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MAJOR CONGRESSIONAL REDUCTIONS
FY 1986 - FY 1987

	QUANTITIES FY 1986	QUANTITIES FY 1987
PEACEKEEPER	**-36**	**-9**
Tactical Aircraft	**-**	**-78** (36 F/A 18, 36 F-16, 6 F-15)
Other Aircraft	**-**	**-24** (AH-64)
Bradley Fighting Vehicle	**-**	**-150**
Air Launched Missiles	**-984** (550 IR MAVERICK, 344 HARM, 90 AMRAAM)	**-4,111** (1437 SIDEWINDER, 2119 IR MAVERICK, 475 HARM, 80 AMRAAM)
CHAPARRAL Missile	**-300**	**-456**
TOW-2 Missile	**-7,241**	**-2,650**
MK-48 Torpedo	**-**	**-177**
MCM Ships	**-2**	**-**

John H. Hawes

Current
Policy
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Improving the Balance of Conventional Forces in Europe

United States Department of State
Bureau of Public Affairs
Washington, D.C.

Following is an address by John H. Hawes, Deputy Assistant Secretary for Politico-Military Affairs, before a National Defense University (NDU) symposium entitled "The Future of Conventional Defense Improvements in NATO," Washington, D.C., March 27, 1987.

I am pleased to have this opportunity to address the NDU symposium on "The Future of Conventional Defense Improvements in NATO." The topic is particularly timely. Ambassador [Assistant Secretary for Politico-Military Affairs H. Allen] Holmes, who was to have addressed this session, is in Brussels chairing an SCG [Special Consultative Group] meeting. They say the price of liberty is eternal vigilance. For officials of NATO, it also means eternal membership in the Pan Am Frequent Flyer Club.

You have gone into a lot of detail in 36 hours. I could not begin to recapitulate that effort. Rather, I would like to sketch a perspective on NATO conventional defense improvements as we look at Western security in the spring of 1987.

Opportunities and Pitfalls

This is a potentially promising moment. The Soviet logjam in Geneva may be breaking. Arms agreements which NATO has long sought may now be reached. We may see major changes in Eastern and Western forces. At the same time, the new Soviet leadership poses a new and more dynamic challenge. Patterns of competition are shifting. There are opportunities for the West, but also pitfalls.

NATO needs to exploit the opportunities to enhance stability and security. NATO must also avoid the pitfalls. To do both requires understanding. We cannot rely on partial or simplistic images.

This is easier said than done. There was a cartoon last week which typified the problem. In the first scene, a U.S. arms control delegation proposes the removal of medium-range missiles from Europe. In the next scene, the Soviets accept. The last scene shows the U.S. delegates in consultation, supposedly shocked and at a loss for what to do next.

That cartoon echoes a lot of superficial commentary. It does not, however, reflect the facts. In the real world, the President immediately tabled a treaty. Far from being embarrassed, we moved to nail down an LRINF [longer range intermediate-range nuclear forces] agreement at zero in Europe and 100 globally.

In the cartoon world, NATO minus LRINF is pictured as naked or "denuclearized" opposite heavily armored Soviet conventional forces. In the real world, we know better. We are constantly concerned with the Soviet conventional threat and the need to improve NATO forces—this conference testifies to that. But we know that decades of effort have not been without result. We know that the alliance deterrent triad, flexible response, and the U.S. commitment to Europe would remain unshaken.

That's more complicated and less funny than the cartoons. But it is just such complications that are the basis for understanding NATO's conventional defense problems. There are four factors we must weigh in considering the future of conventional defense improvements.

First, the nuclear/conventional interaction in doctrine, programs, and public perceptions;

Second, the implications of the conventional debate for trans-Atlantic and intra-European relations;

Third, the resources available; and

Fourth, the actual improvement programs.

The Nuclear/Conventional Interaction

Historically, weaknesses in NATO's conventional posture have—perhaps paradoxically—helped feed a vicious circle of public fixation on our nuclear forces. While alliance military experts have devoted time to conventional problems, publics have been bored with conventional force complexity, or convinced it is politically or economically hopeless, or diverted (and not a little frightened) by nuclear issues, which are far sexier for the media and the layman.

The upshot of this paradox is that conventional weaknesses, rather than stimulating public pressure for their remedy, may actually lead publics away from the hard issues.

Not all members of the public make this mistake. Many are aware of conven-

tional issues and concerned with doing something about them. But often one finds that their concern is less motivated by the conventional balance itself than by a desire to diminish nuclear risks. This is a noble goal which no one would question. It is shared by policymakers on both sides of the Atlantic. But it sometimes leads proponents to favor shoddy "quick fixes." And it has never proven adequate to generate the impetus for serious conventional force improvements.

It may never be possible to free the conventional debate from the nuclear issue. But we should seek a treatment of conventional issues that is as objective as possible under the circumstances. A debate that depends on images of nuclear escalation to generate monies for conventional defense is not likely to be productive and has not been. Nor is a debate that regards the conventional problem as a derivative issue likely to attract long-term commitment.

Last November in Chicago, Secretary of State Shultz addressed conventional forces and nuclear weapons cuts, such as had been projected at the Reykjavik summit. His remarks, however, were not tied to a particular scheme but to the overall challenges of a less nuclear world. He noted the prospect of such a world had provoked anxiety—ironically, given the arguments nuclear weapons provoke. He said he was not signaling the end of the nuclear era, which will be with us for the foreseeable future. But he specifically urged new thinking on defense including, specifically, conventional defense improvement. Reviewing NATO thinking over several decades, he concluded:

> . . . our reliance for so long on nuclear weapons has led some to forget that these arms are not an inexpensive substitute—mostly paid for by the United States—for fully facing up to the challenges of conventional defense and deterrence.

The Trans-Atlantic Political Context

A second element of NATO conventional defense improvements is the political context between Europe and North America. The trans-Atlantic tie is both competitive and cooperative.

There are two subthemes of this trans-Atlantic context. One is the issue of burdensharing, with its corollary, the level of U.S. forces in Europe. The other is the nature of intra-European cooperation. Both themes go back to the beginning of the alliance.

The postwar withdrawal, and reintroduction, of U.S. forces reflected an enduring debate in the United States. We have seen it flare up again this winter, with renewed calls for U.S. troop withdrawals. As [U.S. Ambassador to the Federal Republic of Germany] Rick Burt noted recently, such calls make no more sense from the right than from the left. We can and will rebut these suggestions. But we cannot eliminate the source of the tension. A recent poll found that a majority of Americans would go to war to help defend Europe. That is an encouraging sign of international responsibility. But it does not resolve budget problems or remove the burdensharing question from the agenda.

Similarly, the issue of intra-European cooperation has affected European/North American relationships, from initial EDC [European Defense Community] debates, to arms cooperation, to the variety of national participation in NATO activities.

In the best of worlds, the interaction of trans-Atlantic and intra-European politics should multiply Western forces. That happened at the founding of NATO and in the fight over INF. At times, however, interactions have been centrifugal. To some people, the most effective argument for European security cooperation is the alleged difficulty of working with Washington. Perhaps we should not quibble if NATO gets more defense, even for the wrong reason. However, a negative political spin has its own costs.

The U.S. view of European collaboration has been ambivalent and, at times, counterproductive. That is not the intent of the present Administration. We support all efforts to enhance defense collaboration. We support WEU [Western European Union] revitalization. We are concerned only that intra-European collaboration not become stuck at the lowest common denominator; that it lead to more, not less, defense; and that it produce more, not less, clarity on security issues.

The Need for Adequate Resources

The third area to discuss is resources. In his November speech, Secretary of State Shultz underscored the West's advantages.

> In any competition ultimately depending upon economic and political dynamism and innovation, the United States, Japan, and Western Europe have tremendous inherent advantages. Our three-to-one superiority in GNP [gross national product] over the Warsaw Pact, our far greater population, and the Western lead in modern technologies—these are only partial measures of our advantages. The West's true strength lies in the fact that we are not an ideological or military bloc like the Warsaw Pact—we are an alliance of free nations, able to draw upon the best of the diverse and creative energies of our peoples.

Commentators immediately said that is all well and good, but it is politically naive to expect democracies to allocate enough of that advantage to security. And an advantage which is only theoretical does not build tanks. They noted that defense budgets may shrink in real terms. They noted demographic changes and political constraints which make it difficult to sustain large standing armies. They noted the history of the burdensharing debate as an antidote to misplaced optimism.

None of these objections is false. But in their pessimism, they themselves constrict our options. It is often said we get the kind of defense we choose. And a preemptive narrowing of options leads to anomalies. People lament the conventional forces gap but wish to fill it only with nuclear weapons, then lament the dangers in nuclear weapons, agonize over imbalances in those weapons, and expect the Soviets to solve our problems in negotiations. That chain would be funny if it were not real. Breaking it requires a serious policy on conventional forces.

Improvement Programs

Which brings us to the fourth area: programs. There has been remarkable continuity in prescriptions. Despite fads, NATO concerns have been consistent.

- AD–70 looked at aircraft shelters, antiarmor capabilities, war reserve stocks, and air defense.
- The LTDP [Long-Term Defense Program] looked at readiness; rapid reinforcement; reserve forces and mobilization; air defenses; maritime forces; command, control, and communications; rationalization and standardization; electronic warfare; and tactical nuclear forces, as well as NATO's long-term planning mechanisms.
- The Emerging Technology Program looked at systems for defense against first-echelon Warsaw Pact forces and Soviet operational maneuver groups; defense against follow-on forces; counterair operations; attacks on command, control, communications, and intelligence capabilities; and strengthened long-term planning.
- The Conventional Defense Improvement Program has looked at redressing deficiencies in munitions supplies and ammunition stocks; improved long-term planning; armaments cooperation and

planning; infrastructure planning; better coordination in the areas of medium- and long-term force requirements, strategies, and doctrines; and the weapons acquisition and infrastructure programs.

These initiatives have brought NATO a long way. Programmatically, NATO has adapted to a dynamic threat. Politically, it has moved beyond debate over whether conventional forces need strengthening. Conventional forces are a central part of the agenda.

One of the reasons for continuity in prescriptions is the continuity of the Soviet challenge. Talk of the Soviet challenge produces sharp reactions. Some people brush aside analysis as mere "bean counting" and tend to downplay the military threat. On the other side, some people overdraw the analysis and attribute superhuman capabilities to the Soviets. Both views inhibit clear thinking about what needs to be done.

The task is to soberly evaluate the facts and the trends. On the negative side, the Warsaw Pact has kept and expanded its numerical advantage in almost every major weapons system. More ominously, the Pact has reduced NATO's qualitative edge.

- The reorganization of Soviet air forces and the creation of Theaters of Military Operations have significantly improved Soviet ability to conduct combined operations.
- The prepositioning of fuel, ammunition, and other logistics support with forward-deployed Soviet divisions has given the Pact an edge in sustainability.
- The introduction of Operational Maneuver Groups and Spetznaz forces enhances capability for deep operations.
- The upgrading of equipment—for example, deployment of the T-80, the MiG 29/31, and the Mi-24 combat helicopter—augment combat firepower.

At the same time, the Soviets have a number of weaknesses.

- Despite trends, NATO still holds a qualitative edge in several weapons systems and in training and intelligence. Moreover, Western leads in underlying technologies—e.g., computers, sensors, and optics—suggest we should be able to keep that edge.
- Second, Eastern Europe is a problem. Pact equipment is falling behind Soviet equipment. The reliability of East European forces would be uncertain. And the overall political situation is delicate.
- Third, the Soviets face resource constraints. A command economy can allocate resources, but it cannot abolish need for tradeoffs, as, for example, between defense and industrial modernization. Demographic trends may also affect the armed forces and defense industries.

Looking at these strengths and weaknesses must give the Soviets pause. For example, they appear to believe new technologies have ushered in a revolution in warfare. From what Marshal Ogarkov—the former Soviet Chief of the General Staff and apparent current Commander of the Western Theater of Military Operations—and others are saying, the Soviets seem uncertain whether NATO's achievements in high technology have undermined the Pact's ability to win conventionally. The object of NATO conventional defense improvement is to sustain and increase that Soviet uncertainty.

A viable force improvement program must meet several tests: political consensus, resource feasibility, cost effectiveness, and military utility. Many proposals to improve NATO's conventional forces are unrealistic or impractical. There is no quick fix to NATO's problems; if there were, NATO would have adopted it long ago.

NATO, for example, is not going to replace forward defense with heavily offensive or dispersed defensive strategies. Nor is NATO going to radically change force structure or make unprecedented defense spending increases. Nor are members likely to subordinate commercial interests sufficiently to achieve major defense procurement savings.

NATO can, however, improve its conventional forces without drastic changes in strategy or force structure and with a reasonable application of resources. The alliance is headed in the right general direction: it needs to do what it is doing, only better and faster. This does not mean we relax. As in many fields, the real profits are at the margin.

Efforts To Achieve Balance

In 2 weeks, Secretary Shultz will go to Moscow for talks with his Soviet counterpart on arms control, human rights, and regional and bilateral issues. The meeting was set up by Soviet willingness to drop their artificial linkage on INF. We now have an opportunity to move the whole security agenda. Conventional forces are an important part of it. They have been on the agenda since the 1960s. But efforts have been either limited in scope—the CSCE [Conference on Security and Cooperation in Europe] in Helsinki and the CDE [Conference on Confidence- and Security-Building Measures and Disarmament in Europe] in Stockholm—or more ambitious but deadlocked, as in MBFR [mutual and balanced force reductions].

A new effort is now being explored in Vienna. No one can have any illusions that this will be easy, that the Soviets will cheerfully renounce superiority in tanks—or any other area of their conventional preponderance. But to the degree that NATO can sustain its defenses, the Soviet Union will have to recognize that it cannot gain political or military advantage from its posture. At that point, reductions may become more attractive, and arms control can help structure developments toward the NATO objective of greater stability at lower levels.

Work on specific reductions proposals has just begun. We know what we do not like about the present situation—Soviet predominance in tanks, artillery, and other weapons and the offensive posture of forward-deployed Soviet forces. How, specifically, to deal with these problems is a subject of intense debate among the experts.

Past approaches tried to cut overall manpower. That's tough to verify and of limited military impact. We need more sophisticated approaches which can limit and reduce Pact offensive capability by focusing on major equipment and combat units.

We also need to ensure that any arms control proposals are consistent with our conventional defense improvement effort—a type of coordination we have never achieved in the past. That is easier said than done, given long force planning cycles, national political processes, negotiating dynamics, and NATO consultation mechanisms. But our chance of getting enhanced stability at lower levels may depend on our ability to draw operational consequences from the truism that arms control and force planning are two sides of the security coin.

Conventional Balance and Public Opinion

The conventional balance is now on the public agenda. Last week I saw an opinion survey, entitled: "Europeans favor eliminating INF from Europe, but are reluctant to pay for stronger conventional forces." That's the nub of our issue today. Publics recognize NATO is on the verge of a major INF success. But many have trouble supporting the conventional corollary. The details are interesting. In all countries polled, people ranked conventional parity the most important element for national security. This outranked strategic parity or even INF. Publics split on whether the Pact is ahead, equal, or behind. All countries had sizable minorities who would pay for

increased conventional forces if that was needed to reduce nuclear weapons; but only one had a majority that would do so.

That's not discouraging. Indeed, in the light of historic debates, it is striking that, today, the need to deal with the conventional force balance is so widely accepted. The alliance needs to capitalize on that recognition. Our ability to do so, despite our problems, is better than Soviet ability to meet their challenges.

You know the story comparing generations of Soviet leaders? They are on a train, stuck at the end of the tracks in Siberia. What should they do? Stalin would shoot the peasants and use political prisoners to lay more track. Khrushchev would take track from behind the train and relay it in front. Brezhnev would close the curtains and rock slowly. Gorbachev would open the windows and shout, "Move!"

Trite, perhaps. But it is good to know we are not alone with problems. We cannot belittle our difficulties—budgetary, political, or technical. But our methods of solving them, of getting our train moving, have typically been far more inventive than those in the story. They can be, because our societies and our politics encourage and make room for innovation.

The alliance has come a long way in 38 years. It has not run out of track. And it has not needed to open the windows and shout. Our windows have never been closed. NATO's deterrent reflects years of hard work and commitment to the ideal of common security. It is a deterrent comprised of many elements—some technical, some political, some flesh and blood. It grows, it evolves, and it endures. That is the context in which we consider the future of NATO conventional force improvements. It is a hopeful one and a realistic one. ■

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Sam Nunn on the Senate Floor—

Administration's ABM Reinterpretation 'Fundamentally Flawed'

Arms control

ARMS CONTROL TODAY

INF: Will The U.S. Accept its Own Proposal?

Comments by Spurgeon M. Keeny, Jr., Jack Mendelsohn, John Steinbruner, Catherine Kelleher

Special Section

A Point-By-Point Response:

ACA Tackles the Administration On Soviet Compliance

Witness to Hiroshima: The Peace Politics of Senator Mark O. Hatfield

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ARMS CONTROL TODAY

April 1987

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Unless the Reagan administration defuses the issue of Soviet noncompliance, it will leave a legacy of distrust that will cast a long shadow over the arms control efforts of future administrations. It

Special Section: Analysis of the President's Report on Soviet Noncompliance

Update

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Consequently, if President Reagan now really wants an agr mediate-range nuclear weapons, he will have to move prompt pliance problems he helped create. This will be a difficult but n mechanism already exists—the Standing Consultative Commis ated for this purpose. None of the issues, including the famo warning radar, appear to present insurmountable problems if be interested in solving them.

Unless the Reagan administration defuses the issue of Sov will leave a legacy of distrust that will cast a long shadow over t of future administrations. If arms control is to survive, the public but critical issue must be elevated from jingoistic rhetoric to obj

The "Noncompliance Legacy"

President Reagan has formally charged that the Soviet Union has violated seven arms control treaties and agreements and has "likely violated" an eighth. This grave accusation in the President's most recent report on "Soviet Noncompliance with Arms Control Agreements" further jeopardizes the future of arms control. The ACA staff analysis (p.15) however, documents that these charges, with one exception, are not clear cut; and, in some cases the charges are simply not supportable.

Arms control treaties between the superpowers are covenants that affect their vital security interests. Genuine violations of of these solemn commitments undermine confidence in the value of arms control agreements and increase tensions between adversaries. Similarly, frivolous or self-serving charges of violations are equally destructive of public confidence in arms control and the course of U.S.-Soviet relations.

The President's report presents a picture of reckless Soviet disregard for these agreements. A careful examination of the fragile nature of most of the charges reveals that the President's claim of a "continuing pattern of Soviet violations" is a gross distortion. An objective assessment indicates that the overall Soviet compliance record has actually been good and has served U.S. security interests well.

Public discussion of treaty compliance is uniquely difficult since the specific issues involve complex treaty provisions and an unknown amount of classified information. Given the adversarial U.S.-Soviet relationship, there is also a natural reluctance to appear to defend questionable Soviet activities. Nevertheless, the subject is too critical to the future of arms control and U.S.-Soviet relations to be relegated to domestic and diplomatic polemics.

The most serious charge is that the Soviet Union "may be preparing" an ABM defense of its national territory. Four new radars, one located illegally at Krasnoyarsk and three others legally located on the western Soviet border, are offered as the principal evidence. Contrary to the innuendos of the report, these radars are not suitable for ABM battle management but are clearly designed for early warning purposes. As further evidence of Soviet noncompliance, the report presents vague and unpersuasive charges describing four other activities as "probable" or "potential" violations or matters of "concern." These activities, however, have nothing to do with a nationwide ABM deployment. Rather than making the case that the Soviet Union is "preparing a base" to break out of the ABM Treaty, the President's report gives the impression that the administration may be "preparing a base" for its own repudiation of the agreement.

The report's rehearsal of the alleged Soviet SALT II violations gives further cause for concern about the future of the ABM Treaty. These controversial charges, all based on ambiguous provisions and incomplete evidence, were used to justify the U.S. repudiation of its political commitment to the SALT II limitations on offensive strategic weapons.

The report also repeats previous charges of Soviet violations of the Chemical Weapons Protocol and the Biological Weapons Convention despite new information raising serious questions about these charges. Similarly, the administration continues to assert that the Soviet Union has "likely violated" the unratified Threshold Test Ban Treaty despite the fact that most independent experts, including U.S. weapon laboratory directors, believe there is no basis for the charge. In short, the report deliberately ignores new information that significantly modifies the overall noncompliance picture.

The President's report is the latest chapter in the continuing campaign by the Reagan administration to discredit arms control with Congress and the public. It has succeeded in persuading most Americans that the Soviet Union does not honor arms control agreements.

Consequently, if President Reagan now really wants an agreement limiting intermediate-range nuclear weapons, he will have to move promptly to resolve the compliance problems he helped create. This will be a difficult but not impossible task. A mechanism already exists—the Standing Consultative Commission— which was created for this purpose. None of the issues, including the famous Krasnoyarsk early warning radar, appear to present insurmountable problems if both sides are seriously interested in solving them.

Unless the Reagan administration defuses the issue of Soviet noncompliance, it will leave a legacy of distrust that will cast a long shadow over the arms control efforts of future administrations. If arms control is to survive, the public debate on this arcane but critical issue must be elevated from jingoistic rhetoric to objective assessment.

Spurgeon M. Keeny, Jr.

Will the Reagan Administration Accept Its Own INF Proposal?

On March 3, 1987, the Media Information Project sponsored a press briefing on the recent Soviet offer to decouple the intermediate-range nuclear force negotiations from the broader strategic weapons discussions under way in Geneva. The briefing panel included: Spurgeon M. Keeny, Jr., former deputy director of the Arms Control and Disarmament Agency and president of the Arms Control Association; Jack Mendelsohn, former member of the SALT II and START delegations and deputy director of ACA; John Steinbruner, director of the Foreign Policy Study Program at the Brookings Institution; and Professor Catherine Kelleher, head of the Department of National Security Studies at the University of Maryland and director of the Maryland International Security Project. The Media Information Project is jointly sponsored by the Arms Control Association and the Committee for National Security.

Spurgeon Keeny: I would like to make a few very general remarks from the perspective of someone who has been involved in the intermediate nuclear force (INF) problem from the outset as chief of the U.S. delegation to the first INF negotiations at the end of the Carter administration. I strongly welcome Gorbachev's initiative to decouple the INF negotiations from the broader, strategic arms control negotiations. At the Reykjavik summit, the Soviets made rather substantial concessions which were coupled to agreement on strategic offensive and defensive weapons. It now appears that Gorbachev is prepared to incorporate these concessions into a decoupled INF proposal to eliminate medium-range missiles in Europe [Soviet SS-20 and SS-4 missiles and U.S Pershing II and ground-launched cruise missiles (GLCMs)].

Essentially, the Soviet Union has offered the United States the United States' own position. This is a far better deal than anyone would have foretold when the INF negotiations began in 1980. There are some significant remaining problems, relating to verification and short-range missiles, that were not resolved at Reykjavik. However, it's my belief these issues can easily be resolved. Unfortunately, they can also be made as complicated as one wishes. The President must now make some hard decisions on whether or not he really wants an INF agreement.

It's important to recognize that the INF subject is only a small part of the broader strategic confrontation between the superpowers. Even if the INF missiles are reduced to zero, both sides will retain immense strategic forces, which can cover all targets currently assigned to INF missiles. Given the U.S. repudiation of SALT II, strategic forces can grow without constraint and will soon negate any reductions achieved at the INF negotiations unless a new agreement on strategic forces is reached.

Whatever his motivations, Gorbachev has shown sufficient flexibility in his approach to arms control that it appears that even broader agreements than INF are within the administration's reach. However, progress in the broader strategic area clearly depends on resolution of the Strategic Defense Initiative issue, and will depend upon the willingness of the administration to operate within the limits of the ABM Treaty and to forgo any plans for an early deployment of a strategic defense.

The ball is now in the U.S. court. President Reagan now has an opportunity to achieve a significant arms control agreement during his administration, if he wishes. Should the United States fail to respond constructively to this initiative, it will make clear that the President is either not interested in arms control or that he is unable to control the forces within his administration that are opposed to this objective.

Jack Mendelsohn: My first point is that the INF negotiations are primarily political and not security negotiations. If the sides reach an agreement, it will reduce a maximum of 1,500 warheads. Stacked against superpower arsenals of 50,000 weapons, this represents approximately three percent of the nuclear forces on both sides. Moreover, because the United States has abandoned the SALT II Treaty, there are no limits on its number of long-range systems and force reductions in INF can easily be offset by strategic weapons. Thus, the INF negotiations will not directly affect the military balance. They are, however, a highly charged political issue.

The second major point I'd like to address is the evolution of the Soviet INF position during the time of Gorbachev's consolidation of power within the Kremlin. The Soviet Union has come a long way. In October of 1985, about six months after Gorbachev took office, he announced that he was prepared to consider a separate INF agreement. In January 1986 he announced that he was prepared to consider zero nuclear weapons in Europe as part of his "Disarmament By The Year 2000" proposal. In August 1986 he was prepared to drop all limits and constraints on British and French intermediate-range nuclear deterrent forces. In October 1986 at Reykjavik, he was prepared to reduce the level of Soviet warheads in Asia to 100. So, by February 1987, we can count six or seven key decisions that brought us to where we are today: zero weapons in Europe, a separate agreement, 100 weapons in Asia, and a few outstanding issues that I want to talk about next.

The issues that remain—basing, short-range missiles, and verification—are complex, but resolvable. The basing question concerns the location of the 100 remaining warheads in Soviet Asia. There have been previous discussions as to what longitude would be the dividing line between European and Asian Russia, and therefore, at what longitude—or east of what longitude—these residual 100 warheads would be based. Apparently, the debate now centers over whether the dividing line should be 60 or 80 degrees longitude.

The United States believes that missile deployments between 60 and 80 degrees give the Soviet Union the capability to target both Europe and Asia. And the administration wants to restrict the Soviet SS-20s to bases just east of 80 degrees.

On the issue of short-range INF (SRINF) missiles, the United States is addressing missiles with ranges between 500 and 1,000

kilometers. Tactical missiles with ranges under 500 kilometers would be discussed in follow-on negotiations and not be included in this treaty. We are talking about only a handful of SRINF weapons, perhaps 150 Soviet short-range systems (the SS-23 and the SS-12/22).

In 1984 the Soviet Union based some of these systems in Czechoslovakia and East Germany in response to U.S. INF deployments at the end of 1983. In his latest proposal, Gorbachev said the Soviet Union would be prepared to freeze these forces and move the missiles back within Soviet borders. At issue is whether the U.S. would have the right either to match the freeze level or bring the Soviets down to zero. These negotiations may be complicated because the United States currently has no systems deployed that fit into that short-range INF category. It would be very difficult for the United States to embark on a new deployment program to match Soviet short-range systems since such deployments would provoke a negative response in Europe. Nonetheless, the issue of short-range INF missiles does not seem to be an irresolvable one.

The most difficult and contentious issue is verification, which has an infinite capacity to clog negotiations. The United States has been anxious to pursue what could be called "socialized verification," following a missile from the cradle to the grave. We have an enormously complex panoply of measures, including a base-line count on the inventory of existing missiles, ongoing data exchanges, designated deployment areas, on-site challenge inspection, continuous perimeter monitoring of production and storage facilities, and on-site inspection for destruction and dismantlement. We would also be interested in provisions for test and training sites, and rules about location, use, and numbers of weapons. Finally, there are provisions for converting Pershing IIs and GLCMs into other, non-limited systems. This is an enormous package of verification procedures, especially when you consider that many of the measures concern a residual force of only 100 warheads, which in the Soviet case amounts to 33 launchers.

"The President must now make some hard decisions on whether or not he really wants an INF agreement."

The Soviets have indicated that they would be prepared to consider on-site inspection if it applied equally to both sides. And it looks like they are at least prepared to accept on-site inspection of destruction and dismantlement. What you have to keep in mind when considering the verification issue is that we have been able to follow 441 Soviet SS-20s without elaborate verification procedures. We have also been able to follow the approximately 130 SS-12/22s and the coming online of the new SS-23s. We have extensive verification experience in dismantlement and destruction procedures under the SALT treaties without on-site inspection. We also seem to have been able to keep a good handle on the number of weapons that have been entering and leaving the inventory. So, there is a discrepancy, I would argue, between the measures that we're demanding on verification and the verification requirements that are actually necessary. Finally, if verification becomes too complicated, you could argue that the elimination of the 100 remaining warheads would simplify the verification regime considerably.

U.S. Air Force photo

In foreground is a four-missile transporter-erector-launcher of the type used for U.S. ground-launched cruise missiles (GLCMs) in Western Europe. Truck in background houses launch control center.

John Steinbruner: Clarity in arms control comes slowly, if ever. But with each development, we do get a better reading of the past. With this in mind, I'd like to recount the political history of this particular set of weapons, and their meaning today.

Looking back, the origins of the SS-20 appear to have come out of the arrangements of the SALT I Treaty, which defined all Soviet forces that could reach the United States as strategic. The Soviets were replacing their original theater deployment, the SS-4s and SS-5s, with SS-11s and SS-9s that could reach the United States. The United States interdicted the plan with the SALT I rules and the Soviet Union developed the SS-20 to compensate within their own military. This logic almost certainly lay behind the original planning of the SS-20s.

The Europeans did not react to the SS-20 as if it were a compensation for SALT I rules, but as a system designed to divide the alliance and decrease confidence in the U.S. nuclear guarantee. The SS-20 threatened the Europeans and not the United States, and was deployed at a time when the superpowers had reached strategic parity. Modernization of the already overwhelming Soviet conventional forces in Europe only added to West European fears, culminating in former West German Chancellor Helmut Schmidt's speech in October 1977. In that speech, Schmidt didn't have any particular solution in mind. The energy crisis only added to Schmidt's angst. But the Carter administration picked up on his anxiety and decided to demonstrate that it could lead the alliance by promoting the symbolic deployment of strategic missiles in Europe.

Although in the United States Helmut Schmidt is almost always blamed or praised for the deployment, the detailed history indicates that the Carter White House used the deployment decision to try to recoup from the enhanced radiation neutron warhead fiasco and to demonstrate their leading role in the alliance. That decision led to the 1979 dual-track policy.

Although the deployment decision is never mentioned without saying it was a dual-track decision—both to deploy the missiles and to seek an arms control solution—there was never a decision as to how the two tracks would relate to one another. That question was left open in the alliance with different expectations held by different people at the time. The NATO countries

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Intermediate-Range Nuclear Forces

Long-Range INF Missiles *(More than 1,000 kilometer range)*

	System	Range (km)	Launchers	Warheads per Launcher	Total Warheads
US	Pershing II	1,800	108	1	108
	GLCM[1]	2,500	52	4	208
			160		316
USSR	SS-20	5,000	441[2]	3	1,323
	SS-4	1,900	112	1	112
			553		1,435

Short-Range INF Missiles *(500–1,000 kilometer range)*

	System	Range (km)	Euro-based Launchers	Total Launchers
US/FRG	Pershing Ia[3]	740	72	72
USSR	SS-23[4]	500	——	20+
	SS-12/22 Scaleboard[5]	925	54	110-120
				130-140

British and French Long-Range Missiles[6]

	System	Range (km)	Launchers	Warheads per Launcher	Total Warheads
UK	Polaris SLBM	4,600	64	2–3 MRVs	64
France	M-20 SLBM	2,900	80	1 RV	80
	M-4 SLBM	4,500	16	6 RVs	96
	S-3	3,900	18	1 RV	18
			114		194

Sources: Soviet Military Power 1986 *and* 1987*; Congressional Research Service;* Nuclear Weapons Databook*; International Institute of Strategic Studies (IISS)*

1. A ground-launched cruise missile launcher has four missiles, each with one warhead. NATO plans to deploy a total of 464 GLCMs by the end of 1988.

2. The Soviet Union deploys 171 SS-20 missiles in Soviet Asia, east of the Ural Mountains.

3. A short-range predecessor to the Pershing II, the Pershing Ia is a "dual-key" missile in West Germany under joint U.S.-West German control.

4. The Soviet Union is replacing the SCUD B (300-kilometer range) with the more accurate and longer range SS-23.

5. The SS-22 is a modification, with improved accuracy, of the SS-12. The Soviet Union forward deployed about 54 SS-12/22 missiles in 1984 in Czechoslovakia and East Germany in response to NATO INF deployments, which began in late 1983. Other Scaleboards are deployed opposite China, Southwest Asia, and Turkey, or are held in "strategic reserve."

6. The Polaris, M-4, and M-20 are sea-launched ballistic missiles. The warheads (multiple reentry vehicles) on British Polaris missiles are not independently targetable. The S-3 is a silo-based missile.

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didn't know whether they really wanted an arms control solution or whether they wanted to cover the deployment with arms control negotiations that would not succeed, and therefore legitimize the deployment for political reasons. This point is significant because the alliance is in the same quandary today.

Finally, there was linkage politics. The 1982 "Walk in the Woods" formula was initiated by Paul Nitze, the U.S. negotiator. This formula was similar to the deal that is now emerging in that it provides for the complete removal of Pershing II. Most people who have carefully read the negotiating record believe that the United States prevented that deal from going through. The idea of removing medium-range missiles from Europe is now re-emerging, and the questions are, why did it take so much time, and why has it been linked and delinked at various times.

At Reykjavik, the Soviet Union, although interested in a separate INF deal, was worried about the consequence of initiating such a deal and having a summit on that subject with the ABM Treaty issues unresolved.

Now, that brings us to the present. Let me give you a slightly different interpretation of the strategic significance of this proposal than Jack Mendelsohn did. The INF missiles are not an inconsequential matter in strategic terms. To the Soviets, the Pershing II is an unusually severe threat. It is a very accurate system. They consider it able to reach Moscow. Although the United States denies it, that technical assessment is plausible due to the size of the booster. The Soviets also believe that the Pershing II could conduct short warning attack against their central command assets and be the spearhead of a potential U.S. preemptive attack capacity. The production of the MX ICBM and the D-5 submarine-launched ballistic missile (SLBM) in concert with SDI fit neatly into this logic. The removal of Pershing II breaks that pattern. That break is far more significant than you would conclude just by looking at the marginal numbers. Clearly, in the overall numbers, the removal of the Pershing II is insignificant. But there is no other NATO weapon that could deliver a preemptive attack. Therefore, the removal of the Pershing II is probably very important to the Soviets. In fact, Gorbachev is probably facing a fair amount of pressure from the Soviet military to conclude an agreement.

The new proposal suggests that the Soviets have put aside the resolution of the SDI and ABM Treaty questions for now. They achieved what they presumably felt they had to, by focusing public attention on SDI as the major impediment to an arms control agreement.

The Soviets have not abandoned their ABM/SDI position, but they do realize they are not going to get anywhere with it. Therefore, they will take this minimum result, which is considerably important to them. Removing the Pershing II in exchange for the SS-20 is a very good deal for the Soviets. The SS-20 has no unique function in their overall posture, and the Pershing II does in ours.

Finally, let me note that if the Soviets are writing off any general progress in strategic weapons and are attempting to achieve a minimum result in INF, we may be surprised at how far they are willing to go in order to get that result, including verification measures, discussions of conventional force reductions, and removal of short-range systems. The Soviets will probably be willing to resolve these issues. We may discover that they are more intrusive with verification than we are. We will discover, in the short term, that they are much more willing to discuss conventional force reductions than we are. This initiative is an adroit political move. But it also reveals an underlying strategic interest in the Soviet Union that's been there all along.

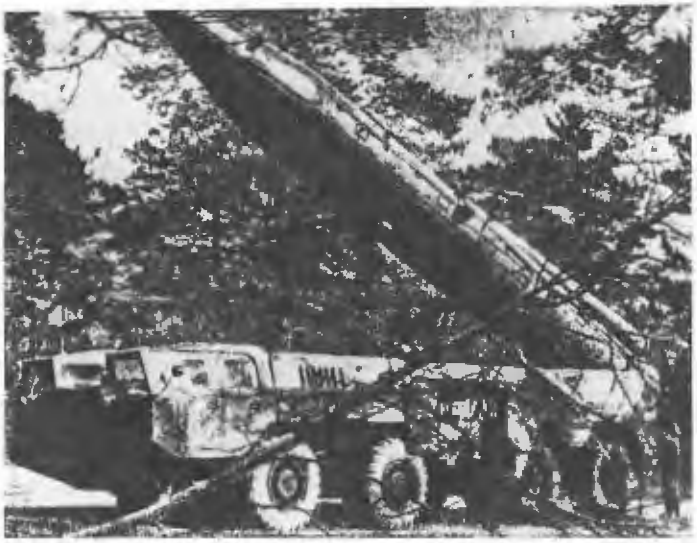
Catherine Kelleher: Let me discuss three dimensions that are critical to understanding European attitudes and reactions to the Gorbachev proposal. The principal dimension, at least in the short run, is the proposal's impact on domestic politics in several European countries. We see a contradiction that has existed almost since the dual-track decision in 1979 generally the difference between public and elite attitudes on the value of arms control, and specifically the value of an INF agreement. In every country in Europe at the moment, the commitment to continuing arms control negotiations, and especially to lessening the reliance on nuclear weapons, is a principal factor in domestic political opinion. Although I suspect that [British Prime Minister] Margaret Thatcher does not like the deal very much, it will help her pull some of the teeth from her domestic opponents—the Labor Party in particular, who are considering a non-nuclear posture in Europe. If it appears that Mrs. Thatcher will be party to a grand East-West INF agreement, her prospects for a third term will be improved.

