and theoretically be unable to destroy a substantial portion of the M-X force. Some short time after the initial Soviet attack, but before a second wave of Soviet warheads could attack, there would be a "window" (lasting several minutes) through which the U.S. could launch the M-X missiles that survived.

a hard target capability, the targeting of two warheads against each ICBM would give high assurance of target destruction. Thus, under this assumption, this option would not provide for ICBM survivability under the Reagan proposal.

Option (2) - If the number of silos currently existing on both sides are not reduced, 13/ and the smaller number of ICBMs projected in Table I are deployed among them, option (2) gives considerably less incentive than option (1) for one nation to attack the other nation's ICBMs. Assuming that two warheads are required to have a high assurance of destroying each targeted ICBM, then, to attack the entire projected U.S. ICBM force, consisting of 370 Minuteman IIIs (based in 370 silos) and 100 M-Xs (assumed to be based among 630 Minuteman silos), 14/ the Soviets would have to attack the 1,000 U.S. ICBM silos with 2,000 of their 2,500 ICBM-launched warheads. Similarly, to attack the entire projected Soviet ICBM force, 70 SS-18s (assumed to be based among 308 silos) and 300 SS-19s (assumed to be based among 1,090 modified silos), 15/ the U.S. would need to place on target 2,796 warheads (but would only have 2500 ICBM warheads in its force). Thus, under the assumptions stated, it could be argued that neither nation would have a strong military incentive to strike first. The U.S. would not have enough ICBM-launched warheads to target all the Soviet silos; and the Soviets would, for all practical purposes, deplete their ICBM force in attacking the entire projected U.S. ICBM force.

13/ Launchers are not counted under the Reagan START proposal. Consequently, having substantially more silos than ICBMs may be permitted. However, if this were the case, a verification process would seem difficult to establish that would accurately count the number of missiles in silos yet preserve deception (necessary for survivability) as to which silos had missiles in them.

14/ Titan II silos are not counted because it is assumed they would no longer exist.

15/ The Soviet Union currently has 1,398 ICBM silos; 308 of these silos can launch the SS-18 and 360 can launch the SS-19. It is assumed that 730 other silos currently equipped to launch the SS-17, SS-11, and SS-13 ICBMs would be modified to launch the SS-19.

If ICBM accuracy and reliability were improved sufficiently to give a high degree of assurance that a silo could be destroyed with only one warhead, then the United States only would need roughly half of its ICBM force to destroy the Soviet ICBM force. The same would hold true for the Soviet Union. Thus, under this assumption, both the U.S. and Soviets may have military incentives to strike first.

Option (3) - Not enough is known about the Administration's plan for basing the M-X to make strong judgments as to whether the basing will ensure survivability of the U.S. ICBM force. However, assuming the closely spaced basing (CSB) approach is followed, it appears that the M-X would have the same survivability properties whether or not the Reagan START proposal was in effect.

The survivability of the M-X in the CSB mode relies on "fratricide" effects of the first Soviet warheads detonated in the vicinity of a group of M-X shelters, and on the strategy of launching the surviving M-X missiles a short time after the initial attack. It must be noted, however, that both of these mechanisms would be about equally effective regardless of whether the Soviets would retain the approximately 5,000 ICBM warheads currently deployed, whether they increase the number of warheads substantially, or whether they reduce the number of warheads to the 2,500 ICBM-warhead ceiling specified in the Reagan START proposal.

The SLBM Survivability Issue

Some critics of the Reagan START proposal argue that the survivability of the U.S. fleet of ballistic missile-launching submarines would be reduced under the Reagan plan. They contend that a reduced number of SSBNs would make the sea-based leg of the strategic triad vulnerable to Soviet anti-submarine warfare (ASW), and that the U.S. would lose a substantial portion of its sea-based

strategic warheads for each SSBN destroyed by the Soviets.

Whether this criticism is justified depends in part on what the SSBN fleet would consist of in the future if the Reagan START proposal were implemented. For example, if the U.S. SSBN fleet was designed around a Trident II missile that carried 10 warheads, and assuming that 100 M-X ICBMs were deployed and 370 Minuteman III ICBMs were retained, then, as Table I illustrates, the SSBN fleet could consist of 12 Ohio-class boats. 16/ Of these, six to eight would normally be at sea in peacetime. Alternatively, if the U.S. deploys the Trident II SLBM with 6 warheads, deploys 100 M-X missiles and retains only 30 Minuteman III ICBMs, then the U.S. would be allowed to have 27 Ohio-class SSBNs. 17/ This number of SSBNs would yield a peacetime deployment at sea in the range of 14 to 18 boats.

