News & Comment

NATO Ponders Its Nuclear Options

The INF treaty has focused renewed attention on proposals to modernize the nuclear weapons that will remain in Europe, but NATO is divided on their merits

The impending removal of intermediate-range nuclear missiles from the arsenals of the superpowers, under the agreement signed this week by President Ronald Reagan and General Secretary Mikhail Gorbachev, has left Western military leaders groping for a new policy on nuclear weapons in Europe.

The North Atlantic Treaty Organization (NATO) is discussing possible deployment of new missiles, bombs, and artillery shells to "modernize" European nuclear weapons in the 1990s. These weapons would replace or strengthen some existing systems and would not be covered by the new agreement.

But NATO members are sharply divided over which new weapons, if any, are required, and virtually any move to deploy new nuclear arms on European soil would be sure to ignite strong public opposition. Moreover, the U.S. Congress has already placed strict limits on the development of many of the weapons that NATO is thinking of deploying.

Efforts to modernize NATO's nuclear systems could also deepen divisions over the desirability of further nuclear arms reduction in Europe. Many of the weapons in line for modernization are short-range missiles and artillery shells that would be stationed and used in West Germany. The Soviet Union suggested last May that these weapons be subject to arms control negotiations and there is considerable support in Germany for this approach. But NATO's other members are strongly opposed to further nuclear arms control in Europe because of concerns about weakening Europe's nuclear deterrent in the face of the Warsaw Pact's apparently superior conventional forces.

Representative Les Aspin (D–WI), the chairman of the House Armed Services Committee, in a recent speech at a AAAS arms control symposium, summed up the potential political danger facing NATO if it moves either toward modernization or further nuclear arms reduction. "At this point," he said, "more arms control or modernization would be too unsettling, politically, to the alliance, and could well rupture its basic cohesion."

The INF (or intermediate nuclear force)

agreement signed in Washington this week will lead to the destruction of U.S. and Soviet land-based missiles with ranges between 500 and 5000 kilometers. For the United States, this will mean the elimination of the 108 Pershing II and 464 ground-launched cruise missiles, whose deployment began in 1983. In addition, West Germany has agreed to scrap 72 old Pershing 1a missiles, which are equipped with nuclear warheads over which the United States maintains control. For its part, the Soviet Union will give up its 441 triple-warhead SS-20s, its 112 old SS-4s, and about 160



Broken Lance? NATO defense ministers want to replace 692 short-range Lance missiles with a more accurate weapon.

shorter range SS-12s and SS-23s.

This will still leave a substantial nuclear force under NATO control. Almost 4000 nuclear warheads will remain, mostly in the form of artillery shells, short-range missiles, and nuclear bombs. The British and French nuclear forces would also be retained. Why, then, is there any sentiment for beefing up these already considerable forces? The answer is partly military and partly political.

The Pershing IIs and cruise missiles to be removed under the INF agreement were the only European-based missiles capable of striking deep within Soviet territory. NATO will be left with short-range missiles and artillery shells that could be used only along the front lines, together with nuclear bombs carried by aircraft that are facing improved

(and improving) Soviet air defenses.

Former U.S. Defense Secretary Caspar Weinberger, in a speech shortly before leaving office, consequently argued that the INF agreement will leave NATO nuclear forces poorly deployed. "To maintain a robust nuclear deterrent, our nations must be willing to modernize our nuclear arsenal," he said

The modernization of NATO's nuclear arsenal has in fact been under discussion for many years. Indeed, the general outlines of a modernization program were laid out at a meeting of NATO's defense ministers at Montebello, Canada, in October 1983, when agreement was reached on a variety of measures that would reduce European-based nuclear warheads under NATO control from 6000 to 4600, mostly by scrapping some obsolete missiles and nuclear mines.

That aspect of the Montebello agreement received a lot of public attention and has mostly been implemented. A less publicized aspect of the agreement was a decision to replace some of NATO's remaining nuclear systems with more capable weapons. In other words, the program endorsed at Montebello would have left Europe with a smaller, but more effective, nuclear arsenal.

Many aspects of the modernization program have not been carried out, however. Last May, at a meeting in Stavanger, Norway, NATO's defense ministers again called for nuclear modernization, and at a further meeting in Monterey, California, last month, specific proposals were discussed but an overall program has not yet been agreed upon.

The options under consideration include the following:

■ Nuclear artillery. First introduced in the 1950s, nuclear rounds capable of being fired from 8-inch and 155-millimeter guns constitute the bulk of NATO's short-range nuclear weapons. In the early 1980s, about 1670 of these warheads were stockpiled in Europe. They are prime candidates for modernization because they are cumbersome to fire and their short range—around 15 kilometers—would severely restrict their usefulness in a battle.

The Montebello agreement envisaged re-

1498 SCIENCE, VOL. 238

placing the stockpile with new artillery rounds that would be easier to use and have a range of up to 30 kilometers. For several years, the U.S. Army had been asking Congress for authority to begin producing these new rounds and it finally got the go-ahead in 1984. But Congress added a key condition: it approved production of only 925 new rounds, a limit that would effectively cut the total stockpile by some 750 warheads if all the old weapons are retired. The first batch of new 8-inch shells were deployed in Europe last year and the new 155-millimeter shells are expected to come off the production lines next year.

These battlefield nuclear weapons are intended primarily to deter attack by Warsaw Pact forces by threatening major concentrations of troops or equipment. But, notes Joseph Nye, director of Harvard University's Center for Science and International Affairs, "their actual use in time of battle raises enormous problems in terms of command and control." Representative Aspin has also pointed out that because they are on the front lines, they would be in danger of being overrun and therefore would present NATO in time of war with a classic example of "use them or lose them."