We are seeing public support in Europe for the INF proposal, as opposed to elite grumbling which began long before Reykjavik and has certainly increased in volume since the United States began negotiations in this area. The Reagan administration went to Reykjavik in part to get this zero-zero deal. There were a number of messages from allied governments through private channels that this proposal was too little, too late, to help the negotiations, as they had paid in electoral blood and a few leadership crises in order to have INF missiles installed on their soil. The Germans in particular needed several high level meetings to accept the U.S. zero-zero proposal presented at Reykjavik.

Test launch of a U.S. Pershing II missile at Cape Canaveral, Florida. There are 108 of the intermediate-range ballistic missiles in West Germany.

I suspect that even though the allies will endorse the proposal in public, in private they believe that a negotiated agreement may not be sensitive to European concerns and interests. Some Europeans may even want the United States to get out of the INF negotiations.

Six years ago, NATO agreed to accept the zero-zero proposal. That agreement is still valid and was reaffirmed in the December 1986 NATO communique. Yet allied experts continue to disagree on three issues.



Soviet SS-12 short-range ballistic missile on mobile launcher. As the United States and the Soviet Union attempt to negotiate zero INF levels, short-range missiles may become a stumbling block.

First, many Europeans and Americans would like to redefine the minimum threshold level for shorter-range systems. In 1982 the United States proposed a freeze on the SS-12/22 and SS-23, and thus defined short-range missiles as having a range of between 500 and 1,000 kilometers. Missiles with ranges above 1,000 kilometers would be covered in INF. Many experts now believe that the minimum threshold should be 300 kilometers, because several of the SS-23s or SCUD-B-3 missiles have ranges between 300 and 500 kilometers.

Second, many Europeans believe the removal of INF forces from Europe may adversely affect the conventional weapons balance in Europe.

Third, memories of the difficult deployment decisions of 1981-82 trouble Europeans most of all. As before, the Soviets have been successful, especially at the public level, in portraying the United States as blocking meaningful progress in arms control. The present Soviet campaign is much more savvy and sophisticated, and forces the European leaders, if only for domestic political reasons, to explore every arms control avenue before changing or modernizing their forces. This leads to precisely the same conclusion that Helmut Schmidt reached in 1977: the triangular discussion of European arms control will find its greatest difficulties in the U.S.-European leg of the triangle rather than the U.S.-Soviet or European-Soviet legs. These difficulties will place very specific costs on already strained allied relations.

QUESTION AND ANSWER

Q: *I'm surprised that none of you has mentioned the Iran arms scandal and what bearing that may have had on Gorbachev's decision to make this offer at this time. Do you mean to suggest that he might have done this even if the scandal had never occurred and if Reagan had never been so weakened?*

Keeny: My own view is that the Soviets probably would have made this initiative in this general time-frame regardless of the Iran scandal. The scandal is obviously part of the general world picture, and the Soviets may feel this is a chance to test the Reagan administration and get a quick and reasonable response, since presumably the administration would like to show some success. If, on the other hand, the United States does not respond, the Soviets clearly have lost nothing and will have a strong position in the eyes of Europe and the world.

Q: *How would you resolve the remaining problems on verification and short-range missiles?*

Keeny: There are no heroic efforts needed to verify this agreement, which maintains extremely low levels of missiles. The existing national technical means, with some modest cooperative efforts, should be adequate. Elaborate on-site verification arrangements with respect to production are certainly unnecessary.

In the case of short-range missiles, since the Soviets have already said they are prepared to freeze the number of these missiles and Gorbachev has also stated they would withdraw some of the existing missiles further from the front, this is almost an irrelevant military issue. It is essentially a political issue with respect to the allies. So I think that very minimal understandings in this area are necessary.

These marginal issues can be made immensely complex and open up a whole concept of verification with respect to other weapon systems, many of which are dual-capable, in the European theater.

Steinbruner: There is one potential complication here, in that one of the systems being removed is a nuclear cruise missile. These bear a striking resemblance to other cruise missiles that we are planning for other parts of our force. The Soviets have some reason here to demand extremely intrusive verification measures in the United States, whereas the SS-20 is essentially an isolated system that doesn't have that kind of implication. So, if the United States pushes too hard on that verification problem, it may find itself outbid on the subject.

"There are no heroic efforts needed to verify this agreement, which maintains extremely low levels of missiles. The existing national technical means, with some modest cooperative efforts, should be adequate."

Q: *How does the short-range missile issue relate to the conventional force imbalance and the political issue of U.S. support for the allies?*

Steinbruner: This is one of those discussions that's going to keep security specialists in business for a long time. There will be a renewed public discussion of the nature of the conventional balance. In the course of that discussion, the trend of discovery probably will be that the conventional balance is not nearly as bad as has been historically depicted, and that the short-range systems play a very minor role in it. We are also likely to discover that there has been a long-term trend in the Soviet Union to separate conventional from nuclear forces and to remove nuclear forces from forward positions. It's been fairly clear for some time that the Soviets are trying to pull their nuclear weapons off the front lines. So, the Soviet arms control proposal supports their

underlying doctrine, and it implies the pulling back of these short-range forces.

Kelleher: I want to draw the distinction between short-range INF (SRINF) systems and shorter-range systems. Under a number of unilateral moves, the West is already moving to reduce its short-range, so-called battlefield, systems—those with a range under 200 kilometers. The imbalance comes in the 300 to 1,000 kilometer SRINF range, where the West has consistently chosen not to develop a system. The question becomes one of whether asymetrical reductions, given tactical air power and sea-based systems, make sense. I would argue that they do. Anyone who simply looks category by category misses this kind of balance.

"This kind of reduction to zero presents very few political problems for the Soviet Union. All of the problems are in the West and the Soviets had to consider that was certainly to their advantage."

It's interesting that the East German statement supporting the pull-back of short-range systems came as quickly as it did. One could hear the music of the orchestration slightly off in the background, saying that they would be committed to the removal from their territory of any systems of this kind. One waits for the Czechs to make the same statement but hasn't heard from them yet. This will put increasing pressure on West Germany to support the removal of Pershing II and GLCM deployments.

Keeny: If you want an agreement, there has to be a cut-off at some point. We haven't even mentioned the fact that both sides have a subtantial number of nuclear-armed aircraft in the area, and sea-launched cruise missiles. So you have to make a choice: do you want to go for an early agreement, or do you want to pursue this question forever?

Q: *Do you leave room for the possibility that this proposal is a victory for administration tactics? What about the possibility offered by ACDA Director Kenneth Adelman that the U.S. tough strategy works to get the Soviets to give ground? And do you think the proposal is part of a Gorbachev plan to seek a broader deal on strategic weapons?*

Mendelsohn: As far as the Adelman statement is concerned, you have to ask yourself the question, "Did we force the Soviets to take a deal that was not to their advantage?" That's basically what he's saying, and I just don't think that's right.

This kind of reduction to zero presents very few political problems for the Soviet Union. All of the problems are in the West, and the Soviets had to consider that was certainly to their advantage. Furthermore, the Soviets are anxious to build some kind of momentum, because they hope to have that spill over into the other sectors—the strategic sectors—where they have been unable to get a handle on what's happening, and hope by at least showing that they are prepared to deal in one sector, this will have a spillover in the other sector. The response to Adelman's statement is something very simple: We've got them exactly where they want us.

Q: *On the issue of verification, a principal conservative nightmare is not that Soviet INF systems will be produced and then surreptitiously moved, but that they would be surreptitiously produced and stored at the same location. How would national technical means deal with that specific problem?*

Keeny: The scenario, which has been around for 25 years, that somehow the Soviet Union is secretly producing a large number a ballistic missiles that never see the light of day, that are stacked up in warehouses somewhere to emerge on short notice, is not a credible way to operate complex strategic systems. I don't believe that anyone in the U.S. intelligence community really thinks that this has been going on in the Soviet military programs.

Q: *Could you give us your estimate on how long you think it's going to take to negotiate this treaty?*

Keeny: It's always more difficult to work out a contract, even when both sides are in agreement on it, than one would imagine. And, in this case, it's particularly complex. There would have to be extensive briefings and consultations with Congress and the allies. I think Congress would like to support the President in something positive, but there certainly would be lots of problems to resolve with the Congress.

Unlike other bilateral agreements, this one has a very strong interaction with the Europeans. Even if all of the European governments, out of political necessity, indicate their public support, there clearly is a lot of angst among the elites in those governments, and I think there would have to be extensive consultations just to develop a consensus.

So even with political will, the two sides would be lucky to reach an agreement by October 1987—the 10th anniversary of Schmidt's famous speech. ACT

The Soviet SS-20 mobile intermediate-range missile, as portrayed in the U.S. DoD publication Soviet Military Power. *If current negotiations succeed, all SS-20s will be withdrawn from the European U.S.S.R.*

Sam Nunn on the Senate Floor . . .

ABM Reinterpretation 'Fundamentally Flawed'

In three speeches on March 11, 12, and 13, Senator Sam Nunn (D-GA), chairman of the Senate Armed Services Committee, presented to the Senate and to the American public his much anticipated report on the Interpretation of the ABM Treaty. *In 1986, Nunn and other senators waged a lengthy tug-of-war with the Reagan administration to gain access to parts of the classified negotiating record and other documents related to the ABM Treaty [see* ACT, *September 1986]. Finally granted Senate access to the record last summer, Nunn took the lead in examining the evidence in support of the administation's ABM Treaty reinterpretation, which would allow development and testing of mobile or space-based antiballistic missile weapons based on innovative or exotic technologies. Nunn also examined the 1972 Senate ratification proceedings and subsequent U.S.-Soviet practice under the treaty.*

Nunn's presentation, excerpted here from key sections of his three-part report, completely supports the traditional interpretation and criticizes the process by which the administration arrived at its reinterpretation as "fundamentally flawed."

Nunn's document is important for several reasons. His position as chairman of the Senate Armed Services Committee gives him a substantial ex officio *voice in defense policy. This is doubly true here, because of the Senate's constitutional role in approval of treaties. Nunn, who is highly respected in the Senate as a serious analyst of military issues, has been mentioned as a possible presidential candidate in 1988. Moreover, the issue is ripe for resolution. With influential voices in and out of the administration calling for accelerated SDI testing leading to early deployment, Congress must now address the question of whether such testing would or would not violate the ABM Treaty. Nunn's report marks a turning point in that debate.*

—The Editors

Preamble

For the past year and a half, the United States has been embroiled in a contentious and arcane internal dispute over the correct interpretation of those portions of the 1972 ABM Treaty which pertain to the development and testing of futuristic or so-called "exotic" ABM systems. This controversy was precipitated in October 1985 when the Reagan administration announced with no advance notice or congressional consultations that the interpretation of the treaty which successive U.S. administrations had upheld since 1972 was incorrect.

The debate on the reinterpretation issue has necessarily been legalistic. Treaties are, after all, the law of the land, and the President is charged with executing the law. Moreover, the Senate has a crucial consitutional role in treaty-making and thus has a direct interest in ensuring that treaties are accurately presented and faithfully upheld. If the President can unilaterally change treaty obligations which were clearly understood and accepted by the Senate at the time it consented to ratification, it dramatically alters the Senate's constitutional role as a co-equal partner in this area.

For these reasons, it is imperative that the administration's case for the reinterpretation be subjected to a rigorous legal analysis. Some have accused those who do not accept the administration's case for the reinterpretation of allowing "legalisms" to stand in the way of necessary progress in the Strategic Defense Initiative. Others have accused the administration—in one columnist's phrase—of "lookin' fer loopholes" in the treaty through what might be called "sharp practices."

I believe that it is important to put aside accusations as to motive and judge the facts as they stand. If the reinterpretation is legally correct, then our nation has every right to proceed accordingly. But if it is not legally correct, then manipulating the law of the land is not acceptable.

Before beginning this legal analysis, there are, however, a few points I want to make about the broader policy context within which this issue must be debated.

First, I do not believe that the reinterpretation debate should be cast in terms of whether one is for or against the ABM Treaty. The treaty was accepted in 1972 by the Nixon administration and the United States Senate on the assumption first, that the Soviet Union would strictly observe its terms, and second, that significant reductions in strategic offensive arms would be accomplished within five years.

Neither expectation has been fulfilled. The Soviets have not restrained the relentless expansion of their strategic offensive forces. Their massive investment in strategic defenses (primarily air defenses)—while not a violation of the ABM Treaty—does contradict the spirit of the agreement; that is, that both sides recognized and accepted that there can be no shield against retaliation. And violations such as the Krasnoyarsk radar undermine the integrity of the agreement.

In light of these considerations, the Soviet Union must recognize that the U.S. commitment to the ABM Treaty cannot be deemed unalterable or open-ended—whether or not the traditional interpretation of the treaty is upheld. If arms control or unilateral strategic modernization efforts (such as moving to mobile ICBMs) fail to restore stability to the strategic balance in the future, the United States may well have to deploy strategic defenses designed to protect its retaliatory forces and command, control and communications. Unless the ABM Treaty could be amended by mutual agreement to permit such deployments, this action would necessarily require the United States to exercise its right under the supreme national interest clause of the treaty to withdraw on six months notice.

Certainly the U.S. decision to withdraw from the ABM Treaty would be enormously controversial at home and abroad. I am not counselling this course at this time. Nonetheless, the American public and our allies need to understand that if we cannot solve current strategic vulnerabilities through arms control or our own strategic programs, we may have no recourse but to consider deploying some form of strategic defense.

Second, those who support the reinterpretation in the name of accelerating the SDI may be laboring under a fundamental

misimpression. There is a strong case that the specific SDI early deployment system now favored by Secretary of Defense Caspar Weinberger cannot be developed or tested under either interpretation.

Finally, those who would cast this issue as a question of whether one is for or against Soviet violations of arms control agreements miss the point: there are other, more honorable, responses available to the United States. These include, first, insisting that the Soviets correct the violations; second, proportional U.S. responses; and third and last, abrogation of the agreement.

Because of the grave constitutional issues at stake, and my responsibilities as chairman of the Armed Services Committee and co-chairman of the Arms Control Observer Group, I have taken a special personal interest in this matter and have spent countless hours . . . reviewing the negotiating record, which is still classified.

Background

In its shortest form, [the traditional interpretation holds] that the development and testing of mobile/space-based exotics is prohibited under the treaty. The [reinterpretation] formulated by the current State Department Legal Advisor, Abraham Sofaer . . . in its shortest form, holds that the development and testing of mobile/space-based exotics is permitted under the treaty.

The traditional interpretation maintains that the treaty text is clear on its face. To the extent that other sources of interpretation are consulted, the traditional interpretation maintains that they are consistent with the traditional reading of the treaty's text.

Because Sofaer concludes that the treaty text is ambiguous, he contends that the negotiating record must be examined to determine the meaning of the treaty. In this regard, the reinterpretation holds that the negotiating record, which is classified, clearly supports the reinterpretation. The reinterpretation also considers statements made to the Senate during its ratification proceedings, and concludes that they support the broader view. In other words, the reinterpretation concludes that the Nixon administration did not present the traditional interpretation to the Senate in 1972. Finally, the reinterpretation considers U.S. and Soviet post-ratification statements between 1972-1985 and concludes that the record is mixed. The reinterpretation, however, disputes the view that successive U.S. administrations have consistently endorsed the traditional interpretation . . . I shall address each of these assertions in my three reports.

"First, I do not believe that the reinterpretation debate should be cast in terms of whether one is for or against the ABM Treaty."

I. The Senate Ratification Proceedings

I. *The analysis of the reinterpretation has not identified a single statement in the record of the ratification proceedings which explicitly supports its case.*

The Sofaer analysis has not identified, nor did I find, any statements in the record in which any senator or any Nixon administration official explicitly stated that development and testing of mobile/space-based exotics was permitted.

"I have concluded that the preponderance of evidence in the negotiating record supports the Senate's original understanding of the treaty—that is, the traditional interpretation."

II. *The record contains a series of authoritative statements explicitly supporting the traditional view that the treaty prohibits testing and development of mobile/space-based exotics.*

In a series of statements, including authoritative written statements submitted for the record, key administration officials and senators made it clear that the treaty's prohibition on testing and development of mobile/space-based ABM systems or components applied to exotics.

a. *At the first hearing, the executive branch set forth the traditional interpretation of the treaty, expressly discussing the difference between fixed, land-based ABMs and mobile/space-based ABMs in the context of exotics.*

The question of exotics was raised in the first Senate hearing that considered the treaty. Senator Goldwater, in a question for the record to Secretary of Defense Melvin Laird, noted that he had "long favored" moving ahead with space-based ABMs capable of conducting boost-phase intercepts using "shot, nuces (sic), or *lasers*," and asked whether it was correct that nothing in the treaty "prevents development to proceed in that direction."

The written reply from DOD distinguishes between development of fixed, land-based ABMs (which is permitted by the treaty) and development of mobile/space-based ABMs (which is prohibited). The reply expressly related these provisions to lasers, an "exotic" ABM component:

> With reference to development of a boost-phase intercept capability or lasers, there is no specific provision in the ABM Treaty which prohibits development of such systems. There is, however, a prohibition on the development, testing, or deployment of ABM systems which are space-based, as well as sea-based, air-based, or mobile land-based. The U.S. side understands this prohibition not to apply to basic and advanced research and exploratory development of technology which could be associated with such systems, or their components. There are no restrictions on the development of *lasers* for *fixed*, land-based ABM systems. The sides have agreed, however, that deployment of such systems which would be capable of substituting for current ABM components, that is, ABM launchers, ABM interceptor missiles, and ABM radars, shall be subject to discussion in accordance with Article XIII (Standing Consultative Commission) and agreement in accordance with Article XIV (amendments to the treaty). [Nunn's emphasis]

This statement is particularly significant because it embodies a formal, written executive branch response. It clearly sets forth the traditional interpretation of the treaty with respect to exotics, permitting development and testing only in a fixed, land-based mode. The reply makes it clear that mobile/space-based exotics are subject to the comprehensive ban on development, testing, and deployment, with the understanding—as stated in Secretary Laird's reply—that the treaty only permits "basic and advanced research and exploratory development."

It is also noteworthy that the reply clearly links the ban on development of mobile/spaced-based ABM laser systems to Article V of the treaty. Article V contains a comprehensive ban on mobile/space-based, ABM systems. Secretary Laird's express linkage between mobile/space-based exotics and Article V directly refutes the reinterpretation's analysis of the treaty's text, which asserts that Article V applies only to components existing in 1972 (i.e., missiles, launchers, and radars).

The detailed executive branch reply was omitted from an October 30, 1985 analysis of the ratification debate submitted to the Senate Armed Services Committee by Sofaer on November 21, 1985 . . .

b. *An exchange between Senator Henry Jackson and DOD's director of research and engineering confirmed the treaty's ban on testing and development of mobile/space-based exotics . . . .*

From the outset, [Senator Jackson] exhibited a keen sensitivity to the issue of exotics by focussing on laser ABMs . . . A June 22 hearing [with] testimony by Dr. John Foster, director of defense research and engineering, and Lieutenant General Walter Leber, the program manager of the Army's Safeguard ABM system . . . involved a careful discussion of the treaty's limits regarding development of ABMs using exotics, with a specific focus on the distinction between fixed, land-based systems and mobile/space-based systems.

Senator Jackson began by noting that there were limitations in the treaty on lasers and then asked whether the agreement prohibited "*land-based* laser development?" [Nunn's emphasis] Dr. Foster replied, "No sir; it does not." The text of the printed hearing reads as follows:

> Senator Jackson: Article V says each party undertakes not to develop and test or deploy ABM systems or components which are sea-based, air-based, space-based or mobile land-based.
>
> Dr. Foster: Yes sir, I understand. We do not have a program to develop a laser ABM system.
>
> Senator Jackson: If it is sea-based, air-based, space- based or mobile land-based. If it is a fixed, land-based ABM system, it is permitted; am I not correct?

Keeping the ABM Treaty Alive: What Congress Can Do

Lloyd N. Cutler

The following article is based on the testimony of Lloyd Cutler February 26 before the House Foreign Affairs Committee. Cutler, an attorney in Washington, D.C., served as counsel to President Carter in 1979-1980 and was special counsel to present the SALT II Treaty to the Congress.

The current controversy over the true interpretation and the continued existence of the ABM Treaty has prompted members of Congress concerned about the survival of the treaty to ask whether Congress can play a role in preserving it. Two questions in particular have surfaced:

1) Can Congress require the executive branch not to engage in any action that would violate a stated interpretation of the ABM Treaty with the Soviet Union?

2) Can Congress require the President not to exercise the right of the United States to withdraw from that treaty without the consent of Congress or a two-thirds majority of the Senate?

As counsel to President Carter I had the responsibility of organizing the presentation of the SALT II Treaty to the United States Senate. In the course of that assignment, I became familiar with the terms of the ABM Treaty and the SALT I freeze on offensive weapons. However, I have not examined the classified history of the ABM Treaty or of the references to it made during the SALT II negotiations. For this reason, I do not feel qualified to express a considered opinion on the legal issue of whether the "broad" or "restrictive" interpretation of the ABM Treaty is correct, other than to state my belief that the Senate ratified the treaty on the administration's representations that the "restrictive" interpretation was correct.

I confine myself in this article to the two questions set forth above. The first is whether Congress can constitutionally enact a law requiring the executive branch not to take actions that violate a stated interpretation of the ABM Treaty. In my opinion, such a law would be constitutional.

The President, of course, has the constitutional status of commander-in-chief of the armed forces. As President, the executive power of the government is vested in him, including the power to make treaties by and with the advice and consent of the Senate. But as President he must faithfully execute any constitutional laws Congress passes, and he is expressly forbidden to draw any money from the treasury but in consequence of appropriations made by law.

There is no doubt that Congress has the constitutional power to enact laws relating to foreign affairs and the national defense. It has express power to raise and support armies, to provide and maintain a navy, and to make rules and regulations for the land and naval forces. It has express power to appropriate or withhold the

Dr. Foster: That is right.

Senator Jackson: What does this do to our research—I will read it to you: section 1 of Article 5—this is the treaty: "each party undertakes not to develop"—it hits all of these things—"not to develop, test or deploy ABM systems." You can't do anything; you can't develop; you can't test and finally, you can't deploy. It is not "or."

Dr. Foster: One cannot deploy a fixed, land-based laser ABM system which is capable of substituting for an ABM radar, ABM launcher, or ABM interceptor missile.

Senator Jackson: You can't even test; you can't develop.

Dr. Foster: You can develop and test up to the deployment phase of future ABM system components which are fixed and land-based. My understanding is that you can develop and test but you cannot deploy. You can use lasers in connection with our present land-based Safeguard system provided that such lasers augment, or are an addendum to, current ABM components. Or, in other words, you could use lasers as an ancillary piece of equipment but not as one of the prime components either as a radar or as an interceptor to destroy the vehicle.

When Senator Jackson suggested that even research on ABM lasers might be prohibited, Dr. Foster said, "No." Interposed between Senator Jackson's question and Dr. Foster's answer is the following insert for the record:

> Article V prohibits the development and testing of ABM systems or components that are sea-based, air-based, space-based, or mobile land-based. Constraints imposed by the phrase "development and testing" would be applicable only to that portion of the "advanced development stage" following laboratory testing, i.e., that stage which is verifiable by national means. Therefore, a prohibition on development—the Russian word is "creation"—would begin only at the stage where laboratory testing ended on ABM components, on either a prototype or bread-board model.

The importance of this submission as an authoritative statement of Nixon administration policy is underscored by the original transcript of this hearing . . . which reveals two key points. First, Dr. Foster pledged to submit the insert after Senator Jackson had declared that "we had better find out" exactly how the treaty applied to research and development in this area. Second, the transcript reveals that Dr. Foster declared that in order to clarify

appropriation of funds for these and other purposes, and to place restrictions on the purposes for which currently or previously appropriated funds can be spent. Congress is free to exercise these powers as it sees fit so long as it does not infringe any other term of the Constitution, such as the grant to the President of the power to be commander-in-chief of the armed forces.

Accordingly, there is no doubt that Congress can constitutionally enact laws, including appropriation laws, forbidding the executive branch from expending funds to conduct a specified kind of research, development or testing, or to build or deploy a specified offensive or defensive weapon system or any component of such a system. Such a law would not appear to infringe the President's powers as commander-in-chief. In order to avoid the constitional question of whether Congress would be invading the President's executive power to interpret the meaning of a treaty, it would be preferable for the law to be drafted so as to bar the specified actions whether or not they violate the terms of the ABM Treaty.

If Congress enacted such a law and the President refused to execute it faithfully, I believe that under modern rules of standing and justiciability, members of Congress could obtain a federal court order requiring the President to do so. If that happened, I am confident the President would obey.

The second question is whether Congress could constitutionally enact a law restricting the President from exercising the right of the United States to withdraw from the ABM Treaty by delivering the notice required under the terms of the treaty. This is a much closer question. The President has the power to make treaties by and with the consent of the Senate. When the Senate advised and consented to the ABM Treaty, it did not condition its consent on its own right, or the right of the entire Congress, to approve any subsequent exercise of the withdrawal power.

The same was true of the Taiwan Defense Treaty. When President Carter exercised the right of the United States to withdraw from that treaty, Senator Barry Goldwater brought suit to enjoin him from doing so without the advice and consent of the Senate. The Court of Appeals held the suit justiciable and decided the question in favor of the President. Under the reasoning of the court, the result might have been different if the Senate had conditioned its original advice and consent, or if Congress subsequently enacted a law creating such a condition. (See *Goldwater v. Carter*, 617 F.2d 697, 715 [D.C. Cir. 1980].) However, the court did not have either of these hypothetical situations before it, and it expressly refrained from deciding them.

In any event, the Supreme Court reversed the Court of Appeals without reaching the merits. It held instead that the case presented a "political question" between the legislative and the executive branches which the Constitution intended these two branches to work out between themselves, and that the case was not justiciable by the judicial branch.

Accordingly, while I believe a new law restricting the President's right of withdrawal from the ABM Treaty might well be constitutional, the President's lawyers might argue plausibly to the contrary. If the President delivered the notice of withdrawal anyway, it is at least doubtful after *Goldwater* that the judicial branch would intervene.

Under these circumstances, if Congress decides to enact a law, the better legal course by far would be to draft a bill barring the expenditure of currently or previously appropriated funds for specified purposes. The bill, of course, would have to be a statute or joint resolution that would be presented to the President for his signature, not a mere concurrent resolution. If the President exercised his veto, the bill would not become law unless Congress succeeded in overriding the veto.

ACT

this issue, *the submission would reflect a detailed review of the negotiating record . . . .*

Several observations about the extensive exchange between Senator Jackson and Dr. Foster deserve emphasis. First, it includes a formal, written submission, which provided the executive branch with an opportunity to prepare an official coordinated statement after review of the negotiating record. As such, it clearly represents an authoritative statement of the administration's position. Second, the fact that the statement refers to Article V (the treaty's ban on testing, development, and deployment of mobile/space-based ABMs) in the context of lasers (an "exotic" component) again refutes the reinterpretation's premise that Article V does not apply to ABMs using exotics.

The Jackson/Foster exchange directly contradicts the reinterpretation of the treaty. The credibility of the Sofaer analysis is further undermined by the distorted manner in which it treats this crucial dialogue between a leading senator and a high-level Nixon administration witness. For example:

1. The version of this extensive Jackson/Foster exhange presented in Sofaer's October 1985 analysis of the ratification proceedings and in Sofaer's June 1986 *Harvard Law Review* article advocating the reinterpretation is greatly abbreviated. While the reinterpretation acknowledges that Dr. Foster's comments support the traditional interpretation, the only portion of the entire exchange which it cites is the following:

> Dr. Foster: One cannot deploy a fixed, land-based laser ABM system which is capable of substituting for an ABM radar, ABM launcher, or ABM interceptor missile . . . You can develop and test up to the deployment phase of future ABM system components which are fixed and land-based.

Foster's explicit confirmation that development and testing of space-based, or mobile land-based laser ABMs was prohibited is omitted in the reinterpretation. There is also no mention in the reinterpretation of Foster's written submission nor its linking the discussion of limits on laser ABMs to Article V.

2. Dr. Foster, a presidential appointee, was the highest-ranking technical official, and third-ranking civilian in the Defense Department. He had served in his position since 1965. Nonetheless, the Sofaer analysis tries to disparage his testimony by stating Foster was "not involved in the drafting or negotiation of the treaty." The suggestion that the director of defense research and engineering would not have acquainted himself thoroughly with the treaty's effect on programs under his supervision prior to representing the administration before the Armed Services Committee is absurd. At any rate, as discussed above, the transcript confirms that Dr. Foster's written submission was based on a detailed review of the negotiating record.

"I believe it is appropriate at this juncture to pause for a moment and reflect how the Reagan administration could be in such serious error on its position on this crucial issue—wrong in its analysis of the Senate ratification debate; wrong in its analysis of the record of subsequent practice . . . and wrong in its analysis of the negotiating record itself."

"I believe that we need to look at the procedure by which the administration arrived at its position. I think the procedure, as more people find out more about it, will reveal itself as having been fundamentally flawed."

3. Sofaer's account of the exchange excises Senator Jackson's half of this dialogue in its entirety. As a result, anyone reading this analysis would not know that Senator Jackson had acquired a detailed understanding of the treaty limits in this area or, indeed, that the Senator took the lead in drawing out of the witness explicit confirmation of these restrictions.

4. As a result of this omission, the *only* mention of Senator Jackson in Sofaer's October 1985 analysis of *all* of the Armed Services Committee's ratification hearings is in a discussion of a hearing on July 19 . . . In a summary comment on Senator Jackson's July 19 statements, the reinterpretation concludes: "Fairly read, Senator Jackson's comments do not address future systems." By omitting the extensive June 22 Jackson/Foster exchange on laser ABMs (as well as other instances when Senator Jackson queried witnesses on the question of laser ABMs, including a highly classified session on June 26 with CIA Director Richard Helms), the reinterpretation is then able to claim in a paragraph summarizing *all congressional hearings during the ratification proceedings* that "Senator Jackson's comments do not appear to address future systems." Sofaer's assertion that Senator Jackson *never* addressed the question of limits on laser ABMs during the entire Senate debate on the ABM Treaty is flatly contradicted by the record of the debate.

c. *In a July 19 exchange with Senator Jackson, [Acting Army Chief of Staff General Bruce] Palmer confirmed that the Joint Chiefs of Staff supported the limitation under which testing and development of exotics was restricted to fixed, land-based systems.*

General Palmer provided an authoritative statement on the prohibition on development of mobile/space-based exotics:

> General Palmer: I would like to come back to the question.
>
> Senator Jackson: You are here in a professional capacity and we need your professional judgement.
>
> General Palmer: On the question of the ABM, the facts are that when the negotiation started the only system actually under development, in any meaningful sense, was a fixed, land-based system. As the negotiations progressed and the position of each side became clear and each understood the other's objectives better, it came down to the point where to have agreement it appeared that—

this is on the anti-ballistic missile side—*this had to be confined to the fixed, land-based system*. The Chiefs were consulted. I would have to go to a closed session to state precisely the place and time. They were consulted on the question of qualitative limits on the AB (sic) side and agreed to the limits that you see in this treaty.

Senator Jackson: *Even though it cannot be monitored?*

General Palmer: Yes.

Senator Jackson: I just wanted that; so the Chiefs went along with the concept here that involved—

General Palmer: A concept that does not prohibit the development in the fixed, land-based ABM system. *We can look at futuristic systems as long as they are fixed and land-based.*

Senator Jackson: I understand.

General Palmer: *The Chiefs were aware of that and had agreed to that and that was a fundamental part of the final agreement.* [Nunn's emphasis]

Sofaer's analysis of this discussion omits Palmer's crucial closing comment that the JCS were aware of the limits on development and testing of laser ABMs, had agreed to them, and recognized that this was "a fundamental part of the final agreement." Thus, the record demonstrates that Sofaer's assertion that Senator Jackson did not address the question of exotics during the ratification debate is a complete and total misrepresentation. It also underscores the inadequacy of its analysis by its omission of this additional, and authoritative, confirmation that the treaty banned the development and testing of all but fixed, land-based exotics.

[*Nunn also noted a number of ambiguous statements that did not provide evidence for either interpretation.*]

"Absent compelling evidence that the contract consented to by the United States Senate was not the same contract entered into between the Nixon administration and the Soviet Union—and we do not have that kind of evidence—the treaty presented to the Senate at the time of ratification should be upheld."

Part II: Subsequent Practice Under the ABM Treaty

[I also reviewed] the available record of U.S. and Soviet practices—including their public statements—since the treaty was signed in May 1972 . . . Both international law and U.S. domestic law recognize that the practices of the parties, including their statements, provide evidence of their intent with regard to the meaning of a treaty.

"On the contrary, I noted that successive administrations, including the Reagan administration, had prior to 1985 consistently indicated that the treaty banned the development and testing of mobile/space-based ABMs using exotics."

The record of U.S. and Soviet subsequent practice now available to the Senate is far from comprehensive. For example, the Senate has no access to statements made by American and Soviet officials in the 1972-1985 timeframe in the course of negotiations in SALT II, START, INF or the Standing Consultative Commission (SCC). Nor does the Senate have access to statements made by U.S. or Soviet officials during summit meetings, foreign minister-level discussions or routine diplomatic contacts.

President Reagan recently directed the State Department to conduct a thorough review of this issue. It is unfortunate that a rigorous administration study of subsequent practice—which has an important bearing on the whole question of treaty interpretation—was not conducted prior to such a major shift in U.S. policy . . .

Sofaer claims that prior to the Reagan administration's announcement of the reinterpretation in October 1985, the U.S. government had *not* held a consistent position on the correct interpretation of the treaty provisions governing mobile/space-based exotics. In short, Sofaer denies that the traditional interpretation is in fact "traditional."

1. *There were no executive branch statements that explicitly support the reinterpretation.*

- Sofaer has not identified any official statements prior to October 1985 in which the U.S. government expressly took the position that the treaty permitted testing and development of mobile/space-based exotics.

2. *U.S. statements . . . expressly support the traditional view.*

The Arms Control Impact Statements submitted by the executive branch through FY86, including those submitted by the Reagan administration, consistently took the position that mobile/space-based ABMs using exotics could not be tested and developed under the ABM Treaty. These statements include express reaffirmation by the Reagan administration of the traditional interpretation. The 1985 SDI Organization Report To Congress . . . submitted to the Congress in March 1985 . . . is further confirmation of the traditional view by the Reagan administration.

[*Nunn again cited a number of ambiguous statements which did not provide evidence for either interpretation.*]

Based on the information provided to the Senate to date by the State Department, I found no evidence which contradicted the Senate's original understanding of the meaning of the treaty. On the contrary, I noted that successive administrations, including the Reagan administration, had prior to 1985 consistently indicated that the treaty banned the development and testing of mobile/space-based ABMs using exotics.

Part III: The ABM Treaty Negotiating Record

Let me sum up, then, where the situation now stands after the first two reports. First, the Reagan administration made a case for a broader reading of the treaty based, in part, on an analysis of the Senate ratification proceedings, arguing that the record of this debate supported the reinterpretation. I found this case not to be credible. Second, the Reagan administration made a case for a broader reading of the treaty based, in part, on subsequent practice, arguing that the record of the U.S. and Soviet statements and practices supported the reinterpretation. I also found this case not to be persuasive.

"To say that this is a woefully inadequate foundation for a major policy change is a vast understatement."

Some advocates of the broader reading—including its principal author, Judge Sofaer—now appear to be hanging their hats on the negotiating record, arguing that the negotiating record provides persuasive or compelling support for their case. As I noted, the administration's focus on the negotiating record as a primary source of treaty interpretation confronts us with three separate possibilities:

- If the negotiating record is consistent with the original meaning of the treaty as provided to the Senate by the executive branch, the traditional interpretation would prevail beyond question.
- If the negotiating record is ambiguous or inconclusive, there would be no basis for abandoning the traditional interpretation. Absent compelling evidence that the contract consented to by the United States Senate was not the same contract entered into between the Nixon administration and the Soviet Union—and we do not have that kind of evidence—the treaty presented to the Senate at the time of ratification should be upheld.
- If, on the other hand, the negotiating record clearly establishes a conclusive basis for the reinterpretation, this would mean that the President signed one contract with the Soviets and the Senate ratified a different contract. Such a conclusion would have profoundly disturbing constitutional implications, and as far as I know would be a case of first impressions . . .