Of the two approaches just discussed, the latter would seem to counter the criticism that the Reagan START proposal would undermine SSBN force survivability since it could allow for a substantial number of SSBNs. It would, however, cost considerably more than the first approach since it involves procuring and operating many more SSBNs.

If the first approach was used, SSBN survivability could still be an open issue not amenable to simple analysis. However, the following considerations are relevant:

o Even with a reduced number of U.S. SSBNs, the Soviets would have to search the same area of ocean. Thus, the probability a that U.S. SSBN would be

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16/ The active U.S. SSBN fleet currently consists of 31 Lafayette-class boats and one Ohio-class boat. Some of the Polaris SSBNs have been scrapped; others are being retired.

17/ Assuming current SSBN production capacity, it is doubtful that the U.S. would be able to produce 27 Ohio-class SSBNs and 648 Trident II SLBMs by the end of 1992.

detected at sea would be conceptually about the same regardless of the number of U.S. SSBNs deployed. However, if the U.S. SSBN fleet consists of only a few boats, once the Soviets find one or more of the SSBNs they could concentrate a higher percentage of their ASW assets against them.

o The loss of one SSBN would represent the loss of a much higher portion of the sea-based leg of the strategic triad. In the examples shown above (assuming that two-thirds of the SSBN force is at sea), loss of one SSBN would represent a loss of 12.5 percent of our at-sea capability for the 10-warhead Trident II case (12 SSBNs, eight SSBNs at sea). In contrast, for the 6-warhead Trident II case (27 SSBNs, 18 SSBNs at sea), loss of one SSBN would reduce our at-sea SLBM assets by 5.5 percent.

APPENDIX A

TABLE A-1 - PROJECTED U.S. BALLISTIC MISSILE FORCES UNDER THE REAGAN PROPOSAL

(100 M-X ICBMs U.S. Option)

	By the end of calendar year									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
ICBMs:*										
Titan II	52	52	52	0	0	0	0	0	0	0
Minuteman II	450	350	250	125	0	0	0	0	0	0
Minuteman III (MK-12)	250	250	250	250	225	110	110	110	100	70
Minuteman III (MK-12A)	300	300	300	300	300	300	300	300	300	300
M-X	0	0	0	25	75	100	100	100	100	100
Sub-Totals	1052	952	852	700	600	510	510	510	500	470
SLBMs:										
Poseidon (Lafayette-class)	304	240	176	64	0	0	0	0	0	0
Trident I (Lafayette-class)	192	192	192	192	160	96	32	16	0	0
Trident I (Ohio-class)	72	120	144	192	216	216	192	120	48	0
Trident II (Ohio-class)	0	0	0	0	0	24	96	168	240	288
Sub-Totals	568	552	512	448	376	336	320	294	288	288
Totals	1620	1452	1312	1148	976	846	830	804	788	758

* It is projected that the United States would (a) retire no less than 100 Minuteman ICBMs per year from 1984 through 1987 and (b) retire all the Lafayette-class SSBNs by the end of 1990. Ohio-class SSBNs carry 24 SLBMs and Lafayette-class SSBNs carry 16 SLBMs.

APPENDIX A
(Continued)

TABLE A-II - PROJECTED U.S. ICBM/SLBM DEPLOYED WARHEADS UNDER THE REAGAN PROPOSAL

(100 M-X ICBMs U.S. Option)

By the end of calendar year

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
ICBMs:										
Titan II	52	52	52	0	0	0	0	0	0	0
Minuteman II	450	350	250	125	0	0	0	0	0	0
Minuteman III (3 MK-12)	750	750	750	750	675	330	330	330	300	210
Minuteman III (3 MK-12A)	900	900	900	900	900	900	900	900	900	900
M-X (10 MK-12A)	0	0	0	250	750	1000	1000	1000	1000	1000
Sub-Totals	2152	2052	1952	2025	2325	2230	2230	2230	2200	2110
SLBMs:										
Poseidon (9 Warheads)	2736	2160	1584	576	0	0	0	0	0	0
Trident I (8 Warheads)	2112	2496	2688	3072	3008	2496	1792	1088	384	0
Trident II (10 MK-12A)	0	0	0	0	0	240	960	1680	2400	2880
Sub-Totals	4948	4656	4272	3648	3008	2736	2752	2768	2784	2880
Totals	7000	6708	6224	5673	5333	4966	4982	4998	4984	4990