It is important to note that the material presented to the Senate by the Department of State in terms of the negotiating record consists of a disjointed collection of cables and memos. This is not unusual. There is no single document or set of documents that constitutes an official negotiating history. There is no transcript of the proceedings. Instead, we have a variety of documents of uneven quality. Some involve detailed recollections of conversations, others contain nothing more than cryptic comments . . .

Having been through the material, I well understand why as a matter of international law, the negotiating record is the least persuasive evidence of a treaty's meaning. For example, Lord McNair has said:

> [no] litigant before an international tribunal can afford to ignore the preparatory work of a treaty, but that he would probably err in making it the main plank of his argument. Subject to the limitations indicated in this chapter, it is a useful makeweight but in our submission it would be unfortunate if preparatory work ever became a main basis of interpretation. In particular, it should only be admitted when it affords evidence of the common intention of both or all parties.

The same view is set forth in the commentary to the Second Restatement of the Foreign Relations Law of the United States, which notes that "conference records kept by delegations for their own use . . . will usually be excluded" from consideration under international law, although they may be considered by national courts for domestic purposes.

The materials in the negotiating record provided the Senate simply do not compare in quality to the debates and reports normally relied upon for interpretation of legislation. Nonetheless, the records provided to the Senate contain a significant amount of material bearing on the issue of the development and testing of exotics.

Based on my review, I believe that Judge Sofaer has identified some ambiguities in this record. One cannot help but wish that the U.S. and Soviet negotiators had achieved a higher level of clarity and precision in their drafting of this accord. Of course, as we in the Senate well know, writing clear law is a worthy goal but one which is not easily attained. These ambiguities are not, however, of sufficient magnitude to demonstrate that the Nixon administration reached one agreement with the Soviets and then presented a different one to the Senate.

Photo: Janet Fries, *The American Lawyer*

State Department Legal Adviser Abraham Sofaer, whose novel reinterpretation of the ABM Treaty sparked current debate.

Notwithstanding the ambiguities, the negotiating record contains substantial and credible information which indicates that the Soviet Union did agree that the development and testing of mobile/space-based exotics was banned. I have concluded that the preponderance of evidence in the negotiating record supports the Senate's original understanding of the treaty—that is, the traditional interpretation.

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Analysis of the PRESIDENT'S REPORT ON SOVIET NONCOMPLIANCE WITH ARMS CONTROL AGREEMENTS

April 1987

Executive Summary

The President's latest *Report on Soviet Noncompliance of Arms Control Agreements*, dated March 10, 1987, charges the Soviet Union with a "continuing pattern" of violations of seven arms control agreements, and a "likely" violation of an eighth. The report closely follows last year's noncompliance report, reaffirming every charge while offering neither new charges nor new evidence. Moreover, the report concludes that the Soviet Union has "made no real progress toward meeting our concerns," and states that "compliance with past arms control commitments is an essential prerequisite for future arms control agreements."

The administration's most significant charge is that the Soviet Union may be "preparing an ABM defense of its national territory," in violation of the ABM Treaty's fundamental purpose of banning the deployment of a territorial defense against strategic ballistic missiles or the base for such a defense. A Soviet breakout from the fundamental limits of the ABM Treaty could threaten U.S. security and would provide a clear basis for U.S. withdrawal from the ABM Treaty.

The administration's charge that the aggregate of Soviet ABM-related activities suggests that the Soviet Union may be preparing a nationwide defense is simply not supported by the evidence. The administration uses the Krasnoyarsk early warning radar, the one clear Soviet violation of the ABM Treaty, in a very misleading fashion, suggesting it is in fact a battle-management radar. The new report also presents as evidence three new Soviet early warning radars, even though it acknowledges they are in themselves "consistent with the ABM Treaty's provision on ballistic missile early warning radars." The other supporting evidence, described as "likely," "probable," or "ambiguous" violations, are all old issues of marginal military significance, based on contentious interpretations of the available data and the treaty language. This collection of activities does not support the administration's suggestions that the Soviet Union may be preparing a territorial defense against ballistic missiles.

As discussed in our analysis, the administration continues to distort the overall compliance picture, exaggerating problem areas of little military significance while ignoring the undisputed positive record of Soviet compliance with most treaty provisions, including the areas of central importance. Moreover, the administration's report ignores recent Soviet actions that have reduced the potential for controversy in several areas: the Soviet Union has removed equipment possibly related to the SS-16 ICBM from the Plesetsk test range, reduced production of the Backfire bomber, agreed to a new Common Understanding on concurrent operations of air defense and ABM components, and dismantled a number of disputed radars at ABM test ranges. In addition, the Soviet Union has continued to dismantle strategic systems to remain in compliance with SALT II even after the United States formally repudiated and intentionally exceeded the SALT II limits.

The administration's report does not discuss SALT II compliance issues in detail, because the United States has repudiated SALT II and no longer considers it to be an existing agreement. Nevertheless, the administration's report cites several Soviet SALT violations as part of the alleged pattern of Soviet noncompliance and offers them as the principal rationale for the U.S. abandonment of SALT II. Considering the gravity and consequences of these charges, our analysis examines the three principal SALT II compliance issues and finds that it is by no means clear that the Soviet Union has in fact violated that agreement.

The report fails to take into account new evidence that casts even greater doubt on some of its charges. In the areas of chemical and biological warfare and the Threshold Test Ban Treaty, significant new evidence throwing doubt on the administration's charges has come to light since the last report was issued, yet the administration's charges remain the same.

The administration's distortions of the compliance problem undermine confidence in the arms control process, thereby dimming future prospects for arms control agreements.

An Arms Control Association Staff Analysis

The Anti-Ballistic Missile Treaty

The Krasnoyarsk Radar

According to the March 10, 1987, report, "The U.S. Government reaffirms the conclusion in the December 1985 report that the new large phased-array radar under construction at Krasnoyarsk constitutes a violation of legal obligations under the Anti-Ballistic Missile Treaty of 1972."

In mid-1983, a new large phased-array radar (LPAR) was discovered under construction in central Siberia at Abalakovo, north of the city of Krasnoyarsk, which is about 750 kilometers from the nearest Soviet border. The radar is oriented toward the northeast, away from the border.

Such large phased-array radars are affected by several treaty provisions, which are tied together in Agreed Statement F. Agreed Statement F prohibits either side from deploying large phased-array radars except within permitted ABM deployment areas, within permitted ABM test ranges, as early warning radars deployed along the national periphery and oriented outward, or for space-tracking or national technical means of verification.

The Soviet Union argues that the Krasnoyarsk radar is a space-tracking radar as allowed by Agreed Statement F. The administration argues that the radar's "siting, orientation, and capability" indicate that it "is primarily designed for ballistic missile detection and tracking," not space tracking. Therefore, the administration charges that the Krasnoyarsk radar is either an early warning radar which is neither on the periphery of the Soviet Union nor oriented outward, or an ABM battle-management radar outside permitted ABM deployment areas or test ranges, and is therefore a violation of the ABM Treaty. The United States reportedly raised the issue in the Fall 1983 session of the Standing Consultative Commission (SCC), emphasizing the Krasnoyarsk radar's similarity to other permitted Soviet early warning radars, the fact that it fills a significant gap in Soviet early warning coverage, and the fact that the radar is ill-suited for other permitted functions, such as space-tracking. For these reasons, the United States has declared it a violation and called for its dismantlement.

In October 1985 the Soviet Union proposed to halt construction of the Krasnoyarsk radar if the United States halted construction of a large phased-array radar for early warning at Thule, Greenland, and cancelled its plans to deploy a similar radar at Fylingdales Moor, Great Britain. The Soviet Union has charged that both of these radars are in violation of the ABM Treaty's limits on large phased-array radars for early warning. The United States has refused to consider this offer, arguing that the U.S. radars are legal modernizations of existing radars.

The administration's charge that Krasnoyarsk violates the ABM Treaty appears to be correct. The location and orientation of this radar, the elevation of its transmitting and receiving faces, and its similarity to the Soviet Pechora-type early warning radars place it in violation of the treaty. While the radar could well have some space-tracking capabilities, the Soviet claim that the radar is primarily intended for space-tracking does not appear to be consistent with the evidence.

The Krasnoyarsk radar appears to have been placed in its illegal inland location primarily to provide cost-efficient early warning and not to serve a battle management function in connection with a nationwide ABM system.

The Soviet offer to stop construction in exchange for similar U.S. action at Thule and Fylingdales represents at least a tacit admission that the Krasnoyarsk radar is a violation. Without going into a complete discussion of the legality of the two U.S. radars, it would appear that the two U.S. radars raise serious questions concerning U.S. compliance with the ABM Treaty.

The Krasnoyarsk radar appears to have been placed in its illegal inland location primarily to provide cost-efficient early warning and not to serve a battle management function in connection with a nationwide ABM system. The radar is an undefended, soft target which would be extremely vulnerable to attack; and by virtue of its location, it would be of very little value as part of a nationwide defense. The Central Intelligence Agency has explained that because the Krasnoyarsk radar is a large fixed installation, it is "vulnerable to direct attack," and "susceptible to degradation from nuclear blackout effects." Moreover, the CIA has reportedly concluded that the radar is "not well suited" for an ABM role because it "does not cover the path of incoming U.S. ICBMs because it is too far east and is pointing in the wrong direction." Finally, the Krasnoyarsk radar is similar to the other Pechora-type radars, which reportedly operate at a frequency of about 150 MHz. This frequency is well-suited for early warning but much less effective for an ABM battle-management role (the U.S. Missile Site Radar once deployed at Grand Forks and the Soviet Pushkino ABM radar operate at frequencies more than ten times as high). The lower frequency is extremely susceptible to "blackout" from nuclear blasts and provides less accurate tracking information than higher frequency radars.

For all these reasons, it can be concluded that the radar, although in an illegal location, does not provide substantial battle-management capabilities and does not fundamentally undercut the treaty's objectives in constraining the location of LPARs to prevent their use in a battle-management role.

Mobility of ABM System Components

The administration charges that Soviet development and testing of rapidly deployable ABM components represent "a potential violation" of the ABM Treaty's ban on mobile ABM systems and components.

Article V of the ABM Treaty prohibits the development, testing, and deployment of mobile land-based ABM systems and components. Mobile ABM components are defined in a common understanding as being those that are "not permanent fixed types." In the mid-1970s, the Soviet Union began testing two new radars, the Flat Twin and the Pawn Shop, partly in connection with its ABM test program. There have been estimates that the Flat Twin, the larger of the two types, could be set up on a prepared site in several months. U.S. concern was originally aroused by the fact that a Flat Twin radar, which had initially been tested at the Sary Shagan ABM test range, was subsequently disassembled and moved to Kamchatka within a period of months, rather than the years required to build most previous ABM radars. The Pawn Shop is a radar housed in a van-size container, without wheels or any other noticeable facilities for mobility. Reportedly, it has never been observed to have been moved.

The Pawn Shop and Flat Twin were first observed more than 15 years ago. Reports indicate that, during this entire period, the radars have not been observed anywhere except within permitted test areas, and there have never been more than six in existence. Recently, press reports indicate that "several" of the Pawn Shop radars at the Sary Shagan test site have been completely dismantled. The Flat Twin radar at Kamchatka appears to have remained intact.

The issue in this case is whether these radars should be considered "mobile," defined by Common Understanding C as "not permanent fixed types." During the time the treaty was being drafted, the United States was concerned about the mobility of the Soviet SA-2 air defense system, components of which could be dismantled and quickly reassembled at a new site. Therefore, the U.S. view was that if a component was moved within a week or less, it would be considered mobile and therefore banned by the treaty. Neither the Flat Twin nor the Pawn Shop would appear to fit this interpretation of "mobile." As a 1978 U.S. government report on the subject concluded:

> The [new ABM system undergoing testing] and its components can be installed more rapidly than previous ABM systems, but they are clearly not mobile in the sense of being able to be moved about readily or hidden. A single operational site would take about half a year to construct. A nationwide ABM system based on this new system under development would take a matter of years to build.

Apparently, very little activity with regard to these two radars has taken place since the 1978 report was written and none of the radars have been deployed at the permitted Moscow deployment area or elsewhere in the Soviet Union. Therefore, there is little evidence for the administration's charge that these radars represent a "potential violation" of the treaty. The Soviets reportedly never had more than six such radars at test sites, and have now dismantled several of them. There appears, therefore, to be no basis whatsoever for the administration's charge that Soviet activity in this area may be part of an effort to create a base for a defense of its national territory.

There is little evidence for the administration's charge that the Pawn Shop and Flat Twin radars represent a "potential violation" of the ABM Treaty.

Concurrent Operations of ABM and Air Defense Components

The administration charges that concurrent operations of Soviet air defense radars at ABM test ranges constitute a "highly probable" violation of Article VI of the ABM Treaty, which bans testing of non-ABM systems and components "in an ABM mode."

During 1973 and 1974, U.S. intelligence observed that an air defense radar associated with the SA-5 SAM system had been operating at the Sary Shagan test range during ABM tests. While there are several possible purposes for radars at an ABM test range other than testing "in an ABM mode"—such as range safety, instrumentation, and defense of the range—the circumstances constituted a basis for concern, and the United States raised the issue in the SCC. The activities in question stopped shortly thereafter. A classified agreed statement was negotiated in the SCC and signed in 1978, which reportedly regulated the concurrent testing of air defense radars and ABM components. Subsequently, the United States again expressed concerns over operations of air defense radars at the Sary Shagan range, leading to a common understanding initialed in 1985. This understanding reportedly bans *all* uses of air defense radars during ABM tests, except in the unlikely event that hostile aircraft are clearly in the vicinity.

The "concurrent operations" issue is a prime example of the administration's tactic of making public charges on issues that could be—or in this case apparently already have been—resolved in the Standing Consultative Commission.

This issue is a prime example of the administration's tactic of making public charges on issues that could be (or in this case apparently already had been) resolved in the SCC. The SCC's record in handling this question has been impressive: the Soviets ceased their initial activity soon after the question was raised, and two subsequent agreements have been negotiated. The 1985 understanding, reportedly banning essentially all concurrent operations of air defense radars during ABM tests, should resolve the issue once and for all. Despite this constructive history, the administration has consistently referred to this issue as a "highly probable" violation in its compliance reports, and has not mentioned the 1985 agreement designed to resolve the problem.

Whatever the actual purpose of the past concurrent operations of the SA-5 radar, they by no means made the SA-5 system ABM-capable. The SA-5 radar is an antiquated mechanical-scan system, now being sold to Third World clients such as Libya and replaced by newer air defense systems. As a 1978 Carter administration report pointed out, while the SA-5 operations were in a grey area, "much more testing, and testing significantly different in form, would be needed before the Soviets could achieve an ABM capability for the SA-5 . . . Extensive and observable modifications to other components of the system would have been necessary, but these have not occurred." There is no evidence to support the administration's suggestion that these past concurrent operations are part of a Soviet preparation for an ABM defense of its national territory.

ABM Capability of Modern SAM Systems

While acknowledging that "the evidence . . . is insufficient," the 1987 report reaffirms the judgment of the December 1985 report that the Soviet SA-12 surface-to-air missile system may have some ABM capabilities, in contravention of Article VI of the ABM Treaty, which prohibits non-ABM systems with ABM capabilities, and testing of non-ABM systems "in an ABM mode."

The SA-12 is a surface-to-air missile system designed for defense against both aircraft and tactical ballistic missiles. It has been tested against the SS-12, a tactical ballistic missile with a range of roughly 900 kilometers. The ABM Treaty allows antitactical ballistic missiles (ATBMs), but forbids giving them ABM capabilities or testing them "in an ABM mode." The definition of testing "in an ABM mode" was spelled out in a 1978 SCC agreed statement, which the administration describes as stating in part that "an interceptor missile would be considered tested in an ABM mode if it had attempted to intercept a strategic ballistic missile or its elements in flight trajectory," which would include a target missile "with the flight trajectory characteristics of a strategic ballistic missile or its elements over that portion of the flight trajectory involved in the test."

ATBM systems are an inherent grey area of the ABM Treaty. The exact point at which an ATBM system begins to have some ABM capability is not defined. The administration does not actually charge that the SA-12 has been tested against missiles with "the flight trajectory characteristics of strategic ballistic missiles," and there appears to be little evidence to suggest that the SA-12 has any significant ABM capability. Even against tactical ballistic missiles the SA-12 has apparently had a poor record, reportedly intercepting its target only once in 20 tests. There is no evidence to support the charge that the development of this ATBM system is part of a preparation for a nationwide defense against strategic ballistic missiles. It should also be noted that the United States is also upgrading an air-defense system, the Patriot, for an ATBM role.

Reload of ABM Launchers

The administration argues that Soviet actions relating to reloadable ABM launchers create an "ambiguous situation" with respect to the ABM Treaty's ban on development and testing of rapidly reloadable launchers, and is "a serious concern."

Article V of the ABM Treaty prohibits the development, testing, and deployment of "automatic or semi-automatic or other similar systems for rapid reload of ABM launchers." Thus, the treaty does not ban reloadable ABM launchers, but bans ABM launchers with a "rapid reload" capability. During the negotiations, the United States reportedly indicated that it would consider an ABM launcher to be rapidly reloadable if it could be reloaded in a "strategically significant" period of time. The goal was to prevent either side from expanding the very limited firepower of the permitted ABM system by developing the capability to fire several interceptors from each of the allowed 100 launchers during a missile attack.

Reload activities have reportedly been observed involving two Soviet ABM interceptors, the Galosh and the newer SH-08 Gazelle interceptor, which is similar to the U.S. Sprint missile. According to the administration, a Galosh launcher has been reloaded and refired, and a Gazelle launcher has been reloaded but was not then refired. The administration reports that these reloads took place in "much less than a day;" some press reports indicate that the reloads required roughly two hours. The administration has not indicated publicly how frequently these reload activities may have occurred, but recent reports suggest that one of the launchers was only reloaded once in 1983, and that reloading activities have not been repeated since then.

The issue hinges on whether the Soviet reload activities constitute "rapid" reload. During the ABM Treaty negotiations, the United States informed the Soviet Union that the ban on rapidly reloadable launchers would not require any changes in existing Soviet systems. At the time, U.S. intelligence reportedly estimated that the Galosh launchers could be reloaded in as little as 15 minutes (this estimate was later lengthened). Since the more recently observed reloads reportedly took well over an hour, it does not appear that the Soviet systems should be considered "rapidly reloadable." There is no evidence to support the administration's suggestion that Soviet ABM reload capabilities are part of preparations for a nationwide defense.

Preparation of a Territorial Defense

The administration charges that "the aggregate of the Soviet Union's ABM and ABM-related actions (e.g., radar construction, concurrent testing, SAM upgrade, ABM rapid reload and ABM mobility) suggests that the USSR may be preparing an ABM defense of its national territory," which could have "profound implications for the vital East-West balance."

Article I of the ABM Treaty states, "Each party undertakes not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such a defense." This is the underlying objective of the treaty, and therefore any breach of this central prohibition would strike at the heart of the treaty, could seriously threaten U.S. national security, and could be grounds for withdrawal from the treaty.

It does not appear that the Soviet ABM systems should be considered "rapidly reloadable," and there is no evidence to support the administration's suggestion that they are part of preparations for a nationwide defense.

Despite the seriousness of the charge, the administration provides no substantial evidence to support it. With few exceptions, the evidence rests on old and largely discredited or irrelevant assertions.

As our report indicates, the administration cites:

- a clearly illegal, but highly vulnerable, early-warning radar at Krasnoyarsk, which could not contribute significantly as a battle-management radar for a nationwide defense;
- two types of old, "mobile" ABM radars, neither of which is actually mobile, and of which only a half-dozen have ever existed, all at permitted test sites, and most of which have reportedly been dismantled recently;
- the possible operations of some antiquated air-defense radars during ABM tests—a problem that has now been resolved in the SCC;
- an ATBM system that apparently has never been tested against targets other than aircraft and short-range ballistic missiles;
- reloadable launchers that take hours, not minutes, to reload—far too long to be any real help against a major nuclear strike.

In addition, the administration reports that "Soviet activities during the past year have contributed to our concerns," citing particularly the beginning of construction of three more early-warning radars in the western Soviet Union, at Skrunda in Latvia, Mukachevo near the Czech border, and at Baranovichi, near the Polish border. Unlike Krasnoyarsk, or perhaps the U.S. radars

at Thule and Fylingdales Moor, all three of these radars are clearly in allowed locations, on the periphery of the Soviet Union and oriented outward. Hence, as intended by the drafters of the ABM Treaty, almost all of their coverage is *outside* Soviet territory, making it difficult for them to serve as ABM battle-management radars. Moreover, all are believed to be of the Pechora-type, which clearly are early-warning radars, operating at frequencies appropriate for early warning but an order of magnitude less than those used by modern ABM battle-management radars. As the CIA explained in 1985 testimony, the nine Pechora-type radars "are large, fixed installations, vulnerable to direct attack, and they are potentially susceptible to degradation from nuclear blackout effects." Thus, the construction of these permitted early-warning radars is hardly evidence of a Soviet effort to create the base for a nationwide defense.

These items simply do not add up to a "base" for a nationwide defense. The length of time it has taken the Soviet Union to modernize its single 100-interceptor system around Moscow—after nearly seven years it is still not complete—suggests how difficult a crash program to deploy thousands of ABMs would actually be.

These items simply do not add up to a "base" for a nationwide defense. A genuine nationwide defense would take many years to build. A conventional-type defense modeled on the Moscow system and upgrading of the Soviet air-defense system would require many hundreds and possibly thousands of ABM radars, and many thousands of ABM interceptors. The length of time it has taken the Soviet Union to modernize its single 100-interceptor system around Moscow (after nearly seven years it is still not complete) suggests how difficult a crash program to deploy thousands of ABMs would actually be. Furthermore, the administration's detailed charges demonstrate that even the initial stages of a genuine effort to deploy a nationwide defense would be observed long before such a system became operational, giving the United States ample time to respond.

The Threshold Test Ban Treaty

In its latest report, the Reagan administration charges that a number of Soviet nuclear tests constitute "likely" violations of the 1974 Threshold Test Ban Treaty. At the same time, the report acknowledges that "work is continuing" on "reviewing U.S. Government methodologies for estimating Soviet nuclear test yields," and that the U.S. charge may need to be "updated" when current studies are completed.

In Article I of the 1974 Threshold Test Ban Treaty, the parties undertook "to prohibit, to prevent, and not to carry out any underground nuclear weapon test having a yield exceeding 150 kilotons." The treaty was signed by President Nixon in 1974, but it has never been ratified by the United States. Nevertheless, under international law, both parties are bound not to take actions that would defeat the "object and purpose" of the treaty. In practice, this means not testing above the 150-kiloton threshold.

The administration's TTBT charge is based on a conclusion that does not fully address two critical factors: "regional bias" and statistical uncertainty in seismic measurement.

The administration asserts that its estimates of the yields of Soviet nuclear tests, based on measuring the seismic magnitude of the events, indicate that it is "likely" that a number of Soviet tests (10-20) have exceeded the 150-kiloton threshold since the signing of the treaty. There is a substantial controversy, however, over the interpretation of the seismic data. A growing number of seismologists have concluded that the data simply do not support a conclusion that the Soviet Union has been testing above the 150-kiloton threshold.

The administration's charge is based on a conclusion that does not fully address two critical factors: "regional bias" and statistical uncertainty in seismic measurement.

The location where the Soviet Union conducts its nuclear weapons tests (Semipalatinsk) differs geologically from the location where U.S. tests are carried out (the Nevada Test Site), so that a Soviet nuclear test sends larger seismic signals through the earth than a test of the same yield would at the U.S. test site. During the past year, the CIA has adjusted its estimate of this "regional bias" and has reduced its estimates of the yield of Soviet nuclear tests by some 20 percent. However, many seismologists, both in and out of government, believe the CIA may still be overestimating the yields of Soviet tests, because they believe the "regional bias" factor has still not been properly applied. (The administration's reference to "continuing" studies that may cause the conclusion on compliance to be "updated" implicitly acknowledges this ongoing debate.)

In addition to the "regional bias" problem, yield estimates based on the measurement of seismic waves inherently involve some statistical uncertainty. For each test, a "best estimate" or central value is made, along with a range of uncertainty, which the administration argues may be as large as a factor of two, though many seismologists believe that with improved techniques this uncertainty can be reduced. For example, if a test is judged to have a central value of 150 kilotons, it is recognized that the actual yield of the test could be as low as 75 kiltons or as high as 300 kilotons. If the Soviet Union were testing near the 150-kiloton threshold, half the tests would appear to be above the threshold and half below. Therefore, while the estimated yields of some Soviet tests since 1974 may have been over 150 kilotons, the actual yield of the tests could very well be at or below 150 kilotons.

Taking into account the "regional bias" problem and the inherent statistical uncertainty in seismic measurement, Dr. Roger Batzel, director of the Lawrence Livermore Laboratory, recently testified that "the Soviets appear to be observing some yield limit. Livermore's best estimate of this yield limit, based on a probabilistic assessment, is that it is consistent with TTBT compliance." Dr. Siegfried Hecker, director of the Los Alamos Laboratory, also testified that the seismic evidence was "consistent" with Soviet compliance, though because of the uncertainty, he testified that the data was also consistent with noncompliance. Milo D. Nordyke, leader of the treaty verification program at Lawrence Livermore, testified that "it was concluded that the Soviets appear to be observing a yield limit. The best estimate of this yield limit is that it is consistent with TTBT compliance."

Further undermining the administration's charge is the fact, which the administration's 1987 compliance report acknowledges for the first time, that when the TTBT was signed, both sides agreed that "one or two slight, unintended breaches per year would not be considered a violation."

Nevertheless, despite this agreement, despite a significant change in the U.S. government's "regional bias" factor, and despite the conclusions of the Los Alamos and Lawrence Livermore laboratories and the assessments of independent seismologists,the administration has refused to alter its conclusion that it is "likely" that the Soviet Union has violated the TTBT.

SALT II

The new report does not address SALT II issues in the context of Soviet compliance with existing agreements, since the United States has repudiated its political commitment to this agreement. Nevertheless, the report's introduction cites these issues as evidence of past Soviet violations and offers them as the principal rationale for the U.S. abandonment of SALT II. A close examination of the three principal U.S. charges of Soviet noncompliance with SALT II—as cited in the new report and discussed in detail in previous years—reveals that it is by no means clear that violations have actually occurred. Rather, the disputes hinge on differing interpretations of extremely complex and ambiguous treaty provisions, and on detailed technical information that neither side has made available to date.

The SS-25

The introduction to the 1987 report reaffirms the administration's charge that the SS-25 mobile ICBM is a prohibited second new type of ICBM, and therefore a violation of the Soviet Union's SALT II commitment.

SALT II permitted each side to flight test and deploy only one "new type" of light ICBM. A new type is defined as one that differs from an existing type by more than five percent in length, diameter, launch-weight, throw-weight, or differs in number of stages or propellant type. This provision was not intended to preclude either side from testing and deploying new ICBMs, but only to insure that they fit within the designated parameters. The parameters were specified primarily to control the throw-weight of missiles and not their qualitative performance. The United States wanted the right to develop, test and deploy new missiles that would have improved reliability and guidance, and it was not believed possible to verify these qualitative characteristics with high confidence. The Soviet Union has declared that the SS-X-24—a ten-warhead rail-mobile and silo-based ICBM—is to be their allowed one "new type." The United States has designated the MX as its one "new type" of ICBM.

In order to prevent the rapid conversion of single-warhead ICBMs to multiple-warhead ICBMs, SALT II also placed certain restrictions on the testing and deployment of existing types of single-warhead ICBMs. Neither side was permitted to test or deploy an existing type of single-warhead ICBM whose reentry vehicle constituted less than 50 percent of the missile's throw-weight.

The administration has charged that the SS-25 is a violation of the "new type" rule and of the 50 percent rule. The administration claims that the SS-25 is an illegal second "new type" of ICBM because its throw-weight is judged to be about 90 percent greater than that of the SS-13, which the Soviet Union has set as the standard of comparison for the SS-25. In addition, the administration claims that the SS-25 violates the 50 percent rule because its reentry vehicle constitutes only about 45 percent of the missile's throw-weight.

The Soviet Union rejects both of these allegations, claiming that the SS-25 is a permitted variation of the SS-13 and that the reentry-vehicle of the SS-25 constitutes more than 50 percent of the missile's throw-weight. On June 4, 1986, Marshall Sergei Akhromeyev, chief of staff of the Soviet military, asserted that the United States has overestimated the throw-weight of the SS-25 by including equipment (an instrumentation package) used during testing that would not be included in the actual deployment of the missile, and underestimated the throw-weight of the SS-13 by excluding from its calculations the SS-13's penetration aids and a guidance system carried on its third stage. If the throw-weight of the SS-13 were to include these additional devices and the throw-weight of the SS-25 were to exclude the testing package, he claimed the SS-25 would be within the permitted five percent variation. Moreover, the Soviet Union claims that if the SS-25's throw-weight were correctly calculated by excluding the testing package, the reentry vehicle of the SS-25 in its deployed condition would constitute more than 50 percent of the missile's throw-weight.

The SALT II disputes hinge on differing interpretations of extremely complex and ambiguous treaty provisions, and on detailed technical information that neither side has made available to date.

This compliance dispute essentially hinges on SALT II's definition of "throw-weight." The Article II (7) definition of throw-weight clearly states that penetration aids and guidance devices should be included. Moreover, former Secretary of State Cyrus Vance's formal analysis of the SALT II treaty for the Senate stated that as long as a targeting device "cannot provide additional velocity of more than 1,000 meters per second to a reentry vehicle, it is considered comparable to a post-boost vehicle and included in throw-weight." The treaty definition of throw-weight does not mention instrumentation packages used during testing, and a strong case can be made that it should not be included since presumably it would not be included in an operational missile.

Until the administration is prepared to explain on what basis it excludes these additional devices from its calculation of the SS-13's throw-weight, and on what basis the instrumentation package on the SS-25 should be included in the missile's throw-weight, its case will remain weak. Whether or not the SS-25 fits within the five percent limit on throw-weight using the Soviet reading of the treaty language depends upon the weights of the various elements of the throw-weight. This information, which the United States may not know in detail, has not been volunteered by the Soviet Union.

Secretary of State George Shultz acknowledged the weakness of the administration's case when he stated, "There are questions about whether in a purely technical sense it [the SS-25] fits within treaty language as might be interpreted by a lawyer." No suggestion has been made in the adminstration's latest report that new evidence exists to strengthen the administration's case. Indeed, Congressman Lee Hamilton (D-IN), chairman of the House Permanent Select Committee on Intelligence, argued as recently as last summer that the SS-25 "does not reasonably add up to an unequivocal violation."

Telemetry Encryption

The 1987 report also renews the charge that "extensive encryption of telemetry" on Soviet missile flights violates the SALT II prohibition on "impeding" verification through the deliberate denial of missile test information.

During flight-tests, the performance data of ballistic missiles is normally radioed to ground-based receiving stations. These radio signals, known as "telemetry," can be monitored by the other side and analyzed to retrieve technical data. The country testing a missile can also scramble or "encrypt" these radio signals so that it is impossible for the eavesdropping country to retrieve and analyze the technical information being communicated.

In Article XV (3) of the SALT II Treaty, each party was prohibited from using "deliberate concealment measures which impede verification." In a common understanding, both parties agreed that the encryption of telemetry would be permitted, except when the practice "impedes verification of compliance with the provisions of the treaty." In Secretary of State Vance's analysis of the SALT II Treaty for the Senate, he explains that Soviet negotiators agreed during the negotiations that there should be "no encryption of information involving parameters covered by the treaty . . . and that if any misunderstandings arose, they could be considered in the Standing Consultative Commission."

The administration argues that the Soviet Union has been heavily encrypting their missile telemetry (of such missiles as the SS-25, SS-24, and SS-18) over the last few years in a manner that impedes our ability to verify the performance characteristics governed by SALT II.

The Soviet Union has responded that its encryption practices do not impede verification of the relevant provisions of SALT II. In recent statements, Soviet spokesmen have stated that no encryption has occurred with regard to the relevant parameters: the launch weight, payload, dimensions, or number of warheads of its missiles. In addition, the Soviet Union has asked the United States to identify the specific telemetry information it needs for verification. U.S. spokesmen have refused to specify this information on the grounds that it would endanger sensitive intelligence sources and methods.

This compliance issue partially hinges on the interpretation of the word "impede." It is apparently not clear in the negotiating record whether "impede" means "to prevent" or whether it means "to make more difficult." Soviet encryption practices have undoubtedly made verification more difficult, but given the specificity of the administration's charge that the reentry vehicle of the SS-25 constitutes slightly less that 50 percent of the missile's throw-weight, encryption has obviously not prevented monitoring of very detailed qualitative provisions.

Soviet encryption practices have undoubtedly made verification more difficult, but given the specificity of the administration's charges on the SS-25, encryption has obviously not prevented monitoring of very detailed qualitative provisions.

The ambiguity inherent in the encryption issue was recently summed up by Representative Hamilton: "What we have is not an open and shut case of Soviet noncompliance. Instead, it is a case where treaty language is not as precise as it should be."

Finally, there are genuine questions as to what obligations the bilateral commitment "not to undercut" SALT II should entail in a situation where neither party has ratified the treaty and one party has taken a formal position that it never would ratify it. Under international law, the parties to an agreement are bound not to take actions that would defeat the "object and purpose" of the treaty pending ratification. In the case of SALT II, the United States stated in 1981 that it did not intend to ratify the treaty and on May 27, 1986, withdrew its political commitment to the treaty. The main purpose of the SALT II Treaty as stated in Article I was "to limit strategic offensive arms quantitatively and qualitatively." The "deliberate concealment" provision was not a central purpose of the agreement. It was intended to enhance each country's ability to verify compliance with the treaty's central provisions. Consequently, even though the Soviet Union has apparently not raised the point, some uncertainty exists as to the parties' obligation to comply with the secondary confidence-building provisions such as those limiting the encryption of telemetry.

Strategic Nuclear Delivery Vehicles

The introduction to the 1987 report also charges that the Soviet Union violated its SALT II commitment by "exceeding the permitted number of strategic nuclear delivery vehicles (SNDVs)."

If the SALT II Treaty had been ratified and gone into force, both parties would have been required to limit the number of SNDVs (ICBM launchers, SLBM launchers and heavy bombers) to 2,400, which would have been reduced to 2,250 by December 31, 1981. Since the treaty was never ratified, neither side has been required to limit their SNDVs to these aggregates. Instead, both sides have understood their political commitment "not to undercut" SALT II as including an obligation not to exceed the number of SNDVs each side had at the time SALT II was signed in 1979. In the Memorandum of Understanding accompanying SALT II, signed on June 18, 1979, the Soviet Union declared that it possessed 2,504 SNDVs, while the United States declared that it possessed 2,283 SNDVs. Thus the Soviet Union's SALT II commitment limits it to 2,504 SNDVs.

In the last few years, the Soviet Union has begun the deployment of three new types of SNDVs: MIRVed SLBMs on Delta and Typhoon-class submarines, mobile, single warhead SS-25s, and Bear-H heavy bombers with air-launched cruise missiles. At the same time, to make room for these new systems within the overall limit, the Soviet Union has dismantled launchers for SS-N-6 SLBMs and SS-11 ICBMs, and dismantled or converted Bison heavy bombers. The administration has claimed that from 1983 to 1986 the Soviet Union's total number of SNDVs has exceeded the 2,504 limit by as many as 30 delivery vehicles.

This compliance dispute is difficult to judge definitively without access to classified data. However, it is clear that over the past five years the Joint Chiefs of Staff, in their annual posture statements, have consistently estimated the total number of Soviet SNDVs to be below 2,504. For example, the FY 1987 JCS Order of Battle shows the Soviet Union to have 2,477 SNDVs.

Moreover, the Soviet Union has indisputably abided by all of the key numerical sublimits of SALT II. It has removed almost 200 ICBM launchers, SLBM launchers, and heavy bombers as it has deployed new systems in the past few years. For example, the Soviet Union has dismantled the silos for 72 SS-11 missiles as it has deployed the same number of mobile SS-25s. Reportedly, it has continued to dismantle SS-11 missiles even after the United States formally exceeded SALT II's numerical limits in November 1986. Given these facts, it is hard to believe that the Soviet Union has made a clear choice to violate SALT II's overall limit, while scrupulously abiding by SALT II sub-limits.

Instead, it appears that this compliance problem is based on a U.S.-Soviet dispute regarding the conversion and dismantlement of some 40 to 50 obsolete Bison bombers. Reportedly, the Soviet Union has told the United States in the SCC that, of the original 50 or so Bisons, most have been dismantled and the rest have either been or soon will be converted to aerial fuel tankers. Most of the dismantlements have been confirmed in JCS estimates of the Soviet forces, but recent official U.S. sources continue to include as SNDVs the remaining 15 Bisons that the Soviets claim have been or will be converted to fuel tankers.

The status of these nearly obsolete bombers is the heart of the issue. If these systems were excluded and categorized as aerial tankers, the total number of Soviet SNDVs would be at or below the 2,504 the Soviet Union had in 1979, and therefore the Soviet Union would be in full compliance with its commitment to SALT II. Specific provisions for bomber conversion have never been negotiated in the SCC, leaving the situation ambiguous, but the administration has refused to allow the U.S. representative at the SCC, General Richard Ellis, to negotiate the necessary procedures and clarify the issue. Rather than a clear case of a Soviet violation, the SNDV issue appears to be a problem that could readily be resolved in the SCC.

Indeed, in a recent letter to President Reagan, Senator Sam Nunn (D-GA), now chairman of the Senate Armed Services Committee, listed the SNDV issue as an area in which the Soviet Union was now in compliance with SALT II.

Rather than a clear case of a Soviet violation, the SNDV issue appears to be a problem that could readily be resolved in the SCC.

The Biological and Toxin Weapons Convention and the Geneva Protocol

The administration charges that "the Soviet Union has maintained an offensive biological warfare program and capability in violation of its legal obligation under the Biological and Toxin Weapons Convention of 1972 . . . [and] has been involved in the production, transfer, and use of trichothecene mycotoxins for hostile purposes in Laos, Kampuchea, and Afghanistan in violation of its legal obligation under international law as codified in the Geneva Protocol of 1925 and the Biological and Toxin Weapons Convention of 1972." (See special section in *ACT* September 1986 "Chemical and Biological Weapons: Slipping Out of Control?")

The 1925 Geneva Protocol bans the use in war of poisonous, asphyxiating, or other gases, as well as biological warfare.

The 1972 Biological and Toxin Weapons Convention bans both use and possession of biological and toxin weapons, except in small amounts used for defensive research. (Toxins are highly poisonous chemicals produced by living organisms. They are covered by the convention even if synthesized artificially.)

The administration charges that the Soviet Union has violated these agreements, resting its case primarily on: the alleged transfer of toxin weapons to the Vietnamese, for use in Southeast Asia; the alleged use of chemical or toxin weapons by Soviet troops in Afghanistan; and the outbreak of anthrax in the Soviet city of Sverdlovsk in 1979, allegedly due to an accident at a facility suspected of carrying out prohibited biological warfare activities. The Soviet Union has adamantly denied all of the charges.

"Yellow Rain" in Southeast Asia

For more than two decades, there have been occasional reports of chemical attacks in Southeast Asia. Most of the reports have come from Hmong tribesmen of Laos. In the late 1970s, the number of reports increased significantly and the U.S. government stepped up its investigations. In 1981, then-Secretary of State Alexander Haig formally charged that the Soviets had provided their Vietnamese allies with a toxin-laden substance known as "yellow rain," which had then been used in attacks in Laos and Kampuchea.

From the beginning, the administration focused its case on samples of the alleged "yellow rain," collected in Southeast Asia. The samples were said to contain poisonous tricothecene mycotoxins. These toxins are produced by fungi which grow on vegetation, and which have infested grain in many parts of the world, including the Soviet Union. The administration asserted that trichothecenes do not occur naturally in Southeast Asia. Richard Burt, then head of the State Department's Bureau of Political-Military Affairs, called the samples a "smoking gun."

Since then, however, these claims have been seriously questioned. Despite extensive testing, the initial indications that the samples contained trichothecene mycotoxins have not been confirmed by other laboratories. The U.S. Army chemical warfare laboratory has never found trichothecene mycotoxins in any of the environmental samples taken from Southeast Asia. Moreover, it has now been shown that trichothecenes occur naturally in the diet of Southeast Asians never exposed to alleged "yellow rain" attacks. Finally, Harvard Professor Matthew Meselson and his colleagues have demonstrated that the alleged samples of "yellow rain" were actually the feces of Southeast Asian honeybees.

Despite the telling criticisms of the sample evidence and the uncertainty surrounding the refugee reports, the administration continues to press its "yellow rain" charges with undiminished confidence.

The questions raised by the refugee reports, however, remain unanswered. These accounts, which are often contradictory, may reflect an exaggerated reaction to the use of herbicides or tear gas, possibly compounded by poor interrogation techniques on the part of investigators. The introduction to the 1987 report indicates that there have been no "confirmed" reports of new attacks for three years. Whatever the validity of the earlier refugee reports, the administration has never produced convincing evidence that the Soviet Union supplied whatever agents may have been used.

Despite the telling criticisms of the sample evidence and the uncertainty surrounding the refugee reports, the administration continues to press its charges with undiminished confidence.

Afghanistan

The administration's case that the Soviet Union has used chemical or toxin warfare in Afghanistan is even weaker than its case in Southeast Asia. There are fewer refugee reports, jnd the physical evidence reportedly consists of a single gas mask contaminated with toxins—which even the administration's Defense Science Board reportedly discounts, arguing that there is no evidence the Soviet Union has used toxins in Afghanistan.

Sverdlovsk

The administration has repeatedly charged the Soviet Union with maintaining an offensive biological warfare capability in violation of the Biological and Toxin Weapons Convention. This accusation rests on a variety of evidence. The 1987 report refers to "continued activity during 1986 at suspect biological and toxin weapons facilities in the Soviet Union, and reports that a Soviet BW program may now include investigation of new classes of BW agents." But "activity" and "investigation" do not necessarily constitute violations of the convention, which allows defensive research. The keystone of the administration's case, therefore, as described in the Defense Intelligence Agency's 1986 report on the "Soviet Biological Warfare Threat," is the very serious outbreak of anthrax that occurred in the Soviet city of Sverdlovsk in the spring of 1979.

In 1980, largely on the basis of an emigre report, the Carter administration expressed concern to the Soviet Union that the outbreak could have resulted from an accident at a suspected biological warfare facility in the vicinity. The area where the outbreak reportedly occurred and the reported nature of the cases suggested that the illnesses could have been caused by an airborne cloud of deadly anthrax spores released by such an accident.

The convention obligates members "never in any circumstances to develop, produce, stockpile or otherwise acquire or retain" biological agents or toxins in quantities that "have no justification for prophylactic, protective, or other peaceful purposes." The convention also obligated the parties "to consult one another and to cooperate" in resolving problems relating to the convention.

The Soviet Union, however, refused to discuss Sverdlovsk, either formally or informally, on the grounds that it was a natural event caused by contaminated meat and therefore not subject to the convention. This Soviet reticence raised further suspicions.

Over the last six months, Soviet officials have belatedly begun to provide more information on the outbreak. They now say the outbreak was caused by a batch of anthrax-contaminated livestock feed. According to the Soviet account, the meat from the infected livestock was subsequently sold privately, leading to the outbreak of anthrax.

None of the explanations of what happened in Sverdlovsk in 1979 can yet be considered proved. The new Soviet willingness to discuss the incident in detail may eventually provide sufficient evidence to establish their explanation.

The available details of the outbreak itself are contradictory. The initial report was that the anthrax was of the rare pulmonary form, which supported the thesis that the outbreak was caused by an accidental release of airborne spores. However, Soviet doctors who say they treated the anthrax patients in Sverdlovsk now report that the patients died of intestinal anthrax, as one would expect from contaminated meat, not pulmonary anthrax. The contaminated meat explanation would also be consistent with the fact that the outbreak is known to have lasted for several weeks, which would not be expected if it had been caused by a single cloud. Other circumstantial details are also inconclusive. While it is true that there is a complex in the area which had long been suspected of engaging in biological warfare research, it is also true that anthrax has been endemic in the Sverdlovsk area since Czarist times.

None of the explanations of what happened in Sverdlovsk in 1979 can yet be considered proved. The new Soviet willingness to discuss the incident in detail may eventually provide sufficient evidence to establish their explanation. Certainly the publicly available evidence does not support the administration's unequivocal assertion of Soviet violations of the convention.

This report was prepared by the staff of the Arms Control Association; principal analysts were James P. Rubin and Matthew Bunn. The Arms Control Association is a nonpartisan national membership organization dedicated to promoting public understanding of effective policies and programs in arms control and disarmament. For more information, contact ACA at 11 Dupont Circle, N.W., Suite 250, Washington, D.C. 20036, or (202) 797-6450.

Though Tough Issues Remain . . .

Gorbachev Opens Door to INF Agreement

Arms control negotiations between the United States and the Soviet Union received an unexpected boost when General Secretary Mikhail Gorbachev announced on February 28 that the Soviet Union would be willing to conclude a separate treaty on intermediate-range nuclear forces (INF). After having held out the possibility of a separate INF agreement for a year, the Soviet Union, at the Reykjavik summit in October, had linked progress on INF to a resolution of the dispute over the Strategic Defense Initiative (SDI) and the ABM Treaty.

The Reagan administration welcomed the Soviet decision to consider a separate INF agreement. In a March 3 statement, President Reagan said that Gorbachev's decision "removes a serious obstacle to progress toward INF reductions." Reagan also instructed the U.S. delegation in Geneva to present a draft INF treaty, which was tabled March 4.

The basic framework for an INF agreement was reached at the Reykjavik summit. The two sides tentatively agreed to eliminate all intermediate-range missiles from Europe. The Soviet Union would be allowed to retain 100 warheads in the Asian part of its territory, while the United States would be permitted to retain 100 warheads "in its national territory." Short-range INF would be frozen, although details were left to be worked out in Geneva. British and French intermediate-range nuclear forces would not be covered by the treaty.

Substantial differences between the sides' positions must still be resolved before a treaty can be concluded. According to administration sources, the Soviet Union has approximately 150 short-range INF missiles with ranges from 500 to 1,000 kilometers. The Soviet Union has proposed a freeze on missiles of this range and has pledged to withdraw some 70 SS-12/22 missiles, which had been forward-based in Czechoslovakia and the German Democratic Republic in response to the U.S. deployment of the Pershing II.

The United States has not deployed missiles of this range and wants to retain the right to build up to Soviet levels. As part of this proposal, the United States is protecting the right to convert Pershing II missiles to Pershing I missiles with a range of 740 kilometers. The U.S. position, strongly supported by the allies, is that missiles with ranges below 500 kilometers would be discussed at follow-on negotiations to take place after the signing of an INF accord.

The United States is also insisting on a rigorous verification regime. President Reagan stressed that "of the important issues that remain to be resolved, none is more important than verification." The State Department announced March 12 a six-point verification package that has been presented to the Soviet delegation.

The United States seeks, according to the State Department spokesman, first, a guarantee of non-interference with national technical means of verification, including a ban on the encryption of telemetric information during "missile flights;" second, a specification of areas and facilities where permitted missiles would be located and a prohibition against placing them elsewhere; third, the exchange of data concerning the missiles, their support facilities, and equipment; fourth, reciprocal updating of this data; fifth, procedures for the destruction, dismantlement, and conversion of long-range INF systems, including on-site inspection; and sixth, on-site inspection and monitoring both when the treaty goes into effect and during the life of the treaty.

The Soviet Union has reportedly indicated that it would be willing in principle to accept on-site inspection of the dismantlement and destruction of the missiles and their production facilities. All proposed U.S. verification provisions will also require Western European governments to accept Soviet inspections on their national territory.

Since the Gorbachev announcement, however, European leaders have publicly supported the elimination of INF missiles.

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Nunn, Senate Move On ABM Treaty Interpretation

During the month of March, members of the Senate took several steps to assert the Senate's role in the ABM Treaty reinterpretation debate. A series of important speeches by Senator Sam Nunn (D-GA), a joint hearing by the Senate's Judiciary and Foreign Relations Committees, and legislation introduced in both the House and Senate all gave support to the "traditional" treaty interpretation, which prohibits development and testing of mobile or space-based systems based on exotic technologies.

In Senate speeches March 11-13, Nunn, chairman of the Senate Armed Services Committee, delivered a powerful three-part blow to the administration's rationale for treaty interpretation. [See excerpts, p. 8.] Examining on consecutive days the original 1972 Senate ratification proceedings, subsequent state practice by the United States and the Soviet Union, and the previously unavailable treaty negotiating record, Nunn found virtually no evidence supporting the administration's reinterpretation.

Nunn concluded that the negotiating record "contains substantial and credible information which indicates that the Soviet Union did agree that the development and testing of mobile/space-based exotics was banned . . . and that the preponderance of evidence in the negotiating record supports the Senate's original understanding of the treaty—that is, the traditional interpretation."

Nunn also called on the State Department to declassify the negotiating record. He advised, however, that declassification should be done after informing and consulting the Soviet Union of U.S. intentions to do so, to avoid an adverse "diplomatic precedent."

On March 11, in a joint session of the

Senate's Judiciary and Foreign Relations Committees, Senator Joseph Biden (D-DE) introduced a resolution supporting the traditional view of the ABM Treaty. The resolution declares that "the development, testing, or deployment of any sea-based, air-based, space-based, or mobile land-based ABM systems or components . . . involving technologies not in existence when the treaty was ratified, would be inconsistent with the provisions of the treaty and would require an amendment to the treaty." The resolution states, "No amendment to the ABM Treaty may occur without the agreement of the parties and the advice and consent of the Senate."

The joint session heard testimony from former SALT I negotiators Raymond Garthoff and retired Lieutenant General Royal Allison, who participated in the original Senate hearings on the ABM Treaty. Both testified that the traditional interpretation was the one to which the U.S. and Soviet negotiators agreed. Allison said that "the treaty does not permit going beyond the research and research-testing phase—it clearly prohibits development, testing and deployment of all space-based and other mobile-based ABM systems and components." Garthoff stated, "It is clear that the [ratification] record reflects the judgment of the executive branch at the time that the 'restrictive' interpretation of the ABM Treaty was *the* interpretation, the only interpretation, of the treaty as it was presented to the Senate for its advice and consent to ratification."

Senator J.W. Fulbright, chairman of the Foreign Relations Committee during the ratification proceedings, testified, "Speaking for myself, I state categorically that, had I suspected that the ABM Treaty could validly be interpreted to allow 'Star Wars' or anything resembling it, I would either have opposed the treaty or proposed a clarifying reservation or interpretation. No one at that time . . . contemplated that systems based on technologies not then in existence would be exempt from the treaty's ban (under Article V) on development and testing as well as deployment of anti-missile systems."

"The administration has the right to propose amendments or to withdraw from the treaty," Fulbright concluded. "It does not have the right to perform radical surgery by tortured reinterpretation." Fulbright endorsed the Biden resolution and provided two letters from a total of 34 senators who voted on ratification in 1972, reaffirming that the traditional interpretation was the one they understood at the time.

Constitutional scholar Professor Laurence Tribe of Harvard University testified that "the treaty to which the Senate has given its consent then becomes supreme law, binding upon the President until duly terminated." Professor Louis Henkin of Columbia University, also a constitutional scholar, expressed a similar opinion: "The only treaty that is the supreme law of the land . . . is the treaty made by the President with the consent of the Senate, as understood by the Senate when it gave its consent."

In other legislative developments, Senator Carl Levin (D-MI) introduced binding legislation which would require U.S. compliance with the traditional interpretation. Levin's bill prohibits the secretary of defense from developing, testing, or deploying "an ABM system or component which is sea-based, air-based, space-based or mobile land-based unless the President certifies to Congress that the Soviet Union has done so." A similar bill has been introduced in the House by Representatives Les AuCoin (D-OR) and Norm Dicks (D-WA). The AuCoin-Dicks bill, however, would not prohibit "development."

Meanwhile, a number of senators, led by Senator Albert Gore (D-TN), have considered proposing a "compromise," which would delay a confrontation with the administration on the ABM Treaty reinterpretation issue. However, key Democratic senators were said to be strongly opposed to the proposal. According to the *New York Times*, it would include the following elements:

- The Senate would forgo legislation that endorses the traditional, restrictive interpretation of the ABM Treaty for the length of the compromise. Congress would be free to take any action on the treaty after the compromise expired.
- The Senate would support a "respectable" level of funding for SDI that has yet to be determined.
- The administration would not conduct SDI tests that would violate the traditional interpretation of the treaty while the compromise is in effect.
- The administration would authorize U.S. negotiators in Geneva to explore the question of what limits should be placed on testing and development of defensive systems.
- The administration would seek to resolve the dispute between the White House and Democratic Senate leaders over the ratification of the Threshold Test Ban and Peaceful Nuclear Explosions treaties. The administration would drop its insistence on "dual" ratification of the treaties—one now, and a second after a negotiated verification protocol.

—Jesse James

Six Former Defense Secretaries Support Traditional Interpretation of ABM Treaty

Six former U.S. secretaries of defense reaffirmed their support for the ABM Treaty March 9 and urged that the United States continue to adhere to the traditional interpretation of the treaty. Signers of the bipartisan statement, which was sent to the President, top administration officials and key members of Congress, included: Harold Brown (secretary from 1977-1981), Clark M. Clifford (1968-1969), Melvin R. Laird (1969-1973), Robert S. McNamara (1961-1968), Elliot L. Richardson (1973) and James R. Schlesinger (1973-1975). Laird was secretary of defense when the ABM Treaty was signed and presented to the Senate for approval.

The text of the statement follows:

"We reaffirm our view that the ABM Treaty makes an important contribution to American security and to reducing the risk of nuclear war. By prohibiting nationwide deployment of strategic defenses, the treaty plays an important role in guaranteeing the effectiveness of our strategic deterrent and makes possible the negotiation of substantial reductions in strategic offensive forces. The prospect of such reductions makes it more important than ever that the U.S. and Soviet governments both avoid actions that erode the ABM Treaty and bring to an end any prior departures from the terms of the treaty, such as the Krasnoyarsk radar. To this end, we believe that the United States and the Soviet Union should continue to adhere to the traditional interpretation of Article V of the treaty as it was presented to the Senate for advice and consent and as it has been observed by both sides since the treaty was signed in 1972."

Controversy Flares Over Pakistan Nuclear Program, U.S. Aid

On March 1, just as the Congress began considering a six-year $4.02 billion aid package to Pakistan, the director of Pakistan's nuclear development program was quoted in an Indian newspaper as saying that Pakistan had the capacity to produce a nuclear weapon. Although Dr. Abdul Qadeer Khan has denied making the statement, most experts now believe that Pakistan has the components to produce nuclear weapons. The President and the Congress must now each determine that Pakistan does not possess a nuclear weapon for it to receive the aid.

On November 4 it was reported that U.S. intelligence reports found that Pakistan had managed to enrich uranium to 93.5 percent at its nuclear facility at Kahuta. Intelligence reports also suggest that Pakistan conducted two non-nuclear tests during 1986 to develop the explosive mechanism that triggers a nuclear explosion.

In the interview with Indian journalist Kuldip Nayar, Khan is quoted as saying that critics "told us Pakistan could never produce the bomb, and they doubted my capabilities, but they know we have done it . . . What the CIA has been saying about our possessing the bomb is correct." Khan also reportedly admitted that Pakistan had enriched uranium to 90 percent U-235, which is weapons-grade. In a September 1984 letter to Pakistan's President Zia ul-Haq, President Reagan threatened implicitly to cut off U.S. aid to Pakistan if it produced uranium enriched above the five percent level.

The account of the Khan interview provided by the Indian journalist was confirmed by a Pakistani editor, Mushahid Hussein, who says he arranged the interview and accompanied Nayar to Khan's house. Hussein resigned on March 5 after writing an editorial in which he said the "government here has been denying what is obvious to most."

In 1981, largely in response to the invasion of Afghanistan by the Soviet Union, Congress approved a six-year $3.2 billion aid package for Pakistan. In doing so, Congress granted Pakistan a waiver from a provision known as the Symington Amendment, which prohibits U.S. aid from being delivered to any country that provides or receives nuclear enrichment materials or equipment that are not subject to International Atomic Energy Agency (IAEA) safeguards.

For the new aid package to be approved, the Congress must grant another waiver of the Symington Amendment. In addition, the Foreign Assistance Act, since 1985, has also required the President to certify each year that Pakistan does not "possess" a nuclear weapon. President Reagan certified that Pakistan did not have a nuclear device last October.

In his recently released third annual report on the spread of nuclear weapons, Leonard S. Spector, a proliferation expert at the Carnegie Endowment for International Peace, concluded that "a consensus appears to have emerged that Pakistan is at the nuclear-weapons threshold: it either possesses all of the components . . . or else remains just short of this goal." Spector added that if U.S. intelligence reports that Pakistan had enriched uranium to weapons grade level were correct, then "Pakistan has now effectively crossed the nuclear weapons threshold."

Since the amended Foreign Assistance Act requires that aid to Pakistan be terminated if Pakistan possesses a nuclear weapon, Pakistan may choose to remain, in Spector's words, "a screwdriver away" from acquiring the bomb in order to continue receiving U.S. aid. According to reports, Assistant Secretary of Defense Richard Perle told the Senate Governmental Affairs Committee that a nuclear weapons "capability" exists when a state possesses a "reliable" device of "significant yield" and has a "means of delivery."

The recent developments in Pakistan's nuclear program pose a difficult problem for the Congress and the President. Because of Pakistan's strategic importance and its role in U.S. aid efforts to the Afghan resistance, Congress and the President are reluctant to take any action that would jeopardize the $4 billion aid package.

Nevertheless, the administration has warned Pakistan not to cross the nuclear threshold. In a blunt speech in Islamabad February 16, Ambassador Deane Hinton stated that "there are developments in Pakistan's nuclear program which we see as inconsistent with a purely peaceful program." He cautioned that "it is open to question whether the President could [certify that Pakistan does not have a nuclear device] were he to conclude that Pakistan had in hand, but not assembled, all the needed components for a nuclear explosive device." He added that if Pakistan signed the Nonproliferation Treaty (NPT), "a positive outcome would be virtually assured."

Senator John Glenn (D-OH), chairman of the Governmental Affairs Committee, wrote President Reagan and called for a cut-off of aid to Pakistan until Pakistan demonstrates that it is not attempting to develop nuclear weapons. He wrote: "I believe we should continue to try to provide assistance to the Afghans. But if the price that must now be paid is acceptance of Pakistani nuclear weapons production, . . . then the price is too high." Glenn also urged that U.S. aid "not be restarted until you have received reliable assurances from the Pakistanis that they have ceased producing nuclear explosive materials."

However, when Deputy Assistant Secretary of State Robert Peck, in an appearance before the House Foreign Affairs Asia subcommittee, was asked by subcommittee chairman Representative Stephen Solarz (D-NY), whether the assurances outlined by Glenn could be obtained from Pakistan, he said, "I doubt the President could, certainly not under the present circumstances." He added, "I believe this would create serious problems in our relationship, undermine our relationship with Pakistan and put at risk a variety of larger interests in regard to Pakistan, including the influence which we have over Pakistan nuclear decision-making." Peck concluded that "we should avoid public confrontations and legislative ultimata of standards Pakistan must meet." Perle, in his testimony, argued that cutting off aid to Pakistan "may have the effect of driving the Pakistanis even faster in pursuit of nuclear weapons."

Administration Releases Report Detailing Soviet Noncompliance

On March 10, the Reagan administration, in its fourth report to Congress on Soviet noncompliance with arms control treaties, charged the Soviet Union with a "continuing pattern" of violations of seven arms control agreements and a "likely" violation of an eighth. The report also charges that the Soviet Union has made "no real progress" over the past year toward improving its compliance record. In its most significant charge, the administration report asserted that the Soviet Union may be planning to break out of the ABM Treaty and prepare a nation-wide defense of its territory.

The report repeats the charge that the Soviet large phased-array radar [LPAR] at Krasnoyarsk, because of its location and orientation, is a "clear violation" of the treaty. The report cites a number of other examples where evidence is either "insufficient" to assess Soviet compliance or where "potential" ABM Treaty violations may have occurred. These issues include the mobility of ABM components, the concurrent testing of ABM and air defense components, the ABM capability of SAM systems, and the rapid reload of ABM launchers.

As part of its claim that the Soviet Union may be preparing to deploy a national defense, the report cites three new LPARs under construction and the upgrade of the Moscow ABM system. However, the report concedes that these actions "appear to be consistent with the ABM Treaty."

The report concludes that the Krasnoyarsk radar, coupled with these "other Soviet ABM-related activities," raise "concerns that the Soviet Union may be preparing an ABM defense of its national territory."

The noncompliance report also accuses the Soviet Union of violations of the 1925 Geneva Protocol on Chemical Weapons and the 1972 Biological and Toxin Weapons Convention, the Limited Test Ban Treaty, the Helsinki Final Act, SALT II, and the SALT I Interim Agreement.

The report cited a "likely" violation of the Threshold Test Ban Treaty. However, the report said that the U.S. is presently reviewing its methods for estimating Soviet test yields and that the finding of a "likely" violation "will be updated when studies now under way are completed."

The administration report also asserts that "compliance with past arms control commitments is an essential prerequisite for future arms control agreements."

The Arms Control Association, in a press briefing on March 12, issued a highly critical analysis of the administration's report (see p. 15 of this issue). The ACA report charged that the administration "continues to distort the overall compliance picture, exaggerating problem areas of little military significance" while ignoring Soviet compliance with treaty provisions of "central importance."

—*Bruce B. Auster*

Soviet Union Delinks INF Issue from SDI

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West German Foreign Minister Hans-Dietrich Genscher said that Gorbachev "has removed the principal obstacle to an agreement" on INF forces. NATO Secretary General Lord Carrington called the move a "substantial step forward."

The Soviet initiative has raised a number of political and strategic questions in the West. After Reykjavik, for example, many Europeans decried the zero-zero agreement discussed at the summit. While now publicly supporting the proposed pact, some leaders reportedly express fears privately that the removal of U.S. nuclear weapons from Europe could put in doubt the U.S. nuclear commitment to the defense of the NATO alliance. The defense minister of France, for example, reportedly called the tentative INF deal a "nuclear Munich."

Other observers, like Henry Kissinger, noted that "the removal of American and Soviet medium-range missiles from Europe . . . magnifies European fears that America might not respond to a nuclear attack confined to Europe, much less to a conventional one." Les Aspin (D-WI), chairman of the House Armed Services Committee, in a report on the Reykjavik summit, concluded that "zero INF does not help [allied] cohesiveness" and recommended that the United States "not insist on zero INF." —*Bruce B. Auster*

Arms Control Today welcomes submission of unsolicited articles. Manuscripts should be typed double-spaced, and should be between 500 and 3,000 words in length.

Key Dates

March 31–April 15	• Biological Weapons Convention meeting of experts in Geneva.
April	• Department of Defense report due in Congress on the effect of the less restrictive interpretation of the ABM Treaty on the Strategic Defense Initiative.
April	• Annual Strategic Defense Initiative Organization report to Congress due.
April 13–16	• Secretary of State George Shultz to meet with Soviet Foreign Minister Eduard Shevardnadze in Moscow.
April 23	• 8th Round of Nuclear and Space Talks in Geneva begin.
April 30	• State Department required to complete its legal analysis of the ABM Treaty.
April 30	• Department of Defense required by the President to submit a list of SDI tests that would be permissible under the broad interpretation of the ABM treaty but which are currently prohibited by the traditional interpretation.
June	• A Poseidon submarine, the *USS Woodrow Wilson*, scheduled for overhaul.
June 30	• Deadline for Congress to act on appropriation bills.
Autumn	• ABM Treaty review conference.

"You Can Quote Me on That . . "

"I really don't think they have any qualifications for telling us what is the right interpretation of the ABM Treaty . . . It's nice to have the views of the allies and everything, but it's nicer to have the views of the allies on issues they know more about."

—ACDA Director Kenneth Adelman, February 10—

"To do an adequate research job leading to deployment, we have to use what we call a legally correct interpretation of the ABM Treaty. Narrow and broad, I don't think are properly descriptive terms. Wrong and right are the ones I prefer."

—Secretary of Defense Caspar Weinberger, testimony before the House Defense Appropriations Subcommittee, February 4, 1987—

"Like it or not, we see a political reality staring us in the face. If we don't come up with something specific, people are not going to let us play in the sandbox for 10 years."

—SDIO's acting chief scientist, Allan Mense—

"To assert the technical feasibility of strategic defense . . ., I believe would be intellectually dishonest. Whether or not strategic defense will be technically feasible a half-dozen years hence will become generally known only a half-dozen years hence. And anyone who presumes to tell you now what will be true that far away in this complicated area is frankly a confidence man. If he isn't reaching for your wallet he probably wants your vote or your political contribution, which is a more popular form of theft against which the law provides no protection."

—Lowell Wood, head of Lawrence Livermore National Laboratory's SDI O Group, at a public debate at the University of California, Berkeley, October 9, 1986—

The Peace Politics of Mark Hatfield

Senator Mark O. Hatfield, Republican of Oregon, is a maverick who often stands alone or first in his positions on arms control and foreign policy issues. Senator Hatfield is now the ranking minority member of the Senate Appropriations Committee and the Energy and Water Resources Subcommittee. He was chairman of the Appropriations Committee from 1981-1986. In 1981 when the Senate approved President Reagan's first defense budget by 96-1, Hatfield provided the only dissenting vote. While most Republicans were supporting the Reagan military buildup, Hatfield was the first to introduce an amendment to ban funding for the production of the MX missile and stood at the forefront of an effort to prevent nerve gas production.

Hatfield's role as dissenter can be traced to his involvement in Oregon politics. In 1964, as governor of Oregon, Hatfield was the only governor to vote against the Gulf of Tonkin Resolution at the National Governors' Meeting. He was the only senator to vote against reaffirmation of the Gulf of Tonkin Resolution during his first year in the Senate in 1966. He was the first to introduce legislation to end the Vietnam War through the McGovern-Hatfield amendment. The Carter administration was unable to complete assembly of the neutron bomb in 1977 principally because Hatfield had garnered enough votes to thwart that effort.

During the SALT II debate, Hatfield billed SALT II the "illusion of arms control," not because it did not constrain the Soviets, as most Republicans argued, but because it did not contain the development of counterforce weaponry. Thus, in 1979, he was the only U.S. Senator to introduce a nuclear freeze amendment. Later in 1982 he cosponsored a nuclear freeze resolution with Senator Edward M. Kennedy (D-MA). Also with Kennedy he coauthored *Freeze! How You Can Prevent Nuclear War.*

Hatfield commanded landing craft in the Pacific through some of the bloodiest battles of World War II at Iwo Jima and Okinawa. He was among the first American military personnel to witness the devastation at Hiroshima after the atomic bomb was dropped. That experience of war, coupled with his religious commitment and educational background, was instrumental in developing the perspective which he holds today.

Hatfield earned his B.A. from Willamette University in 1943 and an M.A. from Stanford University in 1948. Prior to becoming governor of Oregon he was associate professor of political science at Willamette University from 1949-1957. Hatfield is author of *Conflict and Conscience* (1971), *The Causes of World Hunger* (1982), and *What About the Russians?* (1982). This interview was conducted on February 25, 1987 by Robert Guldin and Alex Mikulich.

Arms Control Today: *You were one of the first Americans to witness the devastation at Hiroshima in 1945. What impact did that experience have in developing your perspective on nuclear arms issues?*

Hatfield: Let me give you an idea of the situation leading up to that day. We had been in Battangas, Philippines staging for the invasion of Honshu Island, the invasion of Japan. I was in amphibious landing craft warfare. On September 2, 1945, I was in the first squadron of ships to bring the Occupation Forces into Tokyo. We literally sailed past the bow of the Missouri while General MacArthur was signing the armistice. When we were moving into Tokyo through those channels that had just been cleared by the minesweepers, we could see on all sides of us the horrendous obvious crossfire that people would have suffered in the invasion strategy. And we all said, thank God they ended this, because it would probably have ended us invading Japan.

We didn't understand the scope of the bomb. Even the announcement that we had dropped these two bombs was not understood. But we knew that action had triggered some cessation of the fighting. And by doing that, our lives had been saved. So we had the upbeat idea that what ended the war was good.

Then a week or so later, around September 10, we went into Hiroshima. We saw the defeat, the indiscriminate devastation in every direction. And you try to comprehend that one bomb had done that. The devastation was beyond comprehension. We had bombed the island of Iwo Jima prior to the invasion for 78 straight days. And we could see the quantitative factor there, of bombing day after day. We could see that where hundreds, and perhaps thousands, of bombs had been dropped on a very limited part of real estate in the Pacific, it had not really mattered in a relationship to casualties we suffered. The bloodiest square

footage that we ever took was in Iwo Jima. Then to try to translate that thinking about conventional warfare into a bomb, one bomb, that had done all of this, made it more dramatic in trying to get a handle all on that. We couldn't.

I was a political science major, I don't understand the basic principle of the telephone, let alone some high technical piece of equipment. I had no scientific analysis of this new weapon, but I had a gut reaction of high ambivalence. Even on that day in Hiroshima, it kept coming to me that this is a whole new generation of weapons. Questions came into my mind. What happens to the world? Where do we go from here? I had been interested in world politics. I had grown up under the writings of those who were talking about how the munition makers had created wars in Europe for generations. I'd grown up being wary about munitions makers. Here was a munition that was going to change the whole world. I had real feelings of ambivalence.

In front of me in Hiroshima that day was the raw sight of war. Remember it was something more than visual, it was smell too, because the bodies had not all been recovered. You saw the real evil side of war, what it does to strip people of their sophistication, of facades of education, and culture, because here were American service personnel looking for gold teeth out of bodies to make a little earring. The bomb itself didn't create that. It was a manifestation of what war in general does to reduce the culture of human life to animalistic tendencies.

ACT: *In recent years the moral issues of nuclear deterrence have been addressed from more perspectives than ever before. How has that affected your thinking?*

Hatfield: I come from another generation. The philosophy even when we fought in World War I and World War II was that we primarily engaged military targets. Certainly civilians suffered, but our goal was to avoid victimizing the civilian populations. Americans were assured that our bombs were bombing military targets, production targets. We didn't always do it, but that was the philosophy.

The bomb changed all that. We had tried to maintain a degree of morality even in warfare. The bomb obliterated that fine but sometimes fuzzy line. The major sufferers were civilians. We eliminated any division between just and unjust wars. Here the moral question really comes into focus for me. From Augustine onward, we could always somehow apply a moral dimension, even when we were killing. But no longer can we do that. Potential warfare now is all immoral if you are going to adopt any ethical perspective. Why? Because it's totally indiscriminate. And it cannot be selective. It cannot be targeted.

It even goes beyond that: if the two superpowers were to engage in a major exchange, it would affect all the rest of the world. And it would ultimately be self-destructive because the launcher of that attack, even if there were not a response, would ultimately be infected and impacted through the ecosystem. Everyone. We would destroy all human creation, the entire ecosystem, either directly or indirectly. Now, then you come down to a basic question, which can be phrased in any known institutional religious context. Is this not the ultimate obscenity, and the ultimate arrogation of power when the creation can say to the creator, "I have a right to divest you of the creation." We didn't create ourselves, and however you believe we came into existence, we now hold in our hands the ultimate power. To me that's the ultimate obscenity. The superpowers have now reached that capacity, to destroy not just targets, or not just all of the enemy, but destroy the whole global life. And how can anybody avoid the moral dimension of that?

ACT: *Do you think the goal of arms control should be to displace deterrence or at least move it away from the center of the U.S.-Soviet relationship?*

Hatfield: Because we are living on the edge of the abyss, it seems to me that we can and should have only one goal: ridding ourselves of this curse, of this power to destroy ourselves and all creation. And I don't think that goal ought to be restricted to the superpowers. I think every person on this planet now has an interest in this that somehow has to be mobilized into a strategy. Our commonality is the human race, not whether we are communists or capitalists or neutralists. As members of the human race, we have to look at the bottom line objective of protecting the future of this planet. In that context, you can't say that it's all right to have any level of nuclear weapons.

"Because we are living on the edge of the abyss, it seems to me that we can and should have only one goal: ridding ourselves of this curse, of this power to destroy ourselves and all creation."

The Hiroshima bomb and the Nagasaki bomb were almost slingshots in comparison to the power of bombs today. I think we have reached a point where, not by strategy, but by possible error, we could launch a nuclear exchange or initial attack. Arthur Macy Cox writes this very clearly in his book *Russian Roulette*, detailing the number of misrepresentations of early warnings of Soviet attacks.

Remember this: you can get into the numbers games, but that's not the key. The key is technology. And of all the initiatives we talk about these days, virtually none are designed to limit technology. We argue between research and development, and development and deployment. There is no idea that I have seen except the underground nuclear testing ban, which really addresses the key factor of retarding, and ultimately, obliterating all of these weapons.

A great example of our inability to deal with the technology behind the arms race is the SALT II Treaty. SALT II attempted to limit the weapons of the time but it had nothing to do with the accelerator, the trigger, the ignition, the fuel: technology.