APPENDIX A
(Continued)

TABLE A-III - PROJECTED SOVIET BALLISTIC MISSILE FORCES UNDER THE REAGAN PROPOSAL

By the end of calendar year

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
ICBMs:*										
SS-18 (10 Warheads)	100	100	100	100	98	70	70	70	70	70
SS-18 (8 Warheads)	150	150	150	150	0	0	0	0	0	0
SS-18 (1 Warhead)	58	58	58	58	0	0	0	0	0	0
SS-19 (6 Warheads)	300	300	300	300	300	300	300	300	300	300
SS-19 (1 Warhead)	60	60	60	40	0	0	0	0	0	0
SS-17 (4 Warheads)	120	120	120	0	0	0	0	0	0	0
SS-17 (1 Warhead)	32	32	32	0	0	0	0	0	0	0
SS-13 (1 Warhead)	60	60	60	0	0	0	0	0	0	0
SS-11 (1 Warhead)	518	268	18	0	0	0	0	0	0	0
Sub-Totals	1398	1148	898	648	398	370	370	370	370	370
SLBMs:*										
SS-N-20 (Typhoon)	60	60	60	60	60	60	60	60	60	60
SS-N-18 (Delta III)	240	240	240	240	240	240	240	240	240	240
SS-N-17	60	76	76	76	76	64	64	64	64	64
(Yankee II)	(12)	(12)	(12)	(12)	(12)	(0)	(0)	(0)	(0)	(0)
(SSBN-X)	(48)	(64)	(64)	(64)	(64)	(64)	(64)	(64)	(64)	(64)
SS-N-8	286	250	214	178	140	108	108	108	108	108
(Delta II)	(64)	(64)	(64)	(64)	(32)	(0)	(0)	(0)	(0)	(0)
(Delta I)	(216)	(180)	(144)	(108)	(108)	(108)	(108)	(108)	(108)	(108)
(Hotel III)	(6)	(6)	(6)	(6)	(0)	(0)	(0)	(0)	(0)	(0)
SS-N-6 (Yankee I)	304	224	160	96	32	0	0	0	0	0
Sub-Totals	950	850	750	650	548	472	472	472	472	472
Totals	2348	1998	1648	1298	946	842	842	842	842	842

* It is projected that the Soviets would retire no less than 250 ICBMs and 100 SLBMs per year starting in 1984.

APPENDIX A
(Concluded)

TABLE A-IV - PROJECTED SOVIET ICBM/SLBM DEPLOYED WARHEADS UNDER THE REAGAN PROPOSAL

	By the end of calendar year									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
ICBMs:										
SS-18 (10 Warheads)	1000	1000	1000	1000	980	700	700	700	700	700
SS-18 (8 Warheads)	1200	1200	1200	1200	0	0	0	0	0	0
SS-18 (1 Warhead)	58	58	58	58	0	0	0	0	0	0
SS-19 (6 Warheads)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
SS-19 (1 Warhead)	60	60	60	40	0	0	0	0	0	0
SS-17 (4 Warheads)	480	480	480	0	0	0	0	0	0	0
SS-17 (1 Warhead)	32	32	32	0	0	0	0	0	0	0
SS-13 (1 Warhead)	60	60	60	0	0	0	0	0	0	0
SS-11 (1 Warhead)	518	268	18	0	0	0	0	0	0	0
Sub-Totals	5208	4958	4708	4098	2780	2500	2500	2500	2500	2500
SLBMs:										
SS-N-20 (10 Warheads)	600	600	600	600	600	600	600	600	600	600
SS-N-18 (7 Warheads)	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680
SS-N-17 (1 Warhead)	60	76	76	76	76	64	64	64	64	64
SS-N-8 (1 Warhead)	286	250	214	178	140	108	108	108	108	108
SS-N-6 (1 Warhead)	304	224	160	96	32	0	0	0	0	0
Sub-Totals	2930	2830	2730	2630	2528	2452	2452	2452	2452	2452
Totals	8138	7788	7438	6728	5308	4952	4952	4952	4952	4952