I argued against SALT II, initially, because it incorporated everything almost except the kitchen sink. Carter was giving away everything to the hardliners up here, the Scoop Jacksons, and all the other Democrats and Republicans leading the charge. Well, now we look back, even though we didn't ratify it, we have deployed about every one of those weapons that I was arguing about back in SALT II days—the MX, the D-5. The administration was happy to abide by the limits of the SALT II Treaty because it didn't limit new technology. But we have now reached the point where even those superficial limits might get in the way, and so the administration scrapped that too.

The administration knows that the whole concept of SDI still has to be implemented through technology, and they want to move it from research to deployment. There are those who

try to play the game by arguing let's research it, and let's develop it, but let's not deploy it. That's a political game, where I think people are trying to deal with a limited quantity of pregnancy, short of abortion, and you can't deal with it on that basis.

ACT: *Now that there has been a turnover in the Senate with the Democrats back in control, do you feel that that's going to make a significant difference for prospects in arms control? It seems that you, as a Republican, have been a more staunch supporter of many arms control measures than many of the Democrats in the Congress right now.*

Hatfield: I don't think it makes that much difference. The philosophy of some political people is that until we know that we can win a point, we don't create a confrontation on the issue. We had to count heads. Others will say, and I happen to belong to this other school of thought, that you raise your head up from the herd, even though you know you are going to get shot at. Because at some point if you are going to change the direction of that herd, there's got to be a head up. And then pretty soon, there will be a second, and a third, a fourth, and pretty soon you can shift that direction of the herd. But that's a philosophical point. It's a style of political action.

When George McGovern and I first introduced the amendment to cut off funds for the war in Vietnam, I think we had seven co-sponsors. A lot of people who were supportive of that said, hey, this is too early, we can't win. They said it will reinforce the White House belief that there was strong reinforcement behind its position in Congress. In a vote, they would win and we would lose. I don't think the Democrats, as a group, can get away from that legacy and it haunts them on arms control. A fourth don't want a vote on anything which could lose, another fourth do not want arms control at all, another fourth are committed but isolated, and the last fourth have no idea what they think or want. The result is paralysis.

There is a second point, and that is the Democrats have been hurt politically so frequently by the Republican anti-communist charge that they have a real political sensitivity to how far they can go in meaningful arms control. That's inherent in some of their reticence to make a confrontation.

ACT: *Are you talking about the recent Senate vote in favor of the Reagan arms control agenda?*

Hatfield: Yes, now that the Democrats control the Senate, they had to show that they stand for arms control. What we had there were political responses and political maneuvers.

I don't think the Democrats are that different than Republicans in style or in philosophy. There are those who are worthy to stand up, be counted, and take our lumps, and be the minority, be the one-vote, the two-vote, the three-vote person in a 90 to 3 vote. There are those who say later on, I'll take that position when it can be 51 to 49. I think the administration has outmanuevered the Congress and taken advantage of its weaknesses—Republicans and Democrats.

ACT: *What do you think is going to happen on the reinterpretation of the ABM Treaty and Secretary Weinberger's effort to get early deployment of the SDI (Strategic Defense Initiative)?*

Hatfield: That will play out on the appropriation level. There is a division in the administration between Weinberger and Abrahamson on one side and Secretary Shultz and Admiral Crowe on the other side. The targeted date that Weinberger talks about, 1994, I think is keyed into these rather significant increases in certain technologies requested in the $6 billion '88 budget. The emphasis is on those technical systems that have to be in place to deploy by that target date. Will we provide the funding necessary to develop those technologies inextricably linked to early deployment? That's where the decision is going to be made.

You are going to have people who say, let's look at total levels, and say we reduce SDI by $200 million over request, and then we'll be able to tell the public, well, we've cut the administration back. But then you are not addressing the key points of where these monies are allocated within the SDI program. Then that gets to the question of whether you are going to have early deployment or not.

ACT: *Do you have a sense of whether the administration will get an increase in funding for SDI in the coming year's appropriations?*

Hatfield: That plays out in a bigger context. The administration has asked for a $22 billion total increase in military spending, up to $312 billion for FY88. But to meet a lot of needs, whether it's for the increase in research for AIDS, or whether it's restoring the Pell grant reductions, the administration's proposal to cut education by 26 percent over current level of funding, you've got some very important political forces that have to be balanced out. Obviously, the target will be "military spending." It's very simple to say we have cut the administration's request for military spending in the last six or seven years by some $50-$60 billion dollars over request level. But they have still advanced every weapon system they wanted within that so-called reduced total level. So I think we have to be far more specific to address the runaway arms buildup.

ACT: *The total level of defense budget authority from FY80 to FY87 increased 69 percent in real terms. Was that development necessary? And if so, what did it accomplish for the country to have this buildup?*

Hatfield: I don't think it was necessary. In spite of the fact we have reduced President Reagan's request level year after year on military spending, we moved from $116 billion up to $282 billion in that span of years, a 69 percent increase in real terms. That is mind boggling.

The fundamental question to me is what *is* national defense? As long as we look at national defense in a narrow perspective of military weaponry, then we are never going to have enough money in the military budget. Until you look at national defense in the broader context of the infrastructure, a productive economy, a good education system, a healthy well-nourished people, a well-housed people, careful monitoring and stewardship of natural resources—these are all part of our national defense.

The only President in my lifetime who understood that was Dwight Eisenhower. People forget that when he went out to Topeka, Kansas to announce the interstate highway system, he announced it as a national defense program. For he said, to tie this country together in an intricate transportation system is fundamental to our national defense. He made the same application in some of his educational initiatives, because he spoke many times about national defense as more than the arsenal. In fact, he made a very good, what would in today's context of White House leadership would be a bizarre statement: "Every gun that is fired, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. The world

in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children." The question of what constitutes national security should be the great debate. But it isn't. We're narrowed down to a weapon-by-weapon program. And that's because those of us in the arms control community have not really sat down to develop a strategy. To the average American, this is still an esoteric discussion. It is so technical, it is beyond the ability to grasp. Until we can tie the political policy of this arms race to the local job opportunities, the local educational quality, to the health, to the housing, to the resource problems, until we broaden that to show the implication and interrelatedness, we are never going to win this battle, I think, with the limited base of this community of people concerned about arms races.

ACT: *One of the questions the Senate is facing right now is the Threshold Test Ban Treaty and the Peaceful Nuclear Explosions Treaty. Do you think they should be ratified with reservations calling for more verification, or can they be ratified just as they were originally proposed in the 1970s?*

"Until we can tie the political policy of this arms race to the local job opportunities, the local educational quality, to the health, to the housing, to the resource problems, until we broaden that to show the implication and interrelatedness, we are never going to win this battle, I think, with the limited base of this community of people concerned about arms races."

Hatfield: The entire question must be viewed in the context of the political game plan of the administration. The administration is very good at diverting our attention, and the Democrats are too disorganised or too timid to force the issues. Let me give you an example. When the twelve-month testing moratorium was passed by the House last year and it looked like it might have some chance in the Senate, the administration agreed to send up the Peaceful Nuclear Explosions Treaty and the Threshold Test Ban Treaty for ratification. The administration was not about to be put on the defensive. So as it ended up, Congress was on the defensive and we had a comprehensive test ban resolution without any teeth and the promise of two treaties which have essentially been rendered obsolete. It was a brilliant distraction on the administration's part.

We have never shown restraint in taking risks that could lead to war. But to match that, we ought to be willing to take a risk on occasion—or at least a step that could be considered a risk—that could lead to peace. The fact that the Soviet Union took a unilateral action for all these months on underground testing, to me, was a tremendous opportunity to match that risk for peace. I think the most significant thing is the underground testing, because that's where Soviets have realistically demonstrated their willingness to engage in an agreement. We are always saying that we have to find some comprehensive agreement before we take any step. If the Soviet Union opens a window here, we ought to match it.

New interpretations on the ABM Treaty are significant. The SDI initiatives are very significant. But I think the most significant action we could take in the Congress would be to bring about this ban on underground testing.

ACT: *We understand that you will soon become chairman of the Congressional Arms Control and Foreign Policy Caucus.*

Hatfield: This is a group I've been associated with previously, as chairman, in fact. It's a very useful organization that represents about 130 members of Congress from both political parties.

When you match the congressional resources against the administration's resources, there is a fantastic discrepancy there. The arms control caucus can not only be effective in research, as it has over the years, to provide the congressional members with information; it can also be a way to raise, in a responsible legitimate way, a contrary political viewpoint that can be projected outside of the Congress, to encourage groups outside of the Congress. The simplistic approach that the world is evil and good, and black and white, and we and they, and East and West—the simplistic world viewed by the administration and some in the military—always is so much easier to communicate to people because you play to their fears. But as a bipartisan group we can offer encouragement to those people outside of government who refuse to see the world in such simple terms.

Finally, such an organization can be a source of encouragement to its members. We have taken a defeat time after time. We have had a few victories like slowing the production of nerve gas or SDI. We need to have mutual encouragement. The caucus can be that.

ACT: *Do you think that the Senate should play an active role on insisting that the original and accepted interpretation of the ABM Treaty should be complied with?*

Hatfield: The Congress should play a role in this scene. We can't avoid it. We're constitutionally required to play a role in it, vis-a-vis at least the appropriations. Sam Nunn and others have urged the administration to not take action on this until we've consulted with our allies. I'm not overly impressed that strategy is going to change the position the administration has taken. From our own experience with chemical weapons last year, I'm pretty jaded about the integrity of our "consultations" with the NATO alliance. Because chemical weapons require forward deployment, we tied some fencing language around production funds in 1985. We told the administration that it had to get NATO approval before it went ahead and began production of these ghastly weapons. But if you look at the way the administration secured NATO approval, you will understand my skepticism about these "consultations." I am worried that the same thing will happen with the ABM Treaty. We will shove it down the throats of their military leaders, and the political angle will shut down completely. And there is always the possibility of another toothless "consensus" which will allow us in the Senate to look like we support arms control and the narrow interpretation but will allow the administration to go full steam ahead.

Again, there is always the appropriations process. Even if you make a political decision, you need money to back it up. There is always the possibility of just denying funds for those initiatives which would be allowed only under that new interpretation. We may be forced to deal with it on that level. ACT

Abandoning the Altar of First Use

Morton H. Halperin

Robert S. McNamara. *Blundering into Disaster: Surviving the First Century of the Nuclear Age.* New York: Pantheon Books, 1986, 212 pp., $14.95

When Robert McNamara became secretary of defense in 1961 under President Kennedy, he assumed the command of a military establishment equipped and trained to fight only nuclear wars. A 1954 Eisenhower directive instructed the military to procure forces and plan on the assumption that nuclear weapons would be used in any sustained combat.

This directive was soon withdrawn but, effectively, nothing was put in its place. The U.S. military services were told that they could neither count on being given authority to use nuclear weapons nor that they should assume that such permission would be forthcoming. No President since has cleared up the ambiguity. Thus, the military and the nation live with an ambiguous and dangerous policy. Despite this uncertainty, military plans to fight both conventional and nuclear wars are based on an assumption, deemed "necessary," that U.S. forces will be given permission to use nuclear weapons to prevent defeat in a conventional conflict.

Now, in this important book, his first since ending his self-imposed public silence while presiding over the World Bank, Robert McNamara proposes that we finally fully abandon the Eisenhower policy and base our military plans, defense budgets, weapons developments and deployments, and arms control positions on the assumption that it would never be in our interest to initiate the use of nuclear weapons.

Anyone who has studied the nuclear policies of the Eisenhower administration, with its talk of nuclear weapons as "conventional" weapons, and its drive to disperse nuclear devices around the world, can appreciate the importance of the turnaround effected by McNamara and those who worked with him in the Pentagon, the State Department, and the White House. The risk of nuclear war was reduced, as was the U.S. ability to make the facile and dangerous assumption that we would use nuclear weapons in any conflict.

That the Kennedy and Johnson administrations did not go further toward eliminating reliance on nuclear weapons is a tribute to bureaucratic inertia. The increasing distraction of Vietnam also worked against change in strategic doctrine, as did the resistance of our NATO allies, educated by American leaders for eight years about the "realities of the nuclear age" and the perceived need to rely on the immediate first use of nuclear weapons.

As McNamara makes clear in this volume, continued reliance on the nuclear threat was not a tribute to common sense or sanity. The security of the United States and the Western allies has, he argues, rested for years on the mistaken belief that the threat of first use was necessary to deter Soviet attack and that it was possible to use nuclear weapons in ways that would be of benefit to the alliance. The author sums up his view of reality succinctly as follows:

- NATO's existing plans for initiating the use of nuclear weapons, if implemented, are far more likely to destroy Europe than defend it.
- Whatever deterrent value remains in NATO's nuclear strategy is eroding rapidly and is purchased at heavy cost.
- The strength, and hence the deterrent capability, of NATO's conventional forces can be increased substantially within realistic political and financial constraints. (p. 121)

If anything, I would argue that McNamara underestimates the dangers of the current strategy. At the same time, he is, I believe, overly optimistic in asserting that there is growing support for the alternative posture that he recommends. Since he joined with three others— McGeorge Bundy, George F. Kennan and Gerard C. Smith—five years ago in the famous "Gang of Four" article advocating no first use of nuclear weapons, McNamara has engaged in a tireless effort to educate the American public to the simple fact that nuclear devices are not usable weapons. He has written a number of articles, among them an *Atlantic Monthly* essay in which the gang of four were joined by six others, including the author of this review. He has also spoken throughout the country, and testified before congressional committees.

Yet, there exists remarkably little interest in efforts to move the United States away from its reliance on the false god of first use. Conservatives and the administration remain fixated on the short-run cost of moving away from the current NATO strategy of employing nuclear weapons when "necessary" to defend Europe. The peace movement has abandoned the freeze and now focuses on deep reductions, defeat of particular weapon systems, and the defense of existing agreements. As important as these objectives may be, they are not a substitute for a change in our fundamental strategy nor can they be accomplished without the redirection McNamara advocates.

As long as U.S. policy rests on the threat of the first use of both tactical and strategic weapons, we will not be able to accept proposals such as a complete test ban and the elimination of ballistic missiles. Moreover, we will not be able to make the necessary adjustments in our deployment of nuclear weapons or in the actions we take in a crisis. Until and unless our plans and policies proceed from acceptance of the simple fact that nuclear devices are not weapons and cannot be used to fight wars, our military posture will increase the probability of accidental war, and will hamper improvements in our conventional capability. A first-use strategy creates an ongoing risk that a serious crisis will either expose our threats as incredible or will destroy the world.

In the historical portion of this slim volume, the former secretary of defense reminds us that we can stumble into crises that do not necessarily end without war. His is a voice in the wilderness. Until this nation heeds his call and comes back from the brink, we will be in danger of stumbling into the nuclear holocaust that we all seek to avoid. ACT

Morton H. Halperin served in the McNamara Pentagon as a deputy assistant secretary of defense. He is author of a number of works on nuclear strategy including Nuclear Fallacy, *just published by Ballinger.*

Crossroads for the Alliance: Diplomacy or Confrontation?

Jane M.O. Sharp

Jonathan Dean. *Watershed in Europe*. Lexington, MA: Lexington Books, 1986, 286pp.

Geoffrey Lee Williams and Alan Lee Williams. *The European Defense Initiative*. New York: St. Martin's Press, 1986.

These two volumes both deal with the issue of European security under conditions of Soviet-American strategic parity, but do so from very different perspectives.

Jonathan Dean's *Watershed in Europe* reflects his belief that the peak of Soviet-American political conflict has now passed, leaving statesmen with the task of dismantling the military confrontation in ways that both promote East-West detente and maintain stability and security in Central Europe.

The Williams brothers on the other hand still find the Soviet threat menacing. They worry that, in an age of superpower nuclear parity, an American threat to initiate the use of nuclear weapons—and hence NATO's doctrine of Flexible Response— no longer provides either a credible deterrent to Soviet mischief or credible protection for the NATO allies. They see three choices for West European governments under these circumstances: to bolster the credibility of Flexible Response, to engage in unilateral disarmament and adopt a neutral position between the United States and the Soviet Union, or to Europeanize NATO by establishing a viable West European defense entity. They reject the first option as infeasible and the second as undesirable. As the title of their volume indicates, they endorse the third option of a strong West European defense entity that takes responsibility for all aspects of its own defense, both nuclear and conventional, and for its own arms control negotiations with the Eastern bloc.

The Williams book thus endorses strategies like the Airland Battle and FOFA (Follow-On-Forces-Attack), and other suggestions to beef up NATO's offensive posture, even to the point of giving nuclear weapons to West Germany. Ambassador Dean by contrast, recommends that NATO governments not adopt any new military reforms until they have thought through more carefully their new political tasks—namely, how to reconcile the demands of their publics for enhanced East-West detente and reduced military spending, with the need to dismantle the military confrontation at a pace that will not destabilize central Europe. Dean appears to eschew both the offensively oriented reforms, like Airland Battle and FOFA that prescribe interdiction deep into Eastern Europe, and the defensively oriented proposals, for manifestly non-provocative forces.

Dean's book is based on 40 years in the United States Foreign Service, with direct participation in the buildup of NATO forces in the 1950s, and in many East-West negotiating forums since then; most recently as ambassador in charge of the American delegation at the Mutual and Balanced Force Reduction Talks in Vienna from 1978-1981. As such, it is rich in authoritative and insightful material for scholars. The Williams brothers, on the other hand, rehash secondary sources and opinions that make for a relatively unrewarding and disjointed narrative.

Nevertheless, read together, these volumes provide interesting contrasts in perspective on a number of issues in the contemporary debate on European security. Dean differs substantially from the Williams brothers on the state of the East-West balance, on the wisdom of the double-track decision on intermediate nuclear forces, on the need for strategic defenses, and on the value of East-West detente.

After years of negotiating with the Russians, Ambassador Dean obviously views the Soviet Union as more of a status quo power than one bent on expansionism. He thus finds Soviet-American strategic parity a stabilizing factor in international relations, and is relatively sanguine about the conventional balance in Europe. In a useful passage on the perils of net assessment, Dean discusses Western biases in estimates of Soviet forces, and provides interesting detail about the political controversy surrounding the data dispute at the MBFR talks.

Given their perspective on the Soviet threat, the Williams brothers find strategic parity between the superpowers unsettling—the classic fear of abandonment experienced by dependent allies in need of protection—and suggest that only unambiguous American strategic superiority can contain Soviet expansionism and restore European confidence in the American security guarantee to Western Europe. Moreover, in their most alarmist vein, they claim that it will take a doubling of NATO strength to correct the "gross imbalance" in NATO-Warsaw Pact conventional forces.

In discussing the recent upgrading of intermediate-range nuclear forces, Dean finds unwise the NATO double-track decision to deploy new ground-launched cruise and Pershing II ballistic missiles in Western Europe. He claims the net result was that all Europeans faced a greater nuclear threat from new missiles on both sides, both superpowers saw relationships with their alliance partners deteriorate and, in the West at least, the alliance consensus on defense was lost. The only positive aspect, according to Dean, has been a healthy skepticism about the Soviet threat and a new willingness to consider less orthodox means of defending Western Europe. The Williams brothers, predictably, endorse the double-track INF decision. In their view, the only problem was that deployment of the new missiles was made hostage to arms control.

Both books acknowledge the crisis of extended deterrence reflected in the INF fiasco, but would deal with the problem in different ways. Ambassador Dean believes the "coupling sickness" of West Europeans should be treated by diplomatic means rather than by the deployment of new weaponry. He therefore urges American officials to have the courage to say no to unreasonable West European demands for military reassurance. Ironically, the Williams book is peppered with these fears of abandonment and pleas for reassurance that Ambassador Dean finds so irritating.

On the matter of strategic defenses, Ambassador Dean finds the Reagan administration's Strategic Defense Initiative destabilizing on many grounds: it undermines the NATO policy of Flexible Response that he at least still finds credible, it provokes the Russians and thereby

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Jane M.O. Sharp is a Senior Research Fellow at the Stockholm International Peace Research Institute (SIPRI).

Sharp *cont'd. from page 37*

undermines the prospects for arms control and for enhancing East-West detente, and it increases the frustrated, resentful dependence of the Europeans on the technologically more advanced superpowers.

The Williams brothers, on the other hand, find strategic defenses reassuring since—in theory at least, and if unilaterally deployed by the United States—they could enhance the credibility of an American first strike and thereby enhance the credibility of Western deterrence. The Williamses claim that "Star Wars" has already proved an effective bargaining chip in bringing the Russians back to the negotiating table and even suggest that strategic defenses can restore moral purpose to war in the nuclear age.

Both volumes speculate on the long-term future for Europe. Ambassador Dean puts his faith in old-fashioned diplomatic solutions for classic alliance security dilemmas. He cautions against expecting too much from arms control, however, and suggests that the main benefits from East-West negotiations are not force reductions but political confidence building. He is realistic about the slow pace of likely changes in the Warsaw Pact but believes that major forces are moving towards normalcy. The Williams brothers are much more pessimistic. The only basis on which they can envisage enhanced detente is on the basis of a substantial buildup of Western strength, i.e. at the expense of Soviet security interests.

The Dean volume is the more rewarding of these two works, but reading both will give Americans some feeling for the tensions in the current debate and insights into the crippling effects of dependency on some sectors of Western European opinion. The fears of abandonment that permeate the Williams book are precisely those sentiments that have been so successfully exploited by the hardline confrontational wing of the American defense establishment in arguing for a tougher NATO line towards the Soviet Union. American liberals who are puzzled when NATO governments act like the sand in the gears of arms control will understand why after reading *The European Defense Initiative*. ACT

Nunn *cont'd. from page 14*

I have drafted a detailed classified analysis which examines Sofaer's arguments about the negotiating record at great length . . . I will also work with the State Department to see how much of this analysis can be declassified and released for public review. I would, of course, like for all of it to be released.

I believe it is appropriate at this juncture to pause for a moment and reflect on how the Reagan administration could be in such serious error on its position on this crucial issue—wrong in its analysis of the Senate ratification debate; wrong in its analysis of the record of subsequent practice, at least insofar as we have been given information on that subject; and wrong in its analysis of the negotiating record itself.

I believe that we need to take a look at the procedure by which the administration arrived at its position. I think the procedure, as people find out more about it, will reveal itself as having been fundamentally flawed. At the time the decision was announced by the Reagan administration, the administration was divided as to the correct reading of the negotiating record, with lawyers at the Arms Control and Disarmament Agency, the Defense Department, and even within Judge Sofaer's own office holding conflicting views. By his own admission, Judge Sofaer had not conducted a rigorous study of the Senate ratification proceedings or the record of the U.S. and Soviet practice—even though these are critical—indeed crucial—elements of the overall process by which one interprets treaties. Judge Sofaer made no effort to interview any principal ABM negotiator except Ambassador Paul Nitze—even though most of these gentlemen were still active professionally and living in or near Washington, D.C. Finally, there was no discussion with the Senate, despite the Senate's constitutional responsibilities as a co-guarantor of treaties.

To say that this is a woefully inadequate foundation for a major policy and legal change is a vast understatement. I hope that we can now begin to address the real problems that confront our nation in the areas of arms control and the strategic balance.

There are a number of specific steps which I believe we should take to bring some final resolution to this unfortunate controversy:

First, I believe the State Department should declassify the ABM Treaty negotiating record, after consulting with and informing the Soviet Union of our intentions. The only downside I can see to declassification, since this record is at least 15 years old, is the diplomatic precedent, and that is to be considered. However, if the Soviet Union is informed and consulted in advance of declassification, it seems to me that there would be no adverse precedent.

Second, we must recognize that by upholding the traditional interpretation of the treaty, we certainly will not eliminate all the ambiguities with respect to the effect of the treaty. The United States and the Soviet Union have not reached a meeting of the minds on the precise meaning of such important words as "development," "component," "testing in an ABM mode," and "other physical principles." The appropriate forum for attempting to remove these ambiguities is the Standing Consultative Commission (SCC), as specified in the treaty. I strongly recommend that the SCC be tasked with the very important job of discussing these terms with the Soviet representatives and trying to come to mutual agreement.

Third, and most important, we should continue to negotiate towards agreement in Geneva on a new accord limiting offensive as well as defensive systems which would supersede the ABM Treaty as well as SALT II, and that would, of course, render moot this whole debate about the broad versus narrow interpretation. Nothing would be better than to render this argument moot by entering into a comprehensive agreement on offense and defense and to have the terms defined with precision, clear up these ambiguities, and move on into the new arms control era.

Finally, we must develop an objective analysis of what tests are necessary under the Strategic Defense Initiative which cannot be conducted under the traditional interpretation. We were told last year by General James Abrahamson, the head of this project, that there were no tests which would be adversely impacted by the traditional interpretation before the early 1990s. If that has changed, we need to know what changes have taken place and what has driven those changes . . .

I emphasize also that the determination should be based on sound technological assessment and not on an ideologically driven kind of judgment. It is important for us to know that we are getting an analysis by scientists and not ideologues who have an agenda that has nothing to do with the technology and the tests at hand. ACT

Mark R. DeBiasse

OF SPECIAL INTEREST

U.S. Congress. House. Committee on Foreign Affairs. Subcommittee on Arms Control and International Security and Science. *Fundamentals of Nuclear Arms Control.* Washington, DC: U.S. GPO, 1986, 424pp. (A compilation of previously released reports prepared by the Congressional Research Service.)

Office of the Press Secretary. The White House. *The President's Unclassified Report on Soviet Noncompliance with Arms Control Agreements,* Washington, DC: March 10, 1987, 13pp.

Arms Control Association. *Analysis of the President's Report on Soviet Noncompliance with Arms Control Agreements,* Washington, DC: The Arms Control Association, March 12, 1987, 20pp. (Prepared by the staff of the Arms Control Association. James P. Rubin and Matthew Bunn, principal analysts).

Sherr, Alan B. "Sound Legal Reasoning or Policy Expedient? The 'New Interpretation' of the ABM Treaty," *International Security,* Winter 1986-87, pp.71-93.

Blechman, Barry M. *U.S. Security in the Twenty-First Century.* Boulder, CO: Westview Press, 1987, 173pp.

Gorbachev, Mikhail. "A Statement by the General Secretary of the CPSU Central Committee," *News and Views from the USSR.* February 28, 1987, 3pp. (Speech that announced the decoupling of progress in negotiations on intermediate-range nuclear forces in Europe from a solution on the question of ballistic missile defenses).

I. ARMS CONTROL NEGOTIATIONS, PROPOSALS AND TREATIES

Adelman, Kenneth L. "The Fallacy of the Grand Compromise," U.S. Arms Control and Disarmament Agency: Official Text, February 2, 1987, 12pp. (An address before the Deutsche Gesellschaft, Bonn).

Albrecht, Ulrich. "Revive the Reykjavik Dynamism," *Bulletin of Atomic Scientists,* March 1987, pp.40-41.

Bellany, Ian. "MBFR: An End and a Beginning," *The Council for Arms Control Bulletin,* January 1987, pp.2-4.

Chayes, Abram and Antonia Chayes. "The Future of the ABM Treaty," *Arms Control Today,* January/February 1987, pp.2-4.

Darilek, Richard E. "The Future of Conventional Arms Control in Europe," *Survival,* January/February 1987, pp.5-20.

Falk, Richard. "An Opportunity to End the Arms Race," *Bulletin of Atomic Scientists,* March 1987, pp.28-32.

Freedman, Lawrence. "Return to the Bomber Age?," London: *The Council for Arms Control Bulletin,* January 1987, pp.1-2.

Gordon, Michael R. "Arms Debate Now Centers on ABM Pact," *The New York Times,* February 17, 1987, p.1.

Kissinger, Henry. "No More Talk of Never-Never Land," *The Washington Post,* March 8, 1987, p.B7.

Mandelbaum, Michael and Strobe Talbott. *Reagan and Gorbachev.* New York, NY: Vintage Books, 1987, 190pp.

Mawby, Michael. "Arms Control Prospects in the 100th Congress," *Arms Control Today,* January/February 1987, pp.5-7.

Nitze, Paul H. "The Nuclear and Space Negotiations: Translating Promise to Progress," Washington, DC: U.S. Department of State, Current Policy No.910, February 1987, 5pp.

Plous, S. "Ban Missile Flight Testing," *The Nation,* February 21, 1987, pp.219-220.

Schlesinger, James. "Reykjavik and Revelations: A Turn of the Tide?," *Foreign Affairs,* America and the World 1986, Vol. 65, No. 3, 1987, pp.426-446.

"The Unravelling of Nuclear Arms Treaties: Another Step Towards Nuclear War," *The Defense Monitor,* Vol. XVI, No.1, 1987, 8pp.

U.S. Congress. House. Committee on Armed Services. Report of the Defense Policy Panel. *Reykjavik and American Security.* Washington, DC: U.S. GPO, 1987, 31pp.

U.S. Congress. House. Committee on Armed Services. Report of the Defense Policy Panel. *The Reykjavik Process: Preparation for and Conduct of the Iceland Summit and its Implications for Arms Control Policy.* Washington, DC: U.S. GPO, 1987, 30pp.

Vayrynen, Raimo. "Minimum Deterrence, Mutual Security," *Bulletin of Atomic Scientists,* March 1987, pp.45-47.

Walker, John R. "Nuclear Disarmament: The Gorbachev Initiative," *Canadian Institute for International Peace and Security Background Paper,* January 1987, 7pp.

II. VERIFICATION AND COMPLIANCE

Gallagher, Matthew P. "Soviet Compliance with Arms Agreements: The Positive Record," *The Defense Monitor,* February 1987, 8pp.

Jasani, Bhupendra and Toshibomi. *Satellites for Arms Control and Crises Monitoring.* Oxford: Oxford University Press, 1987.

Lall, Betty G., Rosy Nimroody and Paul D. Brandes. *Security Without Star Wars: Verifying a Ban on Ballistic Missile Defense.* New York: The Council on Economic Priorities, 1987, 106pp.

United States Arms Control and Disarmament Agency. "Adherence to and Compliance with Agreements," Official Text, February 11, 1987, 13pp.

"Verification and Arms Control: An Interview with Manfred Eimer and Sidney Drell," *Science,* January 23, 1987, pp.406-414.

III. WEAPON SYSTEMS AND TECHNOLOGIES

STRATEGIC NUCLEAR

Gore, Albert A. Jr. and Robert R. Everett. "Forum Debate: The Midgetman," *Technology Review,* November/December 1986, pp.24-28.

Schemmer, Benjamin F. "Is the B-1B Bomber an 'Edsel'?," *Armed Forces Journal International,* February 1987, pp.60-64.

BALLISTIC MISSILE DEFENSE AND SPACE

Blechman, Barry M. and Victor A. Utgoff. "The Macroeconomics of Strategic Defenses," *International Security,* Winter 1986-87, pp.33-70.

Cimbala, Stephan J. *The Technology, Strategy, and Politics of SDI.* Boulder, CO: Westview Press, 1987, 256pp.

Fossedal, Gregory A. "NSC Minutes Show President Leaning to SDI Deployment." *The Washington Times,* February 6, 1987, pp.1A, 10A. Leaked minutes of a National Security Planning Group meeting concerning the possible early deployment of SDI).

Gray, Colin S. "Consider What SDI Might Accomplish," *Defense News,* February 2, 1987, pp.20.

Marsh, Gerald E. "Dangers of Limited SDI," *Bulletin of Atomic Scientists,* March 1987, pp.13-14.

Parrott, Bruce. *The Soviet Union and Ballistic Missile Defense.* Boulder, CO: Westview Press for The Johns Hopkins University, SAIS, 1987, 130pp.

Smith, R. Jeffrey. "Offensive Taken for Partial SDI Deployment," *The Washington Post,* January 18, 1987, pp.A1, A12-13.

The Aspen Strategy Group. *The Strategic Defense Initiative and American Security.* Lanham, MD: University Press of America for the Aspen Strategy Group, 1987, 82pp.

Tucker, Robert W., George Liska, Robert E. Osgood, and David P. Calleo. *SDI and U.S. Foreign Policy.* Boulder, CO: Westview Press for The Johns Hopkins University, SAIS, 1987, 130pp.

U.S. Congress. Senate. Committee on Armed Services. Subcommittee Report on Strategic and Theater Nuclear Forces. *Strategic Defense Initiative.* Washington, DC: U.S. GPO, 1986, 425pp.

York, Herbert. *Does Strategic Defense Breed Offense?* Lanham, MD: University Press of America and the Center for Science and International Affairs at Harvard University, 1987, 58pp.

CONVENTIONAL

Lombardy, Dana. "Defending NATO's Airfields," *NATO's Sixteen Nations.* December 1986, pp.89-94.

Record, Jeffrey. *Determining Future U.S. Tactical Airlift Requirements.* Washington, DC: Pergamon-Brassey's, 1987, 46pp.(A Special Report by the Institute for Foreign Policy Analysis, Inc.)

CHEMICAL AND BIOLOGICAL

Adelman, Kenneth L. *USA's Need for a Chemical Deterrent*, Washington, DC: U.S. Arms Control and Disarmament Agency, Occasional Papers No.2, February 11, 1987, 2pp.

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

Boutacoff, David A. and Bruce Gumble. "Strengthening C3 in Space," *Defense Electronics*, February 1987, pp.47-56.

IV. DEFENSE BUDGET AND PROCUREMENT

Aldridge, Edward C. *USAF FY88 Report to the 100th Congress of the United States of America.* Washington, DC: U.S. Department of the Air Force, 1987, 105pp.

Cain, Stephen Alexis and Gordon Adams. "Reagan's 1988 Military Budget," *Bulletin of Atomic Scientists*, March 1987, pp.50-52.

Kelley, General P.X. *Statement on Posture, Plans, and Programs for Fiscal Years 1988 Through 1992.* Washington, DC: U.S. Department of the Navy, 1987, 47pp.

Leibstone, Marvin. "Fiscal Year 1987 U.S. Defence Budget," *NATO's Sixteen Nations.* December 1986, pp.72-76.

The Joint Chiefs of Staff. *United States Military Posture FY1988.* Washington, DC: U.S. Joint Chiefs of Staff, 1987, 100pp.

Trost, Admiral C.A.H. *The Posture and Fiscal Year 1988-1989 Budget of the United States Navy.* Washington, DC: U.S. Department of the Navy, 1987, 97pp.

Wickham, John A. Jr. and John O. Marsh. *The United States Army Posture Statement FY88.* Washington, DC: U.S. Department of the Army, 1987, 67pp.

V. MILITARY STRATEGY AND THEORY

Betts, Richard K. "A Nuclear Golden Age? The Balance Before Parity," *International Security*, Winter 1986-87, pp.3-32.

Blight, James G. "The New Psychology of War and Peace," *International Security*, Winter 1986-87, pp.175-186. (A review of Jervis, Robert, Richard Ned Lebow and Janice Gross Stein. *Psychology and Deterrence.* Baltimore, MD: Johns Hopkins University Press, 1985.)

Crowe, Admiral William J. Jr. "U.S. Military Power and Global Security," *Journal of the Royal United Services Institute for Defence Studies*, December 1986, pp.9-12.

Epstein, Joshua M. *Strategy and Force Planning: The Case of the Persian Gulf.* Washington, DC: Brookings Institution, 1987, 169pp.

Gray, Colin S. *Maritime Strategy, Geopolitics, and the Defense of the West.* New York, NY: National Strategy Information Center, 1986, 85pp.

Lautenschlager, Karl. "The Submarine in Naval Warfare, 1901-2001," *International Security*, Winter 1986-87, pp.94-140.

Martin, Laurence. "Minimum Deterrence," *Council for Arms Control: Faraday Discussion Paper No.8*, January 1987, 15pp.

National Security Strategy of the United States. Washington, DC: Office of the President of the United States, January 1987, 41pp.

Rosenberg, David Alan. "U.S. Nuclear Strategy: Theory vs. Practice," *Bulletin of Atomic Scientists*, March 1987, pp.20-26.

Voight, Karsten. North Atlantic Assembly. Military Committee. *Interim Report of the Subcommittee on Conventional Defence: New Strategies and Operational Concepts.* November 1986, 33pp.

Zagare, Frank C. *The Dynamics of Deterrence.* Chicago, Ill: The University of Chicago Press, 1987, 194pp.

VI. NUCLEAR PROLIFERATION

Cohen, Avner and Benjamin Frankel. "Israel's Nuclear Ambiguity," *Bulletin of Atomic Scientists*, March 1987, pp.15-19.

VII. REGIONAL SECURITY ALLIANCES AND ISSUES

SOVIET UNION

Kissinger, Henry A. "Kissinger: How to Deal with Gorbachev," *Newsweek*, March 2, 1987, pp.39-47.

MccGwire, Michael. "Why the Soviets Want Arms Control," *Technology Review*, February/March 1987, pp.36-45. (Article based on the recently published, *Military Objectives in Soviet Foreign Policy*, by the same author.)

Simes, Dimitri. "Gorbachev: A New Foreign Policy?," *Foreign Affairs*, America and the World 1986, Vol. 65, No.3, 1987, pp.477-500.

Spiegel, Steven L. "America's Detente Dilemma," *Center for International and Strategic Affairs: Research Note No. 18*, September 1986, pp.16.

EUROPE

Bertram, Christoph. "Why Reykjavik Upset the European Allies," *Arms Control Today*, January/February 1987, pp.15-18. (An interview conducted for ACT by ACA staff members Robert Travis Scott and James P. Rubin).

Cartwright, John, David Clark, Bruce George, Lothar Ibrugger, Jules de Waart, and Ludolf-Georg von Wartenberg eds. *The State of the Alliance 1986-1987.* Boulder, CO: Westview Press, 1987, 350pp.

de Waart, Jules. North Atlantic Assembly. Military Committee. *General Report on Alliance Security.* November 1986, 52pp.

Nelson, Daniel J. *A History of U.S. Military Forces in Germany.* Boulder, CO: Westview Press, 1986, 250pp.

Petersen, Peter. North Atlantic Assembly. Military Committee. *Interim Report of the Subcommittee on Defence Cooperation.* November 1986, 28pp.

SDI and European Security: Enhancing Conventional Defense. A Transatlantic Conference Report Co-sponsored by The Institute for Foreign Policy Analysis and The Institute of Security Studies, 1987, 29pp.

Sharp, Jane M.O. "NATO's Security Dilemma," *Bulletin of Atomic Scientists*, March 1987, pp.42-44.

Younger, George. "Defence: A Sense of Balance," *Journal of the Royal United Services Institute for Defence Studies*, December 1986, pp.3-8.

OTHER REGIONS

Clements, Kevin P. "New Zealand's Antinuclear Stand," *Bulletin of Atomic Scientists*, March 1987, pp.32-34.

Cox, David. "Trends in Continental Defence: A Canadian Perspective," *Canadian Institute for International Peace and Security Occasional Papers*, December 1986, 50pp.

Beatty, Perrin. "A New Look at Canada's Defence Policy," *NATO's Sixteen Nations*, December 1986, pp.49-56. (An interview with Canada's Minister of National Defence conducted by John Halstead).

Power, Paul F. "The South Pacific Nuclear-Free-Zone," *Arms Control Today*, January/February 1987, pp.8-10.

Rowny, Edward L. *Arms Control: The East Asian and Pacific Focus.* Washington, DC: U.S. Department of State, Current Policy No. 904, January 1987, 3pp.

VIII. CONGRESSIONAL HEARINGS

U.S. Congress. Senate. Committee on Appropriations. *Department of Defense Appropriations for Fiscal Year 1987. Hearing. Part 2 of 4 Parts, Navy Aircraft Procurement and Related R&D, Strategic Defense Initiative, Strategic Programs.* Washington, DC: U.S. GPO, 1986, 325pp.

U.S. Congress. Senate. Committee on Appropriations. *Department of Defense Appropriations for Fiscal Year 1987. Hearing. Part 4 of 4 Parts, Nondepartmental Witnesses.* Washington, DC: U.S. GPO, 1986, 343pp.

U.S. Congress. Senate. Committee on Armed Services. *Department of Defense Authorization for Appropriations for Fiscal Year 1987. Hearing. Part 2 of 4 Parts, Unified Commands.* Washington, DC: U.S. GPO, 1987, 285pp.

U.S. Congress. Senate. Committee on Armed Services. *Department of Defense Authorization for Appropriations for Fiscal Year 1987. Hearing. Part 3 of 4 Parts, Army Programs, Navy-Marine Corps Programs, Air Force Programs.* Washington, DC: U.S. GPO, 1987, 530pp.

U.S. Congress. Senate. Committee on Armed Services. *Department of Defense Authorization for Appropriations for Fiscal Year 1987. Hearing. Part 4 of 4 Parts, Strategic and Theater Nuclear Forces, Preparedness.* Washington, DC: U.S. GPO, 1987, 525pp.

IX. OTHER TOPICS

Huntington, Samuel P. "Arms Races: Prerequisites and Results," *Journal of the Federation of American Scientists*, February 1987, 20pp.

Subrahmanyam, K. "Eradicate the Nuclear Cult," *Bulletin of Atomic Scientists*, March 1987, pp.36-39.

Turner, Alan Brooke. "Human Rights and Arms Control," *The Council for Arms Control Bulletin*, January 1987, pp.4-5.

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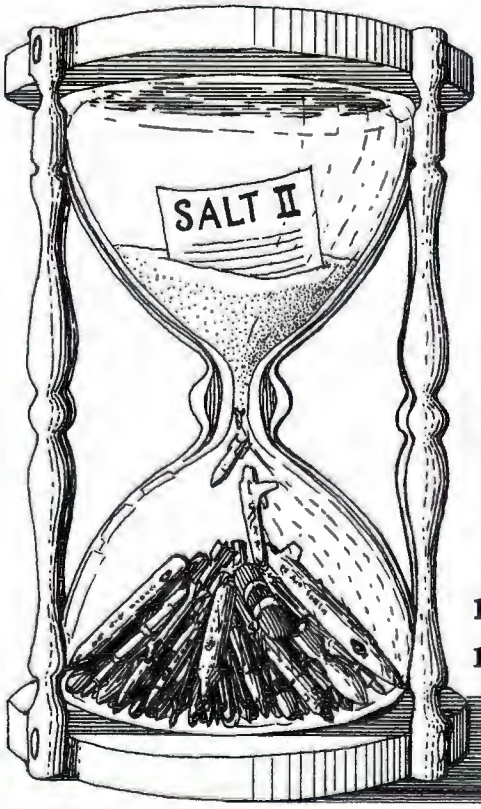

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SUPPLEMENTAL: MONDAY, 27 APRIL 1987
WASHINGTON POST 26 APRIL 1987 Pg.D7

Arms control

Richard M. Nixon and Henry A. Kissinger

An Arms Agreement—on Two Conditions

The former president and the former secretary of state offer their advice.

President Reagan has a historic opportunity to take a major step forward in American-Soviet relations. There is little doubt that a summit meeting will occur this year and that an arms control agreement will be signed. But whether this leads to a breakthrough toward peace depends on whether it is the right kind of a deal. That is still an open question.

How did we reach this point? There are two principal factors.

The first is Reagan's success in restoring American self-respect and military strength. He has made the United States worth negotiating with. No one can deny the decisive role of the Strategic Defense Initiative in bringing the Soviets to the negotiating table.

The second is that General Secretary Gorbachev needs a deal. He wants a relaxation of tensions with the West in order to pursue his desperately needed domestic reforms.

All attention is now focused on the possibility of an agreement on medium- and short-range missiles. With respect to medium-range missiles, Gorbachev offers to give up 922 warheads on SS-20 missiles if we give up 316 warheads on Pershing II and cruise missiles. He has also offered to destroy 142 short-range SS-12/22s and SS-23s. Each side would retain 100 warheads on medium-range missiles, with Moscow's based in Soviet Asia and ours in the United States. It seems almost too good to be true—an offer we apparently cannot refuse.

Why does a leader whose entire career was in the Communist Party with its emphasis on balance of power offer apparently unequal reductions? Gorbachev is by far the ablest of all Soviet leaders since the end of World War II. He has an acute intelligence, a forceful presence and a contagious charisma. He is making some bold domestic reforms. But this does not mean he is a philanthropist. He knows that the Soviet cuts do not reduce in any significant manner the Soviet capacity to attack Europe with nuclear weapons and that they increase the Soviet conventional threat to Europe. He seeks to advance the calculated purpose of weakening the ties between the United States and Western Europe and between Germany and the Atlantic Alliance.

If we strike the wrong kind of deal, we could create the most profound crisis of the NATO alliance in its 40-year history—an alliance sustained by seven administrations of both parties. Because we are deeply concerned about this danger, we who have attended several summits and engaged in many negotiations with Soviet leaders are speaking out jointly for the first time since both of us left office.

When NATO was created, faced with Moscow's massive conventional superiority, the allies chose to confront Soviet manpower by threatening to respond to a Soviet conventional attack with nuclear weapons. So long as the United States had superiority in strategic nuclear weapons, that strategy was credible. But since the late 1970s the Soviet strategic arsenal has grown to equal, and in land-based missiles to exceed, that of the United States. This meant that a nuclear war would involve scores of millions of American casualties in a matter of hours. We need not debate whether an American president would under these circumstances initiate strategic nuclear war in response to an attack on Europe. It is enough to recognize that if the Soviets believe he might not, deterrence could fail.

That is why NATO developed a doctrine—flexible response—which would permit a graduated application of its nuclear power. Medium- and short-range missiles placed on the continent of Europe restored the credibility of the threat of nuclear retaliation, if only because the Soviets had to calculate that the United States would not permit them to be overrun without using them. This was especially important for the Federal Republic of Germany, which, unlike France and Britain, has no nuclear weapons and, unlike Italy, has large Soviet armies on its borders. Three years ago, NATO governments overcame bitter Soviet-sponsored demonstrations to deploy these medium-range missiles.

It is regrettable that in the late 1970s the deployment of those weapons was justified solely on the ground that they were needed to balance the new Soviet SS-20 missiles and that Western statesmen said a withdrawal of the SS-20s would permit us to withdraw our missiles as well. In fact, these missiles were not needed to offset their equivalents. Their real function was to discourage Soviet nuclear blackmail of Europe by whatever weapon from whatever location and to raise the risk of nuclear retaliation by NATO to Soviet conventional attack. They closed a gap in deterrence caused by the apocalyptic nature of strategic nuclear war.

The Soviets' strategy since the end of World War II has been to exploit the West's fear of nuclear weapons by calling repeatedly for their eventual abolition. If we acquiesce in this strategy, we will create a far more dangerous world. Any Western leader who indulges in the Soviets' disingenuous fantasies of a nuclear-free world courts unimaginable perils.

If we eliminate American medium- and short-range forces in Europe without redressing the conventional imbalance, the Soviet nuclear threat to Europe will remain, and the gap in deterrence to conventional attack will be reopened. Even after the proposed reductions the entire Soviet nuclear arsenal of 19,000 warheads can, if the Soviet Union chooses, be aimed at Western Europe from the Soviet Union a few hundred miles away. But given the catastrophic consequences of general nuclear war, the credibility of the strategic U.S. threat is eroding, all the more so if it must be initiated on behalf of distant allies and after we have just withdrawn our strategic missiles across an ocean.

Deterrence cannot be based on either U.S. battlefield nuclear weapons, because their range is too short, or on tactical bombers, because of the formidable Soviet air defenses. Reliance on battlefield nuclear weapons has two other disadvantages. It stakes the nuclear threat on the nuclear weapons most difficult to control by civilian leaders. Above all it would confine the use of nuclear weapons in effect to German soil.

Faced with such prospects no German government will be able to resist for long the siren song of denuclearization, on the one hand, or the acquisition of nuclear weapons, on the other. And this in turn would leave American forces in Europe without adequate nuclear protection.

In retrospect, NATO should not have offered the zero option in the late 1970s. But we have crossed that bridge. The Soviets have accepted our offer. But it would be a profound mistake to conclude the agreement in its present form. We must insist on at least two conditions:

1. *No missiles in Asia.* We must demand that the zero option eliminate all intermediate-range missiles worldwide. From just beyond the Ural Mountains, Soviet SS-20 missiles could still reach Germany and, being mobile, could quickly be moved into positions that threaten all of Europe. Also, given the enormous Soviet nuclear arsenal, the sole Soviet purpose in retaining 100 warheads in Asia is to intimidate China, Japan and Korea with American acquiescence. Finally, by permitting 100 warheads in Asia, the verification problem becomes enormous because that

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SUPPLEMENTAL: MONDAY, 27 APRIL 1987

ATLANTA CONSTITUTION 24 APRIL 1987

Iran case symptomatic of export ailment

The way Ronald Reagan was blind-sided by Iranamok, Caspar Weinberger ordinarily would do well to wave red banners and blow whistles each time the administration makes a move that smacks of doing Iran a favor.

Still, the defense secretary overdid it a bit, opposing the sale to Iran of a computer made by a Massachusetts company and assembled by a Swiss firm into a $900,000 system that monitors electric power generation, not an especially high-tech application.

Caspar Weinberger

Undeniably, many Americans will side with Weinberger's position that America should have no business with the Khomeini regime. But this country's business — its export trade, to be specific — has been notably soft, and it's hard to see how Washington damages the U.S. national interest or enhances Iran's appreciably by permitting the latter's purchase of 10-year-old technology.

That, ultimately, was the decision of the National Security Council, which approved the sale on advice of Secretary of State George Shultz and Commerce Secretary Malcolm Baldrige.

The Iran case illustrates what Reagan had in mind when earlier this year he urged accelerating the export-licensing process and paring down the list of goods subject to controls. His competitiveness program isn't fully in place because some aspects need congressional OK and because the Commerce and Defense departments are vying for final authority to approve high-tech exports.

Granted, fears of selling access to vital U.S. industrial secrets, inadvertently or otherwise, are by no means unfounded; yet they shouldn't unduly hobble us from marketing high-tech, high-profit equipment abroad.

The National Association of Manufacturers estimates that *40 percent* of all U.S.-manufactured goods, equipment or what-have-you requires prior federal approval before sale outside our borders. Clearly, that's too high a percentage. By our excessive caution, we eliminate ourselves as contenders in the global marketplace.

Redressing our abysmal trade imbalance demands, among other measures, developing a more realistic attitude about permissible technology transfers. As Secretary Baldrige notes, our economic well-being is every bit as important to our national security as our military and technical superiority

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ARMS...CONTINUED

would allow Moscow to maintain its production lines and test firings.

2. *Linkage to conventional balance.* Since the missiles reductions are slated to take place over five years, we should link the final phase of withdrawals to the elimination of the huge Soviet conventional superiority. The agreement must provide that negotiations to this end begin immediately and be concluded before the final phase of missile withdrawal begins. In particular, we must insist on the right of equal numbers of short-range missiles until the conventional balance is established. Otherwise, removing medium- and short-range nuclear weapons would simply make Europe safe for conventional war.

Our negotiators must hold their ground on these points. No deal is better than a bad deal. But that is not our choice. We can reach a good deal, for both sides, if we always keep in mind that Gorbachev needs a deal as much as we do. Indeed, if he is genuinely interested in peace, he should want an agreement that increases the security of both sides. Unilateral concessions now may bring a temporary respite but only at the cost of grave risks later.

In addition to arms control, it is vital that a summit convened to sign a missile agreement deal with the major political U.S.-Soviet issues. If summitry is to promote the chances of peace, the superpowers must address the potential causes of war. It is not weapons that cause war, but rather the political differences that lead to the use of those weapons. Therefore, when Reagan and Gorbachev meet, there must be significant progress toward resolving key political issues, such as the Soviet occupation of Afghanistan, Soviet arms shipments to Nicaragua and Soviet-sponsored subversion in Central America. Gorbachev has taken the first steps toward reform at home but has not retreated one inch from Moscow's posture abroad. Indeed, his policy can be said to be a subtler implementation of historic Soviet patterns. He has criticized Brezhnev, but he still enforces the Brezhnev Doctrine.

Every president has an understandable desire to ensure his place in history as a peacemaker. But he must always remember that however he may be hailed in today's headlines, the judgment of tomorrow's history would severely condemn a false peace. If President Reagan stands firm for the principles that he has maintained so steadfastly throughout his career, he will be able to sign the right agreement and make a significant step toward real peace in the world.

gation of literary responsibility. If fiction is to survive as something more than a coterie sport, it must venture something greater than a passive reflection of fragmentation and unease. Indeed, it must manifest some of the very qualities that Lish has attributed to the work of Harold Brodkey: intelligence, moral seriousness, and relentlessness. And, I would add, comprehensiveness and scope.

I am not calling for a curmudgeonly return to the tradition of the 19th-century narrative. Far from it. The modernist revolution in the early part of the century left the writer with an arsenal of new devices and modes—interior monologue, shifting narrators, collage, and temporal modulation, to name but a few—as well as a high injunction: to dare a prose that can face chaos and master it with vision. Woolf, Joyce, Lawrence, Faulkner, Musil, Broch, Kafka—these artists did not finish off fiction; they opened new sluices for it. And in our own time American novelists like Pynchon, Bellow, and Percy have carried on the hard task of probing our place in the turbulent cultural present. All three have managed to keep their focus wide and their grasp on the particular steady. Not one of them has fallen back upon convention for its own sake.

Of course these are all masters in late career. Theirs will not be the shaping voices of the coming decades. It will fall to the younger authors, Lish's among them, to bring the world over into words. But this will not be possible without more exertion and more willingness to risk than many young writers have shown. The careful construction of sentences and paragraphs is a first step, not a final goal. The world of the future is bound to be more dispersed and more synthetic than it is now. There is a real danger, then, that reality will outstrip the writer's ability—if expression fails, understanding fails too. It is necessary to believe, with Gordon Lish, that there is undiscovered greatness in the young. But it is hard to rest easy with the growing cult of small-stage pyrotechnics. The impending challenges are of a different magnitude.

007, LICENSED TO KILL?

"The Target is Destroyed": What Really Happened to Flight 007 and What America Knew About It by Seymour M. Hersh

(Random House, 282 pp., $17.95)

In the very first words of his introduction, Seymour Hersh writes:

> This book began because of the courage of a senior military intelligence officer who, while being interviewed late in 1984 on the shoot-down of Flight 007, decided to tell what he thought was the real story: the abuse of communications intelligence.

But if the book had not "begun" until then, why was Hersh already interviewing a presumably hard-to-interview intelligence officer on its subject? It could hardly have been for straight reportage: Flight KE 007 of Korean Airlines from Anchorage to Seoul was destroyed on the night of August 31/September 1, 1983, and no newspaper, however indulgent, would print news that stale. Thus, the misdirection to come—that the "real" story of Flight 007 is the American abuse of communications intelligence, rather than the Soviet destruction of the aircraft—is introduced by a transparent piece of misrepresentation.

For obviously Hersh had already launched his investigation, whose goal was to identify the true guilty party in the destruction of Flight 007 and the killing of its 265 passengers and crew. That culprit could not possibly be the Soviet Union: no investigative reporter can earn his keep by the mere confirmation of well-known fact, certainly not Seymour Hersh, discoverer of My Lai and one of our premier cover-up experts. It had to be the United States that caused all those deaths, either by an abusive exploitation of the flight for intelligence purposes that went wrong, or by a deliberate provocation that went right and duly enticed the Soviet attack. Only that would be consistent with Hersh's previous books, all of which are dedicated to the exposure of secret

American ill deeds. Was it the CIA or the NSA that had done it? And was the purpose technical-military, that is to force the Soviet Union to reveal its radar methods and air intercept procedures, or was it political, to precipitate an incident that would cast the Soviet Union in an evil light? Or was Flight 007 simply being used as a platform for intelligence sensors, and not meant to be shot down at all?

OF COURSE, if Hersh had declared his true purpose in his introduction, he could scarcely have justified the publication of his book, which in spite of its breathless subtitle ("What really happened . . .") contains no revelations at all, let alone any indications of American involvement in the destruction of Flight 007. Having found no guilty party in the CIA or NSA, nor in the EPA or HUD for that matter, and far too professional to construe a conspiracy out of irrelevant facts or plain fantasies (as the authors of two other books on Flight 007 have done), Hersh could have kept silent. But evidently he had invested too many months of his life in the effort to uncover the latest conspiracy, and having found nothing he decided to make the best of a bad job. Hersh's book is thus made of the leftovers of a failed investigation: a review of the 1978 incident in which an off-course Korean Boeing 707 was shot down (quite deliberately, beyond any doubt that time, as duly noted); a long, very detailed account of what intelligence was collected regarding Flight 007, how, by whom, and when (no, the attack was not being monitored as it was happening; Flight 007 could not have been warned); another 80-odd pages of detail on the timing and nature of successive American declarations about the incident (these pages contain the one charge Hersh actually makes against the administration: that it publicly misrepresented the deed, since it is possible that the Soviets meant to shoot down "only" an American military aircraft); 44 more pages of minute details on the flight, the likely cause of its errant navigation, and the attack itself; and finally a few pages of Hersh's conclusions, of which more below.

To be able to criticize the administration's response to the shoot-down, Hersh depicts himself in the unfamiliar and wildly unconvincing role of a protector of American intelligence secrets. *Of course* there was an abuse of precious communications intelligence by the administration. A source was indeed compromised by the public disclosure before the United Nations and the world media of the intercepted voice communications between the Soviet ground controller and the SU-15 fighter, which ended with that expression of dehumanizing cruelty that gives this book its title: "The target is destroyed." The administration, needless to say, was prompted to disclose an important source precisely by the climate of distrust that Hersh and others like him have striven so hard to sustain. And it is perfectly credible that a military intelligence officer would have complained about it, even if it is totally incredible that Hersh would have shared his professional concern for the maintenance of official secrecy.

Those who wish to find out who exactly was responsible, George Shultz or William Casey or Ronald Reagan himself, or rather those who wish to deduce who among their many aides spoke to Hersh and in what terms, may choose to read his long and tedious chapter ("The Politics") on the subject. As he attributes sundry lucubrations to various third-level officials, the old distinction applies more than ever: servants talk about people, gentlemen talk about ideas. For of course, wise or unwise, the decision to release the information was collective. Moreover, Hersh's style exudes a confidence that should not be taken at face value. On page 100, for example, he makes much of the influence of Fritz Ermath, a senior CIA official. Now there is such a person, but William Casey could hardly have been "relying heavily" on his advice because he was not even in the CIA at the time, nor indeed anywhere in government. Unfortunately this is not the sort of book that can be scrutinized for errors, since it lacks detailed citations. But after a howler like that, one wonders where else Hersh's sources have misled him.

HERSH'S HONESTY as a reporter is not in doubt, even if he does dissemble about his motives. But precisely because he does not invent juicy facts where there are none to be found, because he does not concoct intrigues by spinning a web of insinuations of the sort that have kept the *Nation*'s writers busy, Hersh's book is, frankly, very boring. Readers enticed to part with $17.95 by the suggestive, pre-publication stories printed by Hersh's colleagues in the *New York Times* (Hersh will no doubt repay the debt when their own books are about to appear) have solid grounds for a consumer complaint. Only devotees of bureaucratic analysis will find his tales about quite minor frictions between the various intelligence agencies of any interest.

The book contains page after page about the technicalities of airborne intelligence collection. It is a fascinating subject, to be sure, but only in the wider context of military or diplomatic history, as readers of post-Ultra writings well know. In reading of Ultra's role in the Second World War, one can place secret knowledge in the meaningful setting of the sometimes epic decisions it affected. But when nothing actually happens, the particular collection of intelligence—of radar emissions and routine communications and photography—is merely an ordinary affair of technology and administrative procedure. Unless specific indicators of an impending surprise attack are picked up, the data is simply shipped back to Washington, there to be scrutinized at leisure for any nuances and bits of detail it may add to the great mass of accumulated knowledge about adversary armed forces ("strategic intelligence") that is employed in the periodic revision of assessments and for contingency planning. The activity is worthy to be sure, but it is hardly exciting. What Hersh writes on the subject seems quite accurate as far as it goes (his focus is on collection alone), but he adds very little to what has already been published elsewhere. In any case only readers in the trade will find it of sustained interest, particularly Soviet readers of course.

THE FLIGHT of the RC-135 aircraft that was concurrent with a portion of the flight of the KAL Boeing 747 on the night of its destruction was just such a routine collection effort. That particular RC-135 (a converted Boeing 707) was kitted out with large cameras for the photography of ballistic-missile tests. Other RC-135s, fitted with lots of receiving antennas, are used to record Soviet signals and radar emissions. There are others still (which Hersh appears to have missed) that serve as platforms for still other forms of collection. Conspiracy theorists have made much of the coincidence of these two flights. But they overlook, willfully or ignorantly, the anticlimactic fact that RC-135s of one sort or another are up there flying along the Far East periphery of the Soviet Union virtually every day and night—and along a route that necessarily ap-

proximates the Anchorage-Seoul flight path, because it too has to skirt the Soviet periphery.

According to one conspiracy theory, the RC-135 was in place to observe the Soviet attack in full operational detail—an attack deliberately provoked by the crew of Flight 007, which was necessarily collaborating. (Were they bribed with free tickets to Disneyland?) According to another conspiracy theory, in which the crime is of omission rather than of commission, the RC-135's crew was tracking Flight 007 as it crossed into Soviet territory, Soviet attack instructions were monitored, and quite deliberately nothing was done to warn the Koreans—all this in order to exploit the opportunity of collecting intelligence on Soviet radar and intercept procedures. In a variant of this theory the purpose was instead to exploit the incident for propaganda purposes. And then there is the most complete conspiracy theory, in which more elements are added: an American satellite overhead to monitor Soviet communications, a device planted in the 747 to misdirect its navigation, the RC-135 to watch Soviet reactions, Japanese air traffic controllers who deliberately fail to warn Flight 007 (which is shown off-course on *their* radars), and the management of Korean Airlines fully involved.

ALL THE conspiracy theories are predicated on a confusion between strategic intelligence and tactical intelligence, as well as on the certainty that the United States had to be the guilty party. If there *had* been tactical collection going on, that is the "real-time" monitoring of events for immediate exploitation, and if the RC-135 *had* been equipped and manned accordingly, then it would indeed be possible for all three theories to be true. But that was not the purpose of the flight, or of any flight of that kind, as Hersh himself confirms in excruciating detail. The RC-135 was collecting for Washington analysts, not for immediate use by the members of its crew. They were on board only to work the equipment, not to use the intelligence as it came in. Far from being able to keep Flight 007 under long-range radar observation for any of the various conspiracy purposes, the aircraft that flew that night had no more radar capacity than any airliner. As Hersh writes, "Even an aircraft the size of a 747 cannot be accurately tracked by [an RC-135's] radar . . . until it gets within ten miles." In other words, to monitor the Soviet attack, the RC-135 would itself have had to be inside Soviet airspace, presumably to be destroyed as well—not a very useful procedure, if the purpose of the mission is to bring back the recordings.

In the aftermath of the shoot-down and till this day, Soviet propaganda has offered every one of these conspiracy theories to explain just why Flight 007 had to be shot down. The "special services" of the United States, White House cold warriors, and Korean Airlines have all been accused of having done the deed. (The *Nation* of June 14, 1986, had a long piece on the business history of Korean Airlines, which makes much of its many official connections and naturally ends with the demand for a congressional investigation of Flight 007.) Airliners fitted with inertial navigation devices, as the Korean Boeing 747 undoubtedly was, "cannot lose their way," Soviet spokesmen and conspiracy theorists have said. Such touching faith in the inerrancy of technology raises the interesting question, however, of just why Aeroflot and Cubana fly off-course so often. (It is not for a lack of foreign currency with which to buy the equipment: the same devices are mass-produced in the Soviet Union, if only because they also guide ballistic missiles.) In fact, this particular canard was demolished early, with a wealth of telling detail, by the respected

Japan-based reporter Murray Sayle (in the *New York Review of Books* of April 25, 1985). His excellent article explained how easily a wrong heading can be set on a plane's inertial system, and then kept there for many hours by a bored crew. Hersh prefers to quote a source of his own but tells much the same story.

THE higher-grade Soviet explanation, the one that Hersh does accept, is that the senior Soviet military officer who ordered the attack from Moscow air-defense headquarters—the fable of an unauthorized local initiative by a since-punished junior officer in the Far East keeps being told as well—did so because he made an "honest" mistake. KE 007 was simply confused with the RC-135 flight path. The obvious problem with such an account, however, is that the RC-135 in question had landed more than an hour before the attack, as Hersh in fact acknowledges.

But Hersh offers another, seemingly plausible argument for a misidentification by Soviet radar operators. Supposedly they started tracking the RC-135, and then projected its track onto the KE 007 flight path that they were actually seeing on their screens. Mistakes of that sort are certainly possible; they are even frequent. Still, we must not overlook the evidence of silence, of the dog that did not bark. How could Soviet radar operators think that Flight 007 was actually the RC-135, without then noticing the absence of Flight 007? A scheduled flight perfectly familiar to them, and duly tracked on a nightly basis, can hardly disappear without explanation. If Flight 007 was misidentified, the other Flight 007 had to be in the air. But the RC-135 could not, in turn, be confused with it, because it had long since landed.

None of the evidence presented by Hersh, who was invited to Moscow during the course of his work and was briefed by Soviet military officers in a totally unprecedented manner, rules out a deliberate intercept of the Korean airliner. The real secret that Hersh has not unearthed, the Soviet Union's true secret that is impenetrably shielded by our tenacious refusal to know it, is that the Soviet Union acted in 1983, and is acting still, like a country at war. No doubt there is an ideological dimension to Soviet behavior, and a more important purely Russian dimension as well, but there is finally nothing very distinctive about much of Soviet conduct: it is no different from the conduct of any country at war. Censorship, travel controls, spy mania, sentries that shoot (remember Major Nicholson?), and fighter interceptors that intercept were once to be found in America as well. This is the secret that we so strongly wish to ignore, for to accept it would mean accepting the need for a corresponding mobilization of our own—something that very few Americans, even the most hawkish, could accept with equanimity. Hence we avert our gaze and ignore the plain evidence before us. On each occasion when the Soviet Union forcefully reminds us that it is at war, we eagerly do our best to forget, until the next incident.

But Seymour Hersh just glides on with his version of the honest-mistake theory, as if it were in any way acceptable for the Soviet Union to shoot down an American aircraft, even if it was military, even if it was loaded with cameras, even if it was quite deliberately intruding. (Not by any imagining could it have been a bomber; and at best it would have gotten away with a few bits of new data.) It is common knowledge, for example, that there are Soviet intrusions into European and Japanese airspace. These Soviet aircraft are generally chased out. Perhaps an attempt might be made to force them to land. But they would not be shot down. And if they were, the loss of life would be harshly condemned and the alleged need to protect paltry secrets would be very properly disregarded. Why should the Soviet Union be silently allowed the privilege of protecting its own airspace by murder?

In the conclusion of his book, Hersh writes: "Flight 007 was a full-fledged crisis made far more dangerous by the extent of misunderstanding and anti-Soviet feeling it engendered." In the *New York Times* a few weeks ago, Soviet spokesmen were quoted as follows: "The American side should have shown more decency by keeping silent about it.... Western propaganda ... sheds torrents of tears over the 'arbitrariness' or 'ruthlessness' of the Soviet authorities." And from Soviet TV commentator Igor Kudren came this: "Can you make relations between two great powers dependent on propagandistic campaigns pursuing temporary political considerations?" The subject was not Flight 007, but Nicholas Daniloff. Unless deterred by professional solidarity, Seymour Hersh is no doubt already investigating the "real" story of the Daniloff affair, attempting to discover whether Daniloff was CIA or NSA, EPA or HUD. And no doubt the *Nation*'s favorite writers are already exploring the dubious links between *U.S. News and World Report* and American intelligence, and the strange pattern of coinciding events: reports about disagreements between Reagan advisers, the visit of Ambassador X to Ambassador Y, the secret meeting at ...

EDWARD LUTTWAK

Edward Luttwak's book *On the Meaning of Victory: Essays on Strategy* has just been published by Simon and Schuster.

LITTLE AMERICA, ALONE AT LAST

Estrangement: America and the World edited by Sanford J. Ungar

(Oxford University Press, 347 pp., $19.95)

Estrangement. The thesis of this collection of essays on the trials of American foreign policy has an odd ring. How can we be estranged from the world when we have never been more involved in it? Our troops sit on the front lines in Germany and Korea, our Navy patrols the seas, our manufacturers set up shop in every low-wage corner of the earth, the tumbling dollar is still the world's currency, and it is hard to think of a single place on the globe that we do not consider either a crisis area or a vital interest.

People become estranged when they cease to speak the same language or see events in the same way. Nations are supposed to have interests, their relations marked by considerations like strategic advantage and balance of power. How is it possible to be estranged from the world when we spend most of our na-

LOCKHEED...CONTINUED

But even without the ATF, Lockheed's future seems secure. "They've got a pretty full plate for the next 10 years," said aerospace analyst Wolfgang Demisch of First Boston Corp. Demisch said programs such as the Navy Trident II submarine-launched missile and defense satellite systems should keep the company in the black.

In tomorrow's air-to-air combat, a fighter's electronic warfare ability will be just as important as its airframe design, according to industry watchers. So Lockheed's most important move in 1986, they say, was the $1.2 billion purchase of Sanders Associates. "We have felt for years if there was one area in which we needed to be strong it was in military electronics," Crowther said. "The platform [airframe] is becoming less important in relative value and this is a trend that seems to be continuing."

Lockheed's public relations brochures tell the history of a proud aerospace firm, founded more than 70 years ago. Such pioneering aviators as Charles Lindbergh and Amelia Earhart flew the company's aircraft. The Air Force's first operational jet fighter was the Lockheed P-80 Shooting Star in 1945. The world's fastest and highest flying aircraft is the Mach 3 Lockheed SR-71, a reconnaissance aircraft. A predecessor, the U-2 spy plane, carried Francis Gary Powers high above the Soviet Union.

The 63-year-old Kitchen, the man in Lockheed's corporate cockpit, has a reputation as a tough manager, not a daring entrepreneur. He has been with the company for more than 28 years, starting as a low-level manager at the corporation's missiles and space company. An anecdote to illustrate his business habits is found in the civil suit filed by three former employees. The three came to Kitchen with information that the main frames on some C-5Bs were defective. After Kitchen believed a company investigation proved the men wrong, he simply fired them.

Kitchen's aggressiveness rubs off on the entire corporate body. The company has met every Dingell and Pentagon charge with sharply written rebuttals. "We try to avoid that kind of ludicrous 'no comment' policy if we can," said Crowther.

A four-star Air Force general had to intercede and meet directly with Kitchen before Lockheed would grant repeated Air Force requests to offer a new price for the C-5B. When the new Lockheed proposal came in, it was higher than the original $2.2 billion option.

If defense industry lobbyists were graded for aggressiveness, congressional staffers said Lockheed would rank near the top. How else, staffers asked, do C-130s get added each year to the defense budget, even though the Pentagon doesn't ask for them?

And listen to Crowther explain Lockheed's zeal for the ATF contract: "When the ATF began to surface as a concept, we made a commitment at that time that we were going to go for it with all the strength and energy we could apply. It was an all-out effort from day one."

Lockheed has not always beaten its chest so proudly. It had to survive a well-publicized overseas payoff scandal in the 1970s. Its finances were so bad at the time it needed outside help in the form of a federal loan guarantee. In 1981, Lockheed canceled the ill-fated L-1011 TriStar airliner, after a fatal head-to-head competition with McDonnell Douglas Corp.'s DC-10. Estimated loss to Lockheed: $2.5 billion.

There are question marks in Lockheed's future. Did the TriStar debacle spoil the company's taste for commercial ventures? Lockheed now gets all but 10 percent of its revenues from government and foreign sales. "We have no interest in producing a commercial airliner at this time," Crowther said. But he added that the company is doing some 'long-range" planning to boost commercial revenues.

The future of the Lockheed-Georgia plant is also unclear. The company has no hopes of replacing a major program like the C-5B once the current order for 50 aircraft is filled later this decade. Crowther said Lockheed is now discussing with foreign aerospace firms the prospect of co-producing a next-generation transport for the international market. But once the last C-5B flies from the Georgia plant, the work force will be pared, Crowther said. The company plans to maintain the facility with subcontract work and the venerable Hercules. "The C-130 seems to go on for ever," he said. "I think it will out last me. It will certainly out last me."

WEAPONS SYSTEMS

JANE'S DEFENCE WEEKLY 13 DECEMBER 1986 Pg. 1385

Advances in survivability secure a future for tanks

By Richard Ogorkiewicz

FEW IF ANY items of military equipment have had their demise announced as many times as tanks. But, instead of dying, tanks continue to be a highly effective and important component of the ground forces.

However, this still has not prevented some people forecasting their end. To the casual observer, such people might appear to have a case, because they can show that even the most heavily armoured tanks can be killed by relatively light anti-tank weapons.

However, tanks have never been invulnerable and the fact that they can be killed is neither new, nor does it affect their ultimate value as mobile weapon platforms.

Moreover, although tanks are not invulnerable, they are not as easy to kill as some seem to think.

Their armour may not appear to offer them much protection in the light of the penetration figures quoted for anti-tank weapons and in particular for the latest shaped charge warheads of anti-tank missiles. But the figures which are quoted are not always what they seem.

What is more, the development of the protection of tanks has not stood still. In consequence, they have a better chance of surviving on the battlefield than is often thought.

On the face of it, the most serious threat facing tanks comes from the shaped charge warheads of missiles.

The development of shaped charges has steadily increased their ability to penetrate armour, with the result that the penetration of some of them is now equal to as much as nine times their cone diameter.

This means that even a 100 mm diameter shaped charge warhead of a portable anti-tank missile can penetrate up to 900 mm of homogeneous steel armour.

However, this applies to a shaped charge fired at optimum stand-off distance under ideal, static conditions. Under dynamic field conditions the penetration is generally considerably less.

Deep penetrations by shaped charges are generally achieved at the expense of the diameter of the hole they create in armour. This means that a shaped charge capable of very deep penetration may create a hole in the armour of a tank which is so small that its effect behind the armour is limited.

Thus, the amount of armour which a shaped charge can penetrate is by no means equal to the thickness of armour which it can perforate with lethal effect, a major cause of this being that its jet must not only perforate the armour but, having done it, retain sufficient energy, or residual penetration capability, to cause lethal damage behind the armour.

In consequence, the thickness of armour which a shaped charge can perforate with lethal effect is considerably less than the depth to which it can penetrate armour, the difference being of the order of 200 mm.

All this makes the smaller of the shaped charge warheads less effective than they might appear at first sight and, consequently, reduces the effectiveness of portable anti-tank weapons based on them.

Larger warheads can overcome the various problems by their sheer size but weapon systems incorporating them are no longer portable and have to be mounted on vehicles, which then face problems of mobility and survivability similar to those of tanks.

The other major form of the threat facing tanks consists of high velocity kinetic energy projectiles fired by high pressure guns, and in particular of armour piercing, fin-stabilised, discarding sabot, or APFSDS projectiles.

The penetration figures of APFSDS projectiles are less dramatic than those of shaped charge warheads but there are no questions about their lethality once they perforate the armour of a tank.

This means that the thickness of armour which they perforate with lethal effect is the same as their penetration of it, and not less as with shaped charges.

In general, far less information has been released about the penetration of APFSDS projectiles than of shaped charges. What has been published on it shows that some APFSDS projectiles fired from existing 105 mm tank guns can penetrate as much as 470 mm of homogeneous steel armour at normal battle ranges — which is, incidentally, almost twice the penetration achieved with the earlier APDS projectiles fired from the same guns.

On the strength of this, the latest 120 mm guns can be expected to penetrate about 700 mm of homogeneous steel armour at similar ranges, given some further development of their APFSDS ammunition.

The traditional response to the threats facing tanks has been to protect them with as much as possible of steel armour in monolithic form, that is with single-thickness plates or castings, and the majority of tanks in service still rely on it for surviving if hit.

Typical of these tanks is the Soviet T-55, whose frontal armour has a horizontal shot-line thickness of 200 mm. In the light of the penetration figures mentioned previously, this is clearly inadequate against either of the two principal types of armour piercing weapons in their latest form, or even against several of their earlier versions.

The T-55 is relatively light go and does not represent, therefore, the highest level of protection that can be achieved with monolithic steel armour, although its design is very efficient from the armour point of view.

In fact, armour accounts for as much as

CONTINUED NEXT PAGE

51% of its weight of 36 tonnes.

Nevertheless, higher levels of protection can be achieved with heavier tanks. For example, a turreted tank of 50 to 60 tonnes could have frontal armour with a shot-line thickness of up to 400 mm. This would provide it with a high degree of protection against most gun-fired projectiles and against most shaped charge weapons that have been in use until now. But it would not be adequate against some of the latest and, even less, against future forms of attack of either kind, if tanks were to have a high probability of surviving under fire.

Yet little more can be done with steel armour in monolithic form apart from adopting an exceptionally compact turretless configuration, which is usually rejected on tactical grounds, or confine heavy armour to certain parts of the tank, leaving others, such as externally mounted guns, less well protected.

Otherwise, further increases in the thickness of steel armour would raise the weight of tanks above the generally accepted limit of around 60 tonnes.

In consequence, further improvements in the protections of tanks have had to be found in other forms than monolithic steel armour. The search for alternatives was for a long time directed primarily at finding more effective forms of protection against shaped charges which, until the advent of APFSDS projectiles, were much more difficult to counter with conventional steel armour than kinetic energy armour piercing projectiles.

At an early stage it was found that some non-metallic materials, and in particular glass, were much more effective in relation to their weight than steel in resisting the penetration of shaped charge jets.

This led to the development in the USA during the 1950s of appliqué armour consisting of slabs of glass encased in steel. It was tried with some success on M48 tanks but not adopted.

A somewhat similar siliceous cored armour consisting of a layer of fused silica embedded in cast steel armour was also developed in the USA at about the same time and it was proposed to use it on M48 and then on M60 tanks. Again, although it offered superior protection, it was not adopted.

Further work during the 1960s showed that combinations of layers of metallic and non-metallic materials, or even steel armour by itself but split up into arrays of spaced plates instead of remaining in monolithic form, offered considerable improvement in protection against shaped charges.

However, new armour configurations were not taken up in earnest until the development in the UK of the so-called Chobham armour and its installation in 1971 on FV 4211, which was a Chieftain tank modified by the Royal Armament Research and Development Establishment, Chertsey, to demonstrate that Chobham armour was a practical proposition.

The appearance of the experimental FV 4211 was followed almost immediately by the adoption of Chobham armour by both General Motors and Chrysler for the US XM1 tank which was beginning to be developed at the time, and this led to the introduction of Chobham armour into service, in the US M1 tank, in 1980.

At about the same time another type of the new armour came into use in the West German Leopard 2 tank, and since then virtually every new tank to appear has had multi-layered armour of some kind.

The composition of Chobham armour and its performance have not been revealed so far. However, at least one well-publicised muti-layered armour developed in West Germany is known to consist of an outer layer of steel, an aluminium alloy and to offer as much protection against shaped charges as homogeneous steel armour having 2·8 times its weight.

In the absence of other specific information, the performance of that armour may be taken as an indication of what can be achieved with multi-layered armour in general.

In practical terms it means that a typical tank which in the past might have been designed to have steel armour with a shot-line thickness of 200 mm can now be provided with protection equivalent to 560 mm of homogeneous steel armour.

What is more, heavier tanks could have protection equivalent to about 1000 or 1100 mm of steel armour. This level of protection would make the fronts of tanks virtually immune to all portable anti-tank weapons and, so far as the normal, horizontal direction of attack is concerned, it would leave them vulnerable only to relatively large, vehicle-carried guided missiles.

One could argue at length about the precise level of protection that might be achieved, but the above figures clearly indicate the great advances which have been made in improving the protection of tanks against shaped charge weapons and how wrong it is to claim, as some people do, that the armour of tanks can be easily defeated by such weapons.

The development of multi-layered armour has not produced equally dramatic improvements in the protection of tanks against high velocity, kinetic energy projectiles such as APFSDS.

The level of protection being achieved against APFSDS is such that there are doubts about the ability of 120 mm — let alone 105 mm — tank guns to defeat it and there is talk already of larger calibre guns.

Given that they are of sufficient calibre, guns firing APFSDS projectiles with their long-rod penetrators of tungsten alloys or of depleted uranium, can undoubtedly kill tanks, but guns which can do this are relatively heavy and can only be carried by tanks or other tank-like vehicles.

That being the case, they hardly support the claims that tanks are easy to kill.

Further advances in the protection of tanks, particularly against shaped charges, are now possible with the advent of explosive reactive armour.

This consists of packets containing a layer of explosive sandwiched between two metal plates which are mounted on the outside of the main armour of a vehicle.

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When struck by the jet of a shaped charge, the explosive detonates, driving the plates apart and their motion disturbs the jet reducing considerably its ability to penetrate the armour of the vehicle.

So, the addition of explosive reaction armour can raise the protection level of a tank against shaped charges to a level which is at least three or, according to some claims, five times as high as that provided by monolithic steel armour of the same total weight.

Although explosive reactive armour is still considered as something of a novelty, it has been under consideration for a number of years in more than one country.

It did not come into use until it was employed by the Israeli forces in the Lebanon in 1982 to protect their M60A1 and Centurion tanks.

Since then, explosive reactive armour has appeared on some Soviet tanks and has also been tried on M60A1 tanks in the USA.

So far explosive reactive armour has been used to increase the protection of tanks against horizontal attack, but in the future it is likely to be of particular benefit to tanks in protecting them against the emerging threat of attack from above.

Until now the only common form of attack from above has been artillery shell fragments and the designers of tanks could afford to provide no more than 20 to 40 mm of armour for turret roofs and hull tops.

As tanks begin to face homing submunitions, overflying top-attack missiles and other forms of attack from above, their top protection needs to be increased.

If this were done to any extent using monolithic or even multi-layered armour, it would either considerably increase the weight of tanks or make it necessary to reduce their protection against horizontal attack.

Neither option is, therefore, acceptable and the only way available at present to improve protection against attack from above that does not involve a heavy weight penalty is to use explosive reactive armour.

In future, tanks might be further protected all-round by active protection systems, which would detect the oncoming missiles before they reached the tanks and then destroy their warheads or at least degrade their performance to a considerable extent.

Such systems, which are often, but not very accurately, called 'active armour', have been under consideration for more than 20 years, particularly in the USA.

One of the earliest of the active protection systems proposed there involved the fitting on the outside of a tank of an array of small shaped charges which would be triggered off by the oncoming missiles and destroy them with their jets.

Another system, prosposed much more recently in Israel and described already in *JDW* (20 April 1985), involved the firing of small counter-missiles with the intention of destroying or at least damaging the warheads of attacking missiles.

For all this, active protection systems have yet to be developed to the stage where they can be used in the field, but the chances of this happening are increasing with the advances being made in sensor technology and signal processing, which should make it possible to detect and to respond to the oncoming threat with the necessary speed.

An indication that this might be possible is provided by the ongoing development for tanks as well as helicopters of threat warning systems which can automatically and rapidly activate countermeasures, such as smoke grenade launchers, in response to signals from laser or radar detectors.

The possibility of responding to threats with sufficient speed is perhaps indicated even better by the halon fire and explosion suppression systems which have been developed already for tanks and which have response times of the order of milliseconds.

In themselves the threat warning systems and the fire and explosion suppression systems improve significantly the survivability of tanks.

The former do so by reducing their chances of getting hit and the latter by reducing the chances of catastrophic fires and explosions of the fuel carried in tanks in the event of their armour being perforated.

Simple laser warning systems have already been developed for the Israeli Merkava battle tank and are offered on the Engesa Osorio tank, while halon fire and explosion suppression systems are fitted in the US M1 and in Israeli tanks and are to be fitted in Leopard 2 tanks.

The greatest danger to tanks in the event of their armour being perforated is the possibility of their ammunition catching fire and exploding, but this too is being reduced.

The earliest of them is the location of propellant charges in pressurised water containers which were first installed in British Chieftain tanks and which are now fitted also in the new Challenger tanks.

Another method of reducing the danger of ammunition fires has been developed for the Israeli Merkava where the rounds are stowed in ceramic-lined reinforced plastic containers which provide a high degree of thermal insulation as well as protection against spall fragments.

A different method amounts to locating the ammunition in a compartment separated from the crew and provided with blow-off covers, so that in the event of an ammunition fire the chances of an explosion and damage to the rest of the vehicle are reduced by venting the build-up of pressure to the outside.

This has been done already with most of the ammunition in the US M1 and with part of the ammunition in the Leopard 2.

All these developments represent very considerable advances in the survivability of tanks and, although none of them makes tanks invulnerable, they reduced the chances of them being destroyed by enemy weapons and consequently contribute to their continued effectiveness.

Hand-held launchers

By Ian Hogg

UNDOUBTEDLY ONE OF the biggest headaches facing Western military planners is the selection and provision of a short-range hand-held anti-tank weapon for front line infantry.

On the one hand it must be small and light, otherwise it might be discarded rather than carried for miles.

On the other hand it has to be big, for the simple reason that success against tanks by hollow-charge is virtually a function of the charge diameter.

Add to that the desire that the firing signature should be as insignificant as possible, that the ambushing soldier should be able to fire it from inside an enclosed space, that the velocity should be as high as possible so as to reduce the chance of a miss against a moving target, and the demand that the whole thing should cost fourpence and be capable of manufacture by redundant blacksmiths, and you begin to see the size of the problem.

You also begin to see why there appear to be so many solutions. David M Abshire, US Ambassador to NATO, recently complained that there were 11 companies in seven countries building different anti-tank systems — and he was only talking about NATO.

Success in this field depends on a number of things. In the first place it is necessary to hit the target, which argues such things as accuracy and consistency.

In the second place it is vital that on arrival at the target the projectile should do some worthwhile damage, which involves fuzing and the design of the shaped charge warhead.

Accuracy and consistency is supposed to have some relationship to the amount of tube or barrel available to launch and guide the rocket as it is launched, but a quick check of some 18 current designs shows that the ratio of calibre to launcher length varies widely, from a low of 11·5 (Apilas) to a high of 21·2 (the Yugoslav M79).

The mean works out at 15·7, which seems to put LAW-80 in the right place with its ratio of 16. Two others in the right area are the Swiss RL83 (15·6), and the Israeli B-300 (16·5).

But for all this divergence of opinion, practical observations seem to show that any one is as accurate as any other and, obviously, with rocket solutions, a great deal must depend upon the ballistics of the rocket and the performance of the motor, shown by the range of launch velocities — anything from 99 to 285 m/sec.

In the matter of warheads there is almost as much difference of opinion. The 66 mm M72 LAW is well-known and, in most minds anyway, is now thought to be too small to be useful; yet other countries which have copied it seem happy with even smaller calibres — 64 mm for the Soviet RPG-18 and the Yugoslav RBR-M80, though the Czechs went up to 68 mm for their RPG-75.

The top end of the scale is represented by Sabracan at 130 mm and the SEP DARD at 120 mm.

A mean of the 18 weapons reviewed gives us 92·8, with 11 of the entries lying between 82 and 90 mm. Again, LAW-80 comes well out of this with a calibre of 94 mm.

Years ago the rule of thumb was that penetration into homogeneous steel armour was 2·5 times the charge diameter, but modern developments in explosives and charge geometry have changed that considerably.

Admittedly, manufacturers are somewhat coy about stating precisely how much armour they can defeat, but taking the manufacturers' figures for our specimens gives an average ratio between charge diameter and penetration of 4·78, with, as might be expected, the older designs (the M20 Super-Bazooka and the Blindicide) at the low end, and the most modern designs (Apilas and Sabracan) at the high end with

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ratios in excess of 6.

It is interesting to see that modern designs around the mean calibre give penetration/calibre ratios which are also around the calculated mean.

Thus the Instalaza C-90C with a calibre of 90 mm has a penetration ratio of 5·1, and the earlier M-65, an 89 mm weapon, has a ratio of 4·8.

The alternative approach is that selected by the Soviets with their RPG-7, West Germany with the Panzerfaust 3 and Lanze, the Finns with their M55 and the Yugoslavs with their M57: keep the calibre of the launcher small but use a projectile with an over-calibre head.

The Germans pioneered this approach over 40 years ago with the original Panzerfaust which, for all its utilitarian appearance, was a formidable weapon in the hands of a skilled soldier.

Indeed, the final model (Panzerfaust 250) would give any modern tank a *mauvais quart d'heure* on a good day, even now.

Advantages

There are two advantages to this system: firstly, the warhead can be of a diameter big enough to do the job without demanding a large launcher, and secondly, the warhead can be shaped for the best flight ballistics without having to consider its actions inside a launch tube.

But some quick arithmetic discloses something odd about the over-calibre class. First, the mean ratio of launch tube diameter to warhead diameter is 1·927; secondly, the mean ratio between warhead diameter and penetration is 3·73, a rather different figure than that determined for full-calibre launchers.

Admittedly, the sample is smaller, with only 10 specimens, but even so this discrepancy is surprising; on the face of it there seems no good reason for over-calibre warheads having a different penetration performance.

But if we remove the three oldest weapons — the Czech Pancerovka, the Chinese Type 69 and the RPG-2, the mean value then goes up to 4·52, which is closer to the other figure, confirming that modern design has a lot to do with the ratio.

At the top end of the scale we are looking at the Panzerfaust 3 with 6·36 and the FFV 597 with a figure of 6·8, while the RPG-2 weighed in with 2·12, so the spread is fairly broad.

And to tie in the two ratios in this class, it is noteworthy that those which diverge most from the mean launcher/warhead diameter figure are also those which show the worst warhead/penetration value.

There is a well-known artillery rule of thumb which says that range times weight of shell divided by weight of gun gives you a 'figure of merit' for comparing the performance of weapons.

A good deal of time can be wasted in comparing the various parameters of anti-tank launchers in an attempt to produce something similar, but the results are so odd they are not printed.

There is obviously something wrong with a formula which says that the Yugoslav M80 (a 'clone' of the 66 mm M72) is of equal merit to the LAW-80 and vastly superior to the French LRAC-89.

One suspect area is the effective range claimed by some manufacturers, while another is the penetration figure, simply because most manufacturers simply say 'better than x mm' and leave you to imagine the rest.

With these two values a matter of chance, no amount of mathematics is ever going to provide us with an accurate comparison.

The subject of penetration figures raises the problem uppermost in many minds today: how will this class of weapon perform against modern armours — Chobham and reactive types.

The protagonists of these armours have spent the past few years saying they can defeat practically any type of attack, either by virtue of their layered construction or simply because a blast of reactive explosive will disrupt whatever is trying to do the penetrating.

If this is the case, why have so many new designs of anti-tank weapon appeared in the past five years?

Several makers of warheads claim their designs beat composite or reactive armour, and the truth lies somewhere between the two; modern warheads will beat most armour most of the time.

Careful design of the shaped charge, selection of the liner material, the use of plastic lenses to direct the detonating wave through the charge, and selection of high-brisance explosives have all helped to bring the present day charge up to a high degree of efficiency.

Study of recent patents suggests that the next move will be to the use of multiple charges; one recent design had two small obliquely-arrayed charges located in the space ahead of the principal charge and directed so as to strike the target in the same place as the jet from the main charge.

Due to their positioning, and doubtless to other details of construction, the small charges will detonate first and, arriving at the target, will either detonate the reactive armour charge or make a first attack on the surface of compound armour. The main charge then detonates, and has a clear run since the reactive element has been removed or has a head start, into the compound armour.

The only objection to this appears to be the unspoken requirement for the projectile to be of a fairly large calibre in order to accommodate this layout.

So far nobody has put forward a hand-held launcher designed for top attack, though it is likely that such a design will appear before the end of the decade.

The two features necessary for this to succeed are stabilisation and proximity fuzing; so far it seems to have been thought worthwhile to go to these lengths only in

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missiles, which are large enough to carry the necessary circuitry and mechanisms and expensive enough to absorb the cost.

But the size, efficiency and cost of electronic devices improve daily, and there seems no technical reason why small, inexpensive and effective stabilisation and fuzing should not be available for the large-calibre group of hand-held launchers in the future.

There are, though, some tactical reasons why top attack might not be thought such a good thing in this class of weapon. Why have several Warsaw Pact and other countries suddenly appeared with lightweight launchers based on the obsolescent American 66 mm M72 LAW?

For years they have been happy to field the RPG-7, which has demonstrated an extremely useful performance in many places; suddenly they have all adopted a weapon which, though some may claim greater penetrative performance, is unlikely to have the range of accuracy of the RPG-7.

The reason could be simple: that the infantry of these countries wish to have a weapon which will deal effectively with the lighter armour which is now coming on to the battlefield in greater numbers — APCs, MICVs, IFVs and so on.

Vulnerable

All are vulnerable to light weapons, whereas the current and expected main battle tanks are not.

One suggestion is that the defeat of MBTs will be the responsibility of the wire-guided missiles, operated by specialist teams, while the defeat of light armour will be left to any infantry soldier who comes across one.

If this reading is correct, and if Western nations take up the same policy, then it is unlikely that a refinement such as top attack, which is entirely a method of defeating MBTs, will ever be called for in the lightweight short-range weapons.

Finally, a short tour through the less well-known light anti-tank launchers might be of interest.

Two French designs which deserve to prosper are the Thomson-Brandt Sabracan and the Europac Jupiter; these originated with the French Army's requirement which has been filled by Apilas, and thus official French interest in them has subsided, but there would still seem to be a prospective export market for both designs.

Sabracan weighs 13·5 kg ready to fire, and launches a 130 mm 4·5 kg rocket by means of a recoilless charge, ejecting a plastic-flake countershot.

From the shoulder it is accurate to 300 m; placed on a simple stand the range is increased to 600 m, and the shaped charged warhead can defeat in excess of 800 mm of armour.

The Jupiter is an over-calibre design, though this is not apparent since the head of the projectile is enclosed in an enlarged section of the launch tube.

Once again, this is a rocket ejected by a recoilless charge, using a countershot, and the firing charge is contained between two pistons which lock into place at the ends of the tube, so that the flash and smoke and much of the report are trapped inside — the same idea which is seen in the West German Armbrust.

The 115 mm warhead claims penetration better than 800 mm, and the effective range is 300 m. The weight at firing of the complete weapon is 12 kg, the projectile accounting for 3·5 kg of this.

Instalaza of Spain has had its C90-C system in service for some time; this is a disposable glass-fibre tube from which a 90 mm rocket is launched to an effective range of 300 m.

The warhead will penetrate 400 mm of steel armour, and the whole unit weighs only 3·9 kg ready to fire.

This has now been improved into the C90-D model; of the same calibre, the rocket is slightly longer and heavier, so that the all-up weight is now 4·45 kg, the range has been improved to 400 m and the penetration figure is now 480 mm.

The Yugoslav 90 mm M79 appears to be based on the French LRAC89 design insofar as it uses a separate combustion chamber, in which the rocket is pre-packed.

This bayonets onto the end of the launch tube, the rocket is fired, and the combustion chamber is then removed and discarded, prior to loading the next.

The rocket weighs 3·5 kg and can penetrate 400 mm of plate, while the entire unit, ready to fire, weighs 10·7 kg and has a range of 350 m against tanks.

The most interesting feature of this design, though, is the arrangement of the rocket charge around the tail boom; this appears to be based on a German idea which was not completed in 1945, that of the Hammer anti-tank launcher.

In brief, the rear end of the rocket's tail boom is shaped so that a venturi-like space is left between the edge of the tail tube and the interior of the launcher.

The firing of the charge generates gas which passes between the tail swell and the launch tube, so that this annular space becomes the actual nozzle of the rocket. For several years this writer wondered who would revive this idea. Now we know!

Mines: a growing potency

By Terry Gander

THE ANTI-TANK MINE remains one of the tank's greatest enemies.

Recent innovations in fuzing and other electronic enhancements have increased its potential effectiveness against the very mobility that remains one of the tank's greatest assets.

This increase in anti-armour capability on the part of the anti-tank mine has been growing steadily over the past decade. It has arrived along with an increase in the speed at which anti-tank minefields or barriers can be emplaced and yet, despite all the updating and introduction of electronic wizardry, the anti-tank mine has changed little.

It is a fuzed container packed with explosive that remains a hidden threat to armour and if it does not immediately halt a tank formation's advance, the very threat of mine obstacles can cause delay and channel or divert an attack towards an area chosen by a defender.

One thing that certainly has changed has been the arrival of the rapidly-scattered anti-tank mine. Many battlefields cannot have minefields already positioned well before an attack for the simple reason that most anticipated battlefields are crowded places.

Large swathes of real estate cannnot be sown with mines well in advance of a military event, so they have to be sown in a hurry.

It is here that recent years have seen some notable innovations but already it can be sensed that what were once regarded as fast-laying methods (such as the British Bar minelayer, the Swedish FFV minelayer and the Soviet PMR series, all basically plough systems) are already being regarded as too slow by some authorities.

Instead, more emphasis is being directed towards other rapid-laying methods, including scattering from helicopters.

Examples have been around for some time, such as the helicopter-carried Italian MISAR SY-AT and Technovar DAT scattering systems that empty under-slung and crate-like mine magazines in programmed sequences.

A more recent example is the American Honeywell Volcano system carried by the UH-60A Black Hawk, although it can also be carried on a truck in a manner similar to the West German Dynamit Nobel MiWS Skorpion or the Italian Istrice. These latter systems rely upon projector barrels to scatter their loads of mines.

Artillery has now got into the rapid minelaying act. The US Army has for some time fired the 155 mm RAAMS (Remote Anti-Armor Mine System) from M109 series self-propelled howitzers, and each RAAMS projectile contains nine M75 anti-armour mines.

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Many other ammunition concerns are now investigating the RAAMS approach but find it more profitable to use bomblet sub-munitions rather than mines.

The Rheinmetall 155 mm RB 63 and Rh 49 projectiles are cases in point along with the recent South African ERFB innovations, and there are many other similar bomblet delivery methods.

One minelaying novelty is the Chinese Type 74 Minelaying Rocket System which fires salvos of mine-carrying rockets, each weighing 127 kg and carrying 10 Type 69 or 70 anti-tank mines.

Then there is the French Alsetex Mitral mine, a small triangular bar mine that is designed to be a track-buster only but one capable of being delivered by a variety of means from helicopters to carrier rockets.

Bomblets seem to be chosen primarily due to the mine diameter limitations that most carrier projectiles possess. Scatterable anti-armour mines such as the American M75 have distinct armour-damaging limitations caused simply by their size constraints that prevent the containment of enough explosive to knock out heavy tanks.

The best they can do is damage tracks or otherwise inflict disablement rather than the required destruction.

For some scenarios this lack of a knock-out capability has to be accepted, for the end product is a rapidly-sown mine barrier that adequately fulfils the requirements of delaying or channeling enemy forces.

The advancing armoured unit commanders can never be quite sure that all the mines they will encounter will only be of limited effectiveness, and for most intents and purposes a tank with a blown-off track is just as disabled as one destroyed.

Thus several weapon systems, including the Phase 2 Multiple Launch Rocket System, are now in line for anti-tank loads such as the West German AT2 anti-tank mine.

This versatile little design has been in use with the Bundeswehr's LARS field rocket system and with MLRS each Phase 2 rocket will carry a payload of 12 AT2 mines.

The AT2 is now entering West German service with the M548-carried Skorpion (MiWS) system and is apparently currently under consideration by the British Army as part of its proposed new family of scatterable mines and using some form of pallet-based projector system.

The AT2 is still in line for a great deal of further development, including the proposed Dynamine family of mines, but many of the future improvements will involve electronics and here a new field opens.

The silicon chip has made just as important an impact on the anti-tank mine fuze design scene as it has elsewhere in the defence field.

The data-handling power and potential of miniature chip-based devices has transformed what was once the anti-tank mine's simple mechanical pressure fuzing system into a complex sensor system with many hitherto unanticipated tactical possibilities.

It should be stressed that electronics have little to do with the mine itself, only with the fuze. Once the electronic fuze has done its job the mine still inflicts its damage in the usual manner, either by blast, the hollow- or shaped-charge effect or, more recently, by

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the self-forging fragment or slug.

By using the discrimination and capability of the electronic fuze the mine can now deliver its destructive effects far more accurately than of old and against the more vulnerable lightly-armoured parts of the target, usually the belly armour.

Electronic fuzes are now more readily described as sensors. Into the miniscule space of miniature circuit boards can be packed devices that detect targets by a variety of means. Some chip-based fuzes use magnetic sensors, others acoustics and some use a combination of both.

They can be programmed to discriminate between wheeled and tracked targets and sometimes even between types of tank or types of mine-clearing device.

Others can be made to act on targets travelling only in certain directions. Then there are the infra-red sensors, often used in place of the usual pressure tapes or wires placed across a path covered by a side-attack or horizontal action mine — the French IRMAH device is a good example.

To these attributes can be added a number of other advantages. Electronic fuzes can be easily switched on and off by remote devices such as those used with the Italian Technovar TCE/3·6.

Here a portable device resembling a mine detector is passed over buried mines to activate their fuzes or neutralise them to make them safe to lift and re-use.

The trend is to make mine fuzes self-neutralising after a pre-programmed period, removing the need for time-consuming and potentially dangerous clearing operations before sown terrain is used.

An alternative is to self-destruct after a pre-selected interval, which not only saves the clearing process but adds a harassing factor to occupants of a sown area.

In addition, electronics can be incorporated into anti-handling devices. With some electronic fuzes even a touch from an unprepared hand is enough to set off the mine and with others a slight movement is sufficient, yet both types of device can usually be deactivated or even cut out altogether by activating a simple switch or arming lever.

The same applies to the mine overall, for many are now designed to be disarmed by a simple action and then lifted for use elsewhere or even returned to storage.

There are now many anti-tank mines utilising the full advantage of the electronic fuze but the description of one covers most.

The recently-introduced Austrian Intertechnik ATM 2000 E has magnetic/acoustic sensors in addition to the usual pressure fuze, an anti-handling device, an optional self-neutralising system and it can be safely disarmed and re-used if required.

It is fitted with a delay to ensure that the main charge will not detonate until the target tank is well overhead, and to top it all it can discriminate between various types of target. This array of attributes does not exhaust its technical description but it does provide an indication that electronics are altering the tactical possibilities of the anti-tank mine.

For many nations, these innovations are of little use as they are already sitting upon vast stockpiles of what are now regarded as elderly but still usable mines.

Although many of them are easily-detected metal designs, they can still knock out any tank but as they rely upon mechanical pressure fuzes they have to be sown in large numbers to produce effective barriers.

To meet this obvious market, several firms have devised various updating packages. These vary from complex electronic fuzes that fit into existing fuze wells to vertical mast sensors to convert pressure-activated mines into belly-attack mines.

In both categories is Marconi with its range of MM fuzes that includes purely electronic sensors to less expensive updated mechanical methods, including tilt masts.

The mast approach has been taken by the Swedish Philips concern with its ATF-1 mechanical mast fuze and the British Army has for some time had the capability to update its old Mk 7 anti-tank mines with the L93A1 tilt rod fuze kit.

It is now updating its Bar mines to the full width attack mine (FWAM) configuration, again using Marconi fuze expertise. Ferranti, not be outdone, is offering its Intelligent Influence Fuze (I^2F) for retrofitting to many models of anti-tank mine.

The mix of scatterable mines and electronic fuzes seem set to make the anti-tank mine a very viable anti-armour weapon.

As always, an array of delivery and sensor techniques will keep any potential enemy unsure of what they might encounter but there is still a move within NATO for some form of standardisation.

The current NATO requirement is for an improved conventional mine system (ICOMS) and agencies and manufacturers are jostling to become involved.

One result is that FFV of Sweden and Honeywell Defense Systems of Minneapolis have teamed to promote the Swedish FFV 028 anti-tank mine as the future ICOMS. Other associations will no doubt become known soon. In the meantime the FFV 028 is doing very well anyway as it has already been accepted for service by Sweden, West Germany and The Netherlands and is under evaluation in Austria.

The FFV 028 is not as electronically complicated as some other mines on the market but it does have various sensors, self-neutralising devices and can be safely disarmed and lifted when necessary. It can also be placed mechanically or manually.

Despite all the design improvements mentioned above, many nations are still quite content to manufacture standard anti-tank mines with none of the innovations mentioned here.

For them anti-tank mine warfare is a simple art and requires none of the finesse now thought essential by some of the more advanced practitioners.

All that many Third World (and other) armies require are simple pressure-activated metal cased-mines and anything else is either too expensive or too complicated for them to contemplate, so the basic-standard anti-tank mine is far from dead.

Today's anti-tank missile

By Ian Hogg

IN SPITE OF the research being done into fire-and-forget missiles, it seems a fairly safe bet that the second-generation semi-automatic command line of sight (SACLOS) missile will be with us for many more years.

At this time the systems are well understood, by designers, manufacturers and soldiers, with the result that reliable and accurate missiles are now commonplace in most armies.

Recent firings with MILAN 2 show a hit rate of 93% as the worst case, with 100% being achieved sufficiently often to make it no longer remarkable.

Area of debate

The only area of debate among control designers lies in the relative merits of wire or laser beam guidance, but the warhead designer is constantly being pestered to improve performance, particularly in view of the growing use of compound and reactive armours.

In fact the size of current warheads makes one wonder whether any type of armour can really claim to be proof against them.

MILAN 2 detonates 1·8 kg of high explosive; the warhead of ACCP Eryx carries a 3·6 kg charge; Swingfire and TOW probably have about the same weight.

Any of these detonated at the correct stand-off from the target will produce a big enough bang to cut through anything a modern tank carries.

There is, perhaps, an argument for the jet-disrupting effect of reactive armour, but as mentioned elsewhere, designers are already examining methods of overcoming this by using small charges which will deal with the reactive armour immediately before the main attacking charge detonates.

This author first fired a PIAT many years ago, and has never yet seen an armour development which an ammunition designer failed to beat.

The most interesting area in the missile field today is the current American search for a medium-range system.

TOW 2 is perfectly satisfactory as a heavyweight long-range system. The Swedish FFV AT-4 has been selected by the US Army, but the ground in between is, at present, badly covered.

The current weapon is Dragon, but Dragon has been getting a bad press recently.

There are claims that its hit rate is rarely better than 20%, that it lacks a night sight, that the firer is too exposed in his sitting position and that its range is insufficient.

The usual American remedy is being applied; a Product Improved Dragon will appear in due course. The improvement appears to have been addressed principally to the warhead, in a similar fashion to other upgrades, but little appears to have been done to cure the other complaints.

Meanwhile Ford-Aeronautics, Texas Instruments and Raytheon have fielded solutions as their offerings to the AAWS-M (Advanced Anti-tank Weapon System — Medium) programme.

The Ford design uses laser beam riding and can be fired from the prone or standing positions, while the Raytheon Striker uses a two-colour infra-red seeker and is a fire-and-forget weapon.

Assuming that neither of these programmes runs into trouble, it can be expected that one or other of them will be in service in perhaps seven years from now, the procurement treadmill being what it is. If problems do crop up, well, to quote some random examples: HOT took from 1964 to 1977 to enter service, Mosquito began in 1954 and took 10 years, Bantam took from 1956 to 1963, as did Dragon, and TOW started in 1965 and went into service in 1971.

What this means is that the US Army is going to be short of mid-range anti-tank cover until the middle 1990s at the earliest, unless something is done.

Current thinking is that it would make sense if they were to adopt MILAN; in the first place it fills the technical requirement

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— range out to 2000 m, man-portable, capable of stopping MBTs in frontal attack — and in the second place it would be another gain in NATO standardisation, since the USA is the only major NATO country not using MILAN, and its adoption would doubtless bring Denmark, Italy, Luxembourg and The Netherlands into line; currently they are all equipped from the USA with the TOW/Dragon mix.

From what is heard, the army would be happy enough to adopt MILAN, but having recently burned their political fingers over the Minimi machine gun and the Beretta pistol, they prefer to keep a low profile over the acquisition of yet another foreign weapon.

Any suggestion that the MILAN should be adopted will automatically release several political hares which will run and run in many directions.

The arguments for MILAN are irrefutable — combat-proven, in mass production, available off the shelf, NATO standard, 24-hour capability — but they will cut very little ice with some people.

Unfortunately there seems to be some slight schism in NATO over the all-round adoption of one system.

Italy is busy developing its own medium-range weapon, the MAF, under development by Breda and Officine Galileo for an Italian Army demand. MAF is a SACLOS laser beam-rider which launches an 18 kg missile to a range of over 3000 m, and it may be this extra range which attracts the Italian Army.

It is open to question whether this additional range is really necessary; any missile with a better range than 1500 m is going to be out of easy gunfire range from tanks when it begins launching, and the chances of obtaining a clear shot at 3000 m are few and far between.

The next field of interest is the continuing appeal of top attack. Since Bofors proved that top attack was feasible with their RBS-56 BILL missile, designers have begun looking more closely at the idea.

Raytheon, in its AAWS-M proposal, points to the fact that its missile is "guided during seeker homing to achieve lofted trajectory and large attack elevation impact angles, exploiting advanced armour tank vulnerabilities".

This means that the missile soars up and swoops down so as to attack the top of the tank.

Interim solution

The obvious interim solution, for those who cannot wait for a top attack missile, is to retrofit existing missiles so as to adapt them to this type of attack.

Thorn-EMI have developed a top-attack fuzing system which can be fitted to most existing missiles, though, of course, there will have to be some modification of the warhead as well.

The fuze works by using two laser beams which intersect at the correct stand-off distance from the target, and when both beams reflect simultaneously, showing that both are meeting in the correct place, then the fuze initiates the warhead.

Given that a canted warhead should not be too difficult to develop and insert into existing missiles, this promises a solution which should be relatively inexpensive and should extend the useful life of present-day missiles for some considerable time.

As it stands now, whenever anybody in intelligence comes up with a new reading of the armour thickness of the latest Soviet tank, there is an instant cry for bigger warheads. If existing warheads can be modified into top attack patterns, then we can perhaps ignore the next three or four alerts.

Looking around at the current inventory of anti-tank missiles, it seems that the pattern has set into a shaped-charge method of attack, and one is sometimes asked whether there might not be some other approach?

The alternatives are few; a squash-head warhead was tried years ago on Malkara, but the need for a sizeable quantity of explosive meant that the resulting missile was enormous and had to be vehicle mounted. The idea has never been tried again.

The self-forging fragment has attracted a great deal of attention from the designers of artillery-delivered top attack weapons, but it seems unlikely to have sufficient power to become a practical side-attack system, given the thickness of contemporary side armour.

It may well find a place in top attack warheads, but the general feeling is that anything a self-forging fragment can do, a shaped charge can do better.

The fragment, of course, relies upon kinetic energy, and this leads us to the current idea of a super-velocity missile carrying a long rod penetrator; in other words, delivering a APFSDS sub-projectile by rocket rather than shooting it from a gun.

This appears to be attractive for unguided weapons, always provided that the requisite velocity can be reached with accuracy unimpaired.

It has been suggested that the drawback with using this system with a guided missile would be the difficulty of guiding it, since the operator would never see it in flight.

This, though, argues manual control, and we can see no reason why, with semi-automatic control, the weapon should not function perfectly well provided the operator places his sight on the target correctly.

The problem, in our view, is the high-speed response demanded of the control system so as to steer the missile into the sight axis in the short time of flight.

Perhaps the answer might be to split the flight in two; a slow start, to get the missile aligned, followed by a rapid acceleration to get it up to impact velocity.

There are all sorts of problems in this, though, and perhaps the long rod penetrator is best left to the gun.

ADVANCED MATERIALS

'WINGS OF GOLD' WINTER 1986 Pg. 34

Wonder Materials

In Naval Air's Future

By L.E. Sloter

The most striking development in aircraft structural technology during the past decade lies in the use of resin-matrix composites. Such materials provide high strength-to-weight ratios and resist fatigue and adverse environments. The result: New dimensions in aircraft design, speed and airlift.

A quiet revolution in the technology of materials and the processes required for their utilization is making it possible to implement aircraft systems with higher performance, longer life, greater reliability and greater survivability.

Materials are being tailored to fit specific design requirements through such techniques as surface modification and powder processing of metals and sophisticated lay-up techniques, alloying and molecular chemistry of organic materials. Similar tailoring of ceramic materials for structural application appears to be a near-term possibility that could permit substantive increases in propulsion performance and efficiency.

These trends can be expected to continue and the pace of technological change to accelerate during the coming years.

If there is one concept that can safely be predicted to apply to materials and materials usage in Navy aircraft during the next several decades and into the 21st Century, it is complexity — a complexity that will be transparent to the aircraft user. Not only can materials themselves be expected to become more complex, but the entire systemic application of materials in aircraft from raw feedstock through manufacture and assembly and, finally, into the Fleet will be a more integrated and challenging process.

High-Performance Alloys

In particular, the challenge of meeting aircraft performance requriements for air superiority will require the application of complex high-performance materials in both structural and propulsive systems. New material capabilities to counter new threats will need to be incorporated in advanced aircraft as well.

Many of these generic requirements can be met by evolutionary developments in the materials that currently are available. Revolutionary developments in such areas as hybrid materials for structures and ceramics in hot structures and engines realistically can be expected given reasonable research and development resources and maturation time.

Nevertheless, these high-performance materials and material systems — for, indeed, many of these advanced materials will be complex systems in their own right — will not be forgiving of poor workmanship in construction or maintenance in service. This leads to a great challenge for the materials developer and materials engineers to join in developing new aircraft that meet rigorous operational requirements and yet are more safe, reliable and maintainable than current systems. It need hardly be mentioned that these aircraft must be affordable as well.

DR. SLOTER is Section Head-Metals in the Materials and Processes Branch at Naval Air Systems Command. He has degrees in Metallurgy and Materials Science from Carnegie-Mellon and in Materials Engineering from Drexel. Prior to joining NASC he was a metallurgist at the LTV Aerospace and Defense Company, where he held positions in Development Engineering and Research.

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CIMS Control

A quick reference aid on U.S. foreign relations
Not a comprehensive policy statement
Bureau of Public Affairs • Department of State

Controlling Transfer of Strategic Technology April 1986

Background: The purpose of controlling the export of strategic militarily relevant technology is to deny Warsaw Pact and certain other countries access to technology that would increase the effectiveness of their military establishments. Because development of sophisticated weapons today depends on many advanced supporting technologies that have dual use (civilian as well as military), it is increasingly necessary to identify and control those commercial technology transfers that could threaten US national security. US regulations require a license to be issued before any technology can be transferred to a potential adversary country. This requirement permits a review of the potential military utility of the technology, to ensure that transfers of militarily relevant technologies do not occur under the guise of civil-use projects. The need to maintain more effective controls on the transfer of Western technology to the East is highlighted by conclusive documentation of the USSR's past and continuing reliance on Western high-technology know-how in furthering its military buildup and in strengthening those elements of the Warsaw Pact industrial base that directly support Soviet war-making capability.

The Soviet Union is determined to obtain controlled Western equipment and technology by any means it can--including circumvention of export controls. The US, acting alone, could not prevent such diversions of controlled items, because in many cases we are no longer their sole producer. The cooperation of the Coordinating Committee for Multilateral Export Controls (COCOM) is therefore of greater importance than ever. As evidence of Soviet diversion efforts mounts, the COCOM nations' determination to improve enforcement capabilities has grown, and additional resources are being applied to this task.

Organization and major functions of COCOM: COCOM, established in 1949, now includes the US, Canada, Japan, and 13 European countries. Spain was the latest member to join, in late 1985. COCOM has no formal relationship to NATO. Although COCOM is not based on any treaty or executive agreement, there have been few instances when a member country has deviated from commitments made in COCOM.

A permanent COCOM secretariat is located in Paris, staffed by dedicated and highly experienced professionals. All 16 member countries have permanent delegations to COCOM, also based in Paris. The US delegate and his deputy are Department of State officers. Their permanent staff is joined by teams of US-based government technical experts and interagency policy-level personnel during negotiations on new or revised export control definitions and other substantive meetings.

COCOM is principally a coordinating and decision-making mechanism. Agreements are put into effect jointly by its member countries. As enacted, each member's publication of the agreed control definitions carries the force of law or of export control regulation, so that the definitions may be administered and enforced effectively. The

controlled products may be grouped into three categories--direct military use, dual use, or atomic energy use. COCOM also reviews potential shipments of specific embargoed items to proscribed countries. All comments by other COCOM delegations are considered by the exporting member, which permits the export only when the risk of the diversion to military use of the product or technology is deemed acceptably small. Equipment capabilties may have to be altered in order to gain acceptance for shipment. Finally, the COCOM member countries act to harmonize their licensing practices on export controls and to coordinate their export control enforcement activities.

Improving COCOM's effectiveness: COCOM faces continued Soviet and Warsaw Pact efforts to obtain militarily sensitive equipment and technologies. At the July 1981 Ottawa summit, President Reagan raised the problem of transferring Western technology to the Soviet Union. These discussions led to a high-level COCOM meeting in Paris in January 1982, the first such Under Secretary-level COCOM meeting since the late 1950s. Subsequent high-level meetings took place in April 1983 and February 1985. Lower-level consultations are held regularly, as the US is cooperating actively with other COCOM members for improvement in each of the three above mentioned functional areas. About $2 million is now being spent to upgrade the computer equipment, software, and other facilities for the COCOM secretariat.

Relations with non-COCOM countries: One problem facing COCOM is how to protect against the export or re-export of embargoed commodities from non-COCOM countries to the countries of concern. The US deals with this problem in part by requiring licenses for re-exports of US-origin embargoed products. COCOM members also maintain continuing dialogues with a growing number of other countries regarding cooperation on export controls and avoidance of diversions. Some countries could choose to adopt full COCOM membership. Others that produce or trade in embargoed high-technology products have established methods for cooperating in the protection of militarily relevant items.

For further information: See also Department of State GISTs on "U.S. Export Controls" and "U.S. Export Controls and China."

ARMS CONTROL ISSUES

TIME 16 MARCH 1987 Pg. 40

Of Arms and Reforms

By Andrei Sakharov

In February, barely two months after Soviet authorities unexpectedly released him from internal exile, Andrei Sakharov created a worldwide sensation by turning up at an international forum in Moscow. Sakharov, 65, a nuclear physicist often described as the "father of the Soviet hydrogen bomb" and a courageous defender of human rights in his homeland, spent nearly seven years under virtual house arrest with his wife Elena Bonner in the closed city of Gorky. During the February forum, Sakharov delivered three speeches eloquently expressing his concerns about human rights, U.S.-Soviet relations and the nuclear arms race. He made a slightly edited version of those speeches, along with a preface explaining his reason for giving them, exclusively available to TIME.

In the speeches, Sakharov takes up the broad themes that repeatedly have brought him into conflict with the Kremlin since the early 1960s: the connection between preserving peace and protecting human rights, the need for greater openness in the Soviet Union, and the possibility of an eventual convergence of capitalist and socialist societies.

Sakharov voices deep skepticism about Ronald Reagan's proposed Strategic Defense Initiative. Yet he does not favor the Soviet negotiating position that makes an arms-agreement "package" dependent on what amounts to U.S. abandonment of SDI. Mikhail Gorbachev's latest proposal of a separate agreement on intermediate-range nuclear forces appears to approach this position.

The conclusion of Sakharov's statement may surprise those who saw Chernobyl as a crippling if not fatal blow to the future of nuclear power. He argues strongly for the further peaceful development of nuclear energy, but suggests that reactors be buried underground to prevent any repetition of last year's Soviet nuclear disaster.

"Democratization and liberalization in the U.S.S.R. will be impeded unless the arms race slows down. Gorbachev and his supporters, who are waging a difficult struggle against ossified, dogmatic and self-seeking forces, have an interest in disarmament . . ."

I agreed to participate in the "Forum for a Nuclear-Free World and the Survival of Mankind" on Feb. 14-16 in Moscow, and I spoke at three sessions. My decision attracted great attention. Some approved of it, some condemned it, many characterized it as sensational. But for me the choice was clear.

My views were formed during the years I spent on nuclear weapons; in my struggle against testing of these weapons in the atmosphere, underwater or in space; in my public activities and writing; in the human-rights movement; and in Gorky isolation. My fundamental ideas were reflected in a 1968 essay, "Progress, Peaceful Coexistence, and Intellectual Freedom," but since then life has brought many changes that have forced me to modify my position and make it applicable to specific circumstances. I am referring in particular to recent changes in the domestic life and foreign policy of the U.S.S.R.

The main and constant ingredients of my position are the idea that the preservation of peace is indissolubly linked to the openness of society and the observance of human rights, as formulated in the Universal Declaration of Human Rights, and the conviction that only the convergence of the socialist and capitalist systems can assure a fundamental and lasting solution to the problem of peace and the survival of mankind.

I realized that my participation in the forum would be used to some extent for propaganda purposes. But I believed that the positive significance of a public speech, after I had been gagged for so many years, would outweigh any negative effects.

The ideas I expressed differ in many respects from the official Soviet position, but in many other respects they coincide with it. In any event these are my thoughts, my convictions. At the forum, two Soviet participants, Academician Yevgeni Velikhov, vice president of the Soviet Academy of Sciences, and Andrei Kokoshin, the deputy director of the Institute of U.S.A. and Canada Studies, argued at length against some of my ideas. I take that as an indication of the importance and relevance of my words.

My first speech was delivered at a session on strategic arms reductions, the second at a session on antiballistic-missile (ABM) defense and the Strategic Defense Initiative, the third at a session on the problem of banning underground tests [a so-called comprehensive test ban, or CTB]. I attach special significance to the second of the talks, in which I came out against the "package" approach, whereby the U.S.S.R. is strictly linking agreements on nuclear weapons reductions to conclusion of an SDI agreement. Another important statement was on the safety of nuclear power, in my third speech. I would like there to be a broad public discussion of these issues.

My participation in the forum was reported in the Soviet press but not the main points of my remarks. This is what *Pravda* wrote: "Academician A.D. Sakharov noted the unsoundness of the position of SDI proponents. He also termed as incorrect the idea that the existence of the SDI program would spur the U.S.S.R. to disarmament talks. The SDI program impedes negotiations. The scientist also proposed his own version of how to achieve a 50% cut in nuclear weapons." Western radio stations have also reported my views imprecisely and incompletely. This reinforced my decision to publish the complete text of my speeches at the forum.

ON GORBACHEV. I have thoughts of a technical nature regarding strategic arms reduction. But first I would like to examine certain general issues. As a citizen of the U.S.S.R., I direct my appeals to the leadership of our country in particular, along with the other great powers with their special responsibility for the world situation.

International security and real disarmament are impossible without greater trust between the nations of the West and the

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U.S.S.R. and other socialist countries. There must be a settlement of regional conflicts on the basis of compromise and restoration of stability wherever it has been disrupted. Support for destabilizing and extremist forces and all terrorist groups should be ended, along with attempts to expand the sphere of influence of one side at the expense of the other. All countries should work together on economic, social and ecological problems. Greater openness and democracy in our country are necessary. We need the free flow of information; the unconditional and complete release of prisoners of conscience; the freedom to travel, to choose one's country and place of residence; effective control by the people over the formulation of domestic and foreign policy.

Despite the continuing process of democratization and the increasing openness in the country, the situation remains contradictory and unsettled, and in some areas instances of backward movement can be observed (for example, the new decree on emigration). Without a resolution of political and humanitarian problems, progress in disarmament and international security will be extremely difficult, if not impossible.

Conversely, democratization and liberalization in the U.S.S.R.—and the economic and social progress closely associated with them—will be impeded unless the arms race slows down. Gorbachev and his supporters, who are waging a difficult struggle against ossified, dogmatic and self-seeking forces, have an interest in disarmament, in making sure that huge material and intellectual resources are not diverted to producing new and more sophisticated weapons.

SAKHAROV ATTENDING MOSCOW FORUM

But the West and the entire world also have an interest in the success of reforms in the U.S.S.R. An economically strong, democratic and open Soviet Union will be a very important guarantor of international stability, a good and reliable partner in the common resolution of global problems. On the other hand, if the West tries to use the arms race to exhaust the U.S.S.R., the course of world events will be extremely gloomy. A cornered opponent is always dangerous. There is no chance that the arms race can exhaust Soviet material and intellectual resources, or that the U.S.S.R. will collapse politically and economically; all historical experience indicates the opposite. But the process of democratization and liberalization will stop. The scientific and technical revolution will assume a pronounced military-industrial character, and as one might fear, expansionist tendencies and alliance with destructive forces will prevail in foreign policy.

STRATEGIC ARMS. Now a word regarding the special problems of strategic arms limitation. At their meeting in Reykjavík last October, President Reagan and General Secretary Gorbachev discussed a simultaneous 50% cut in all types of strategic weapons of the U.S. and U.S.S.R. This plan would maintain the existing proportions of various types of arms for each side. I am relying on publications available to me; it is possible that certain details are unknown to me. The "proportional" scheme is the simplest, and it is quite natural that progress should begin with that. But it is not the optimal outcome, since it does not solve the problem of strategic stability.

A large part of the U.S.S.R.'s thermonuclear capability is in powerful, silo-based missiles with multiple warheads [SS-17, SS-18 and SS-19 ICBMs armed with MIRVs and launched from underground silos]. Such missiles are vulnerable to a pre-emptive strike by the modern, highly accurate missiles of the potential enemy. It is of decisive importance here that a single enemy missile with multiple warheads can destroy several silo-based missiles. Given the rough equality of the U.S. and the U.S.S.R., the enemy could use only a portion of his own missiles to destroy all of one side's silo-based missiles. In that situation, the strategic importance of being the first to strike grows enormously. A country relying mainly on silo-based weapons may be *forced* in a critical situation to launch a first strike. This is an objective strategic reality that cannot be ignored by the opposing side.

I want to stress that no one planned this situation when silo-based missiles were deployed in the 1960s and '70s. It arose as a result of the development and deployment of multiple warheads and the increase in missile accuracy. But today silo-based missiles—and, more generally, any missiles with vulnerable launch sites—constitute the principal source of military strategic instability.

For this reason I believe it is extremely important to give priority to cutting back missiles with vulnerable launch sites, i.e., missiles that are mainly first-strike weapons. That means first and foremost reducing the number of Soviet silo-based missiles, which are the backbone of Soviet thermonuclear forces, as well as U.S. MX missiles [the new, ten-warhead ICBM that became operational at the end of 1986]. Perhaps simultaneous with an overall reduction in numbers, some of the remaining Soviet silo-based missiles should be replaced, at the same time as the general cut, by less vulnerable missiles with equivalent striking power (missiles using mobile or camouflaged launchers, cruise missiles with various basing modes, submarine-based missiles, and so on). I believe there is no need to replace the U.S. MX missiles, since they play a smaller role in the overall balance and can simply be eliminated in the process of bilateral cuts.

Admittedly, negotiating a nonproportional reduction [one that would require heavier cuts for silo-based ICBMs] is more difficult for experts and diplomats than agreeing to a proportional reduction. But I am convinced that this is extremely desirable. The additional expenditures required for restructuring Soviet strategic forces seem to me fully justified, and the deeper the cuts in the [Soviet and U.S.] strategic forces, the smaller those expenditures will need to be.

That brings me to the question of how to determine the maximum cuts in the strategic forces that will still permit strategic stability to be maintained. That is a very difficult task, involving numerous unknown and not properly defined factors.

I shall cite two considerations illustrating these difficulties. An assessment of the damage that would result from a nuclear exchange depends on what scenario one uses, on whether the enemy has launched a first strike or a retaliatory strike. As I see it, a country undertaking a dangerous confrontation may decide to launch a first strike, since the level of damage it will sustain from the enemy's retaliatory blow will be lower. That raises the considerably more complex question of *maximum* acceptable damage that a country contemplating a nuclear war can sustain. How much harm to the populace and the nation's economic and military potential can a government undertaking nuclear confrontation permit as the price for victory? For that question to arise, it is assumed that there would not be mutual assured destruction.

This question cannot be resolved on the basis of a peacetime psychology. I recall decisions made under critical circumstances by leaders of the recent past, but in fact the situation of which we are speaking here [a superpower's willingness to "go nuclear" in a crisis] is without precedent. For this reason, I would be hard put today to name a specific level [of strategic nuclear weapons at

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which war would be "thinkable"]. It may even approach the level of what we think of now as mutual assured destruction! In any event, this question can be postponed until after a 50% reduction has been implemented [with a "priority" on reductions in first-strike weapons, such as fixed-site ICBMs].

A nuclear-free world is a desirable goal, but it will be possible only in the future as the result of many radical changes in the world. The conditions for peaceful development now and in the future are settlement of regional conflicts; parity in conventional arms; liberalization, democratization and greater openness of Soviet society; observance of civil and political rights; a compromise solution on the issue of antimissile defenses without combining it in a package with other questions of strategic weapons. Convergence—a rapprochement of the socialist and capitalist systems—offers a real and lasting solution to the problem of international security.

UNTYING THE PACKAGE. The possibility of an agreement on several critical disarmament problems emerged in Reykjavík. But the negotiations were frustrated by the SDI problem, more precisely by Reagan's reluctance or inability to conclude a compromise SDI agreement providing for both a moratorium on deployment in space of ABM components (which is a necessary condition) and specific limitations on the testing of SDI, which involves launches of components into space or underground nuclear explosions. In the version most acceptable to the U.S.S.R., the agreement would provide that SDI work be limited solely to laboratory research. Apparently the compromise agreement proposed by the Soviet side was unacceptable to the U.S. side, since it deprived America of a free hand to proceed with SDI.

SOVIET STRATEGIC MISSILE IN ITS SILO

Given the predictable position that Reagan took [he rejected the Soviet attempt to limit SDI to the laboratory], the package principle adopted by the Soviet side assumed decisive importance. It makes an agreement on SDI a necessary condition for other disarmament agreements, especially any agreement to cut the number of ICBMs. A deadlock developed.

I believe that the package approach can and should be revised. A significant cut in ICBMs and medium-range and battlefield missiles, and other agreements on disarmament, should be negotiated as soon as possible, independently of SDI, in accordance with the lines of the understanding laid out in Reykjavík [presumably with the additional feature of priority cuts in silo-based MIRVed ICBMs]. I believe that a compromise on SDI can be reached later. In this way the dangerous deadlock in the negotiations could be overcome. I shall try to analyze the ideas that led to the package approach and demonstrate their unsoundness. I shall also attempt to demonstrate the unsoundness of the arguments in favor of SDI itself. I'll begin with the latter.

I'm convinced that the SDI system is not effective for the purpose for which its proponents claim it was intended. ABM components deployed in space can be put out of action even in the nonnuclear stage of a war, and especially at the moment of transition to the nuclear stage, through the use of antisatellite weapons, space mines or other means. Many key land-based ABM installations will also be destroyed. The use of ballistic missiles with lighter warheads and solid-fuel missiles with decreased boost-phase time will require an excessive increase in the number of SDI space stations.

ABM systems are of little use against cruise missiles and missiles launched from close range [with "depressed," sub-ballistic trajectories]. Any ABM system, including SDI, can be effectively overcome by simply increasing the number of decoys and operational warheads, by jamming and by various methods of deception. All this as well as other considerations makes SDI a kind of "Maginot line in space"—expensive and ineffective. Opponents of SDI maintain that even though it would be ineffective as a defensive weapon, it could create a shield behind which a first strike would be launched, since it might be effective in repelling a weakened retaliatory strike.

I think they are wrong. First, a retaliatory strike would not necessarily be greatly weakened. Second, almost all the arguments cited above regarding SDI's flaws in defending against a first strike would apply to a retaliatory strike as well.

Nevertheless, neither side can be expected to abandon SDI research at this time, since the possibility of unexpected successes cannot be ruled out. What may be even more important and realistic is that the concentration of resources on the cutting edge of technology may result in important spinoffs in peaceful and military fields, such as in computer science. I still believe all these considerations and possibilities to be secondary in comparison with the enormous cost of SDI and the negative influence of SDI on strategic stability and disarmament negotiations.

Possibly SDI proponents in the U.S. are counting on an accelerated arms race, associated with SDI, to exhaust and ruin the economy of the U.S.S.R. This policy will not work and is extremely dangerous to international stability. In the case of SDI, an "asymmetric" response (i.e., a push to develop offensive forces and weapons to knock out an SDI system) would most efficiently frustrate such hopes. The claim that the existence of the SDI program has spurred the U.S.S.R. to disarmament negotiations is also wrong. On the contrary, the SDI program is impeding those negotiations.

I shall now proceed to the central question of the package approach. A seemingly serious argument is cited in defense of the package principle: imagine that the U.S.S.R. abandons the package and agrees to a substantial cut in strategic missiles, while the U.S. maintains its freedom to deploy SDI and at a certain point begins launching SDI components into space—in the version proposed by Secretary of Defense Caspar Weinberger, for example [Weinberger eight weeks ago called for early deployment of a preliminary SDI, including some space-based components]. Weinberger's project envisions the development of a network of space stations over several years, each armed with several dozen antimissile missiles to destroy Soviet ICBMs in the boost phase of their trajectory. In addition, a network of sensors, reconnaissance and battle-management stations would be created. The purported danger of this system is that it would not be effective against the currently existing number of Soviet missiles, but would be sufficient, after that number is cut, to render the U.S.S.R. unarmed for all practical purposes. It is also possible that offensive nuclear space-to-ground missiles and offensive space-to-ground laser weapons could be hidden on the hundreds of space stations contemplated.

I shall begin with the last worry. Space-to-ground weapons do not appear very promising to me. Missiles deployed on space stations would have much lighter warheads than ground-based

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ballistic missiles of comparable cost. Moreover, the space stations and any devices launched from them would be very vulnerable to pre-emptive attack, and lasers capable of igniting fires at a distance of 100 kilometers (some 62 miles) or more must be extremely powerful and are not very reliable. But the main argument advanced in favor of the package approach is the potential of SDI against reduced Soviet ICBM forces.

I believe it is *extremely unlikely* that the U.S. would deploy SDI under conditions of an arms reduction, considering the extremely negative political, economic and strategic consequences of deployment and the harm SDI would do to the stability of the world situation. (Prominent U.S. political figures are convinced that Congress would not permit it.) If disarmament begins, the SDI program in the U.S. will lose its popularity.

But even if the forces insisting on SDI deployment nevertheless were to prevail, the U.S.S.R. would not be left in a hopeless position. It could bring to a halt any reduction of its strategic forces and begin accelerated construction of mobile strategic missiles and cruise missiles, which would thus replace vulnerable silo-based missiles. As I have noted, such substitution is desirable for other reasons.

Simultaneously, the U.S.S.R. could begin accelerated development of antisatellite weapons and space mines, which would enable it to destroy or paralyze the U.S. SDI system. It would be especially easy to destroy the comparatively few reconnaissance stations. The cost to the Soviet Union would increase, but it would not exceed acceptable levels. It would be comparable to the expense of sticking to the package approach and the existing level of the arms race.

Of course the second scenario is less favorable than the first for the U.S.S.R. But it is also less favorable for the U.S. and for the entire world. This provides reason to hope that the U.S. will not deploy SDI and will limit itself to research, which may even bear fruit in peaceful areas.

This then is the choice, either insistence on the package approach and a continuation of the arms race at existing and growing levels, combined with inevitable deployment of SDI, or abandonment of the package approach, which would permit an escape from the Reykjavík deadlock. Of course, in the worst case [SDI deployment], which I do not believe likely, a new round of the arms race would begin with the U.S.S.R. replacing silo-based missiles with mobile ones. Even in that event, I do not believe that the strategic position of the U.S.S.R. and the stability of the international situation would be different from the situation that would be the case if the package approach were maintained (and the Soviet Union's political stand would be enhanced [by its show of flexibility]). Therefore I wholeheartedly favor renunciation of the package approach.

INSIDE A LENINGRAD NUCLEAR PLANT

TESTING. Regarding the problem of nuclear testing, I maintain that the combat capability of many new versions of nuclear weapons (of both the fission and fusion kind) can be reliably determined without conducting nuclear tests. A possible exception may be weapons based on new physical and design principles. But existing physical and design principles already are quite sufficient to manufacture nuclear weapons satisfying all military requirements. Testing is not required to develop new versions of weapons differing only in terms of dimensions, weight or other such parameters from those previously tested. Testing is currently not necessary to verify the reliability of older, stockpiled weapons or to verify their ability to withstand the mechanical, thermal and radiation effects they may have been subjected to in combat.

One can in principle divide every nuclear charge into four relatively independent systems: electronic, ballistic, atomic and (for a hydrogen device) thermonuclear. The reliability of the first three systems can be confirmed by laboratory tests supplemented by experiments in which a low-yield fission or fusion reaction releases a small quantity of neutrons, which can be measured by a counter close to the charge to be tested. The fourth system—thermonuclear—does not require testing in the majority of cases, since its reliability may be established by analogy to previously tested charges based on the same physical and design principles. At the same time computer simulations of thermonuclear explosions are also quite helpful (calculations of explosive processes exhibiting spherical symmetry or symmetry of the axis of rotation are completely reliable; the reliability and accuracy of these calculations can be verified by comparing the computer simulation of actual test results obtained for analogous charges exploded in the past).

Thus the question of nuclear testing is not critical for restraint of the nuclear arms race. The issue of nuclear testing, in my opinion, is of minor, secondary importance in comparison with the other military, technical, political and diplomatic problems involved in preventing thermonuclear calamity. Underground tests are conducted in sufficiently deep chambers with adequate safety measures to prevent ecological damage both in the country performing the tests or beyond its borders. As long as nuclear weapons exist and are not banned, the decision regarding underground testing is the internal, sovereign affair of each nuclear power.

I believe that eliminating the issue of a comprehensive nuclear test ban will facilitate negotiations on more urgent problems of disarmament. I have deliberately omitted any discussion of the propaganda and psychological aspects of the test-ban issue.

Nuclear weapons divide and threaten mankind. But there are peaceful uses of nuclear energy that should promote the unity of mankind. Permit me to say a few words on this subject. Participants in the forum have mentioned in their speeches the disaster at Chernobyl, an example of the tragic interaction of equipment failure and human error. Nevertheless, the aversion people rightly feel for military applications must not spill over to the peaceful use of nuclear energy. Mankind cannot do without nuclear power. We must find a solution to the safety problem that will rule out the possibility of another Chernobyl resulting from human error, failure to follow instructions, design defects or technical malfunctions.

One effective solution is the underground siting of nuclear reactors at a depth that precludes the escape of radioactive substances into the atmosphere in the event of an accident. This would also assure nuclear safety in the event of [damage to the reactor as a result of] a conventional war. It is particularly important to assure the safety of nuclear plants used for generating heat and electricity in the vicinity of large cities.

The idea of underground siting of nuclear reactors is not new. The principal argument against it is the cost factor. But I'm convinced that the cost will be acceptable if modern excavating equipment is used. And, really, no expense should be spared to prevent accidents involving radiation. I believe that people concerned about the potential harmful consequences of the peaceful use of nuclear energy should concentrate their efforts not on attempts to ban nuclear power, but instead on demands to assure its complete safety. ■

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COMMENTARY

Saudis Face Problems in Meeting Threat From Iran

By DREW MIDDLETON

All is quiet in the Persian Gulf war — too quiet to suit Saudi Arabia and its neighbors. With billions to spend, the Saudis have plunged into the arms market and, it is worth noting, they no longer appear entirely dependent on purchases from the United States.

The reason for this sudden splurge in defense spending, the Saudis tell foreign analysts in Riyadh, is a fear of Israeli aggression. This is nonsense. The Israelis, although by far the strongest military power in the Middle East, have dangers closer to home — growing Syrian military strength and the continuing turbulence in Lebanon, to name only two.

No, Saudi Arabia would be much wiser and more realistic if it came out with the true reason for the present rearmament. It is the same reason that haunts the governments of all the gulf states: the fear that Iran, slowly getting the upper hand in the war with Iraq, is bound to win that war, perhaps within the year.

Such a victory would mean, at the very least, military and political operations by Shiite Islamic fundamentalists against the established governments of Saudi Arabia and other gulf states.

Western intelligence analysts know that Ayatollah Khomeini's regime in Tehran already has appointed various ayatollahs to carry out the will of Khomeini or his successor once the present governments in Baghdad, Riyadh, Kuwait and the minor states of the gulf have been driven from power by the Shiite movement.

Under those conditions, Saudi Arabia's moves to strengthen its defenses make sense. But, as in almost all purchases, there is a major gap between receiving the weapons and employing them effectively in war.

The first six of a total of 72 British Tornado aircraft, for example, recently arrived in Saudi Arabia. The Saudi government bought the British planes after the Reagan administration's refusal in 1985 to sell 40 American F-15s.

Anyone who has seen the Tornado in exercises in the Middle East or over northwest Europe will concede that it is a formidable weapon system. The planes acquired by the Saudis are fitted with fire-control and munitions systems plus advanced avionics. That gives the aircraft ground-attack capabilities, something the Saudis have been seeking for years.

The question is: Who will fly the Tornados? The obvious answer is the Royal Saudi Arabian Air Force. But wait a minute. Those Tornados are not for amateurs. Saudi pilots will have to put in a great deal of training time before they are capable of fighting effectively in the Tornados.

In the past the Saudis have employed Pakistani and other foreign pilots to fly their most advanced aircraft. Those sources, according to intelligence sources, are slowly drying up. It looks as if the Saudis will have to do this on their own, and their air force is a long way from being as effective on the air as it seems on paper.

Another problem that besets the Saudis and their neighbors is the absence of real coordination among the members of the Gulf Cooperation Council. The council and the Saudis are in the market for maritime-surveillance aircraft that would keep the gulf clear of hostile shipping. The French and American aircraft industries have been notified of this interest.

Yet neither the council nor Riyadh has any plan for using the aircraft when and if they are purchased and delivered. There is very little communication between the Saudis and the other members of the council: Kuwait, Bahrain, Qatar, Oman and the United Arab Emirates.

Western analysts have noted, for that matter, that there is very little communication among the various Saudi military services.

Oman is by far the strongest military power in the council after Saudi Arabia. The remainder are capable of putting together about one infantry brigade for one exercise a year. That is not the sort of power that will make the Iranians tremble if they win the gulf war, then begin their Islamic fundamentalist crusade.

Saudi defense expenditures are expected to be between $18 billion and $20 billion a year over the next few years. Much of that will go to British, French and other non-American suppliers.

The inevitable conclusion is that U.S. influence in Saudi Arabia, so strong for so long, will not be as great in the uncertain years to come.

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F-16 Conversions Come in Droves; Other ANG Force Structure Changes Announced

Maj Gen John B. Conaway, director of the Air National Guard, announced the conversion of five Air Guard units to F-16s and one unit to F-15s. He also announced the delivery of KC-135s to five Air Guard units. The force structure changes will begin this year to continue through 1989.

Five Air Guard units will receive a combination of 18 F-16As and Bs. These units are: 187th Tactical Fighter Group, Dannelly Field, Alabama; 188th Tactical Fighter Group, Fort Smith, Arkansas; 184th Tactical Fighter Group, McConnell AFB, Kansas; 114th Tactical Fighter Training Squadron, Kingsley Field, Oregon; 142d Fighter Interceptor Group, Portland, Oregon.

The 102d Fighter Interceptor Wing, Otis ANG Base, Massachusetts, will receive a combination of 18 F-15As and Bs.

The five refueling units that will each receive two KC-135As, which are to be converted to "E" models before delivery, are: 126th Air Refueling Wing, Illinois; 190th Air Refueling Group, Kansas; 101st Air Refueling Wing, Maine; 157th Air Refueling Group, New Hampshire; 128th Air Refueling Group, Wisconsin.

WEAPONS...CONTINUED

A weapons specialist at Eaton Analytical Assessments, Anthony Cordesman, said it is unlikely that Iran has managed to develop its own TOW-derivative. "Because of the sophistication of the guidance, it is extremely difficult to modify it, although it is possible to modify the warhead.

"It's very costly to try to put that into any kind of production. It's probably the worst system to try to modify or copy of any small land-warfare system around, because it is so heavily optimized around volume production," Cordesman explained.

Bodansky called the Sagger "much more suitable for the Iranians than the TOW. There've been reports about the Iraqis losing a lot of tanks recently, and I would attribute that to the Iranians using their version of the Sagger."

In the mode the Iranians are apparently producing, the missile and launcher are packed inside a small case, "similar to an overnight bag," Bodansky said. "You open the suitcase, and there is the missile in two pieces. You fix them together by two very simple clips. You fire the missile, and you have a small joystick, so you can aim the wire-guided missile visually."

He called it "ideal" for the fighting taking place in the marshlands of the south, where the Tigris and Euphrates Rivers merge and empty into the Persian Gulf. Although the Sagger is reputed to be slower in flight than the TOW and it takes longer to acquire its target, it is also less complicated to use. Bodansky called it "soldier-proof," and said the missile can be fired at an Iraqi tank by any Iranian foot soldier lying hidden among the reeds.

Despite its age — it was used very effectively by Egypt in the 1973 October War with Israel — "it's one of the best in the world," Bodansky said. "The warhead is excellent, and you don't have the huge cylinder of the TOW or all of that [TOW's] extremely sophisticated electronic equipment." When assembled, an AT-3 rocket is just 2 feet long. A TOW missile is nearly twice that size.

'Moving Toward Production'

"In principle," he said, "Iran is moving toward production of these kinds of weapons. The extent to which, now, they are building from kits, or building some of the parts in Iran, is something that is very difficult to trace."

The military analyst was also concerned about apparent Iranian success in assembling, or co-producing, missiles for 122mm rocket launchers. "They were given the initial technology from the PLO," he said. "Of course, that, too, came originally from the Soviets."

One area where Bodansky said Iran has definitely gained ground is the production of munitions. "I do think the Iranians are approaching self-sufficiency in ammunition production — for everything, not just small arms. They are definitely not in a desperate situation, except for the air force. There, they do have major problems."

Iran's warplanes are U.S.-built, and the difficulty of obtaining parts to keep them aloft has seen most of them grounded, according to numerous analysts. Part of the $400-million deal with Vietnam reportedly included delivery of 12 F-5s and parts for even more. Iran's F-5 fleet numbered some 85 planes in 1985, according to the London-based International Institute for Strategic Studies. Most of them were then believed to be unusable because of the lack of parts.

In an effort to thwart Iraqi supremacy in the skies over their mutual border, Iran has reportedly turned to China. As the Pasdaran has gained clout politically inside Iran, its commanders have apparently demanded an alternative to the U.S. planes. *Jane's* reported in early February that at least 12 Shenyang F-6 fighters had reached Iran from China.

The aircraft is a copy of the Soviet MiG-19, and its introduction into the Pasdaran air force is reportedly a precursor to shipments of F-7 fighters, which are Chinese clones of Soviet MiG-21s.

The F-6s were reportedly sent to Iran via North Korea. In that case, analysts have said, they would most likely have been sent overland via the trans-Siberian railway. The Soviet rail network intersects Iran's national system on the border in Azerbaijan. According to several sources, Soviet engineers maintain and operate Iran's trains.

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