The Army is said to be considering asking Congress to lift the production ceiling, but there is little enthusiasm for such a move on Capitol Hill. There is even less enthusiasm in West Germany, where nuclear artillery shells would be stored and used. Thus the replacement of the old artillery rounds is expected to continue, but there will be fewer nuclear shells in Europe in the early 1990s.

■ A new short-range missile. NATO currently has 694 Lance missiles in Europe, which, with a range of 125 kilometers, lie outside the INF treaty. The Montebello agreement included a plan to replace these weapons, which were first deployed in the 1960s, with a more accurate, longer range missile. The plan is facing serious political difficulties, however.

The U.S. Army has been working on a successor to Lance since the late 1970s. Its prime candidate is a missile known as the Army Tactical Missile System (ATACMS, pronounced "attack-ems"), a ballistic missile that will be fired from multiple rocket launchers. But in 1985, Congress restricted the ATACMS to a conventional role by prohibiting the development of a nuclear warhead for the missile.

In testimony earlier this year, Lawrence Woodruff, Deputy under secretary of defense for strategic and theater nuclear forces, formally requested that the ban be lifted, "in view of the urgent requirement for a nuclear follow-on to the Lance." But Congress has relented only slightly. The 1988 defense bill

allows the Army to carry out paper studies of putting a nuclear warhead on the missile, but anything beyond that is still prohibited.

Even if Congress were to permit development of a successor to Lance, actually deploying the missile would be politically difficult. There is already considerable opposition in West Germany, where the missiles would be stored and used, and public outcry over deployment of a new land-based nuclear weapon would be deafening. "It has got all the political problems, but it does not do what the Pershing II and ground-launched cruise missiles were meant to do," notes James Rubin of the private Arms Control Association.

Although the Army is expected to renew its request for a nuclear ATACMS next year, one congressional aide predicts that it will not press the issue very hard. "The Army will be facing serious budget problems, and it is unlikely to use its political capital on that one," he says.

■ New air-launched missiles. Withdrawal of INF forces will place renewed emphasis on aircraft to deliver nuclear weapons from Europe deep into Soviet territory. Under discussion are plans to increase the number of long-range fighter-bombers, such as the F-111, stationed in Europe, but there is likely to be some dispute over where they would be based. According to a recent congressional report, Britain, for example, has argued that since it already provides a base for 150 F-111s, any additional aircraft should be stationed elsewhere.

Another concern is the improved Soviet air defenses. Aircraft, unlike the ballistic missiles to be scrapped under the INF agreement, may have a hard time penetrating Soviet airspace. This concern has given rise to the suggestion that a new nuclear-tipped air-to-surface missile, capable of striking deep behind the front lines, be developed for launch from aircraft over friendly territory. NATO's defense ministers agreed at their meeting last May that such a missile should be given further study. Such weapons are still only on the drawing board, however, and as John Deutch, provost of MIT and a longtime defense adviser points out, they would be "extremely expensive."

Another suggestion, which has been greeted with little enthusiasm, is that B-52 bombers equipped with long-range airlaunched cruise missiles be stationed in Europe.

■ Sea-launched missiles. A proposal said to have support within West Germany and among some defense analysts is to assign another ballistic missile submarine to NATO or to commit sea-launched cruise missiles aboard attack submarines or surface ships to the defense of Europe. Such deploy-



Nuclear artillery. A 1953 test of a nuclear round. NATO is currently replacing its old nuclear shells with more modern versions, but the total number will be reduced.

II DECEMBER 1987 NEWS & COMMENT 1499



The ATACMS missile. The leading candidate to replace the Lance. Congress has, however, told the Army not to put a nuclear warhead on it.

ments would be unlikely to encounter public opposition in Europe since the weapons would not be based on European territory, but they would probably have little support from the Pentagon. For one thing, assigning another strategic missile submarine to the defense of Europe would run into serious difficulties if the United States and the Soviet Union agree to major reductions in strategic nuclear forces.

According to a study by William Arkin of the Institute for Policy Studies and Robert Norris and Thomas Cochran of the Natural Resources Defense Council,* there are already some 400 ballistic missile warheads on U.S. submarines operating in the Mediterranean and about 360 nuclear bombs aboard aircraft carriers operating in European waters that would be committed to NATO during a war. Any further reliance on seabased forces "would be an admission that sea-based systems could just as easily do the job as land-based weapons, and it could therefore accelerate the process of denuclearization [of Europe] by admitting that nuclear weapons don't necessarily have to be on European soil in order to deter potential aggression," they point out.

Because of the political difficulties involved in implementing any of these programs, NATO is unlikely to reach consensus on a modernization effort in the near future. In the meantime, Arkin, Norris, and Cochran suggest that the removal of INF warheads coupled with further withdrawals of old weapons could by 1992 reduce NATO's nuclear arsenal to about 3250 warheads, consisting of 950 artillery shells, 700 shortrange Lance missile warheads, 1400 nuclear bombs, and 200 antisubmarine depth

Many observers believe that decisions over nuclear modernization in Europe should await developments in new conventional arms reduction negotiations that are due to begin next year. "My supposition is that we are not going to be ready to handle that issue [modernization] until we have got a better fix on conventional force reductions," says John Steinbruner, head of foreign policy studies at the Brookings Institu-

Because European nuclear weapons are intended primarily to deter a conventional attack by the Warsaw Pact, any movement toward conventional arms reductions "would be a disincentive for moving quickly on new nuclear systems," says Stanley Sloan, a specialist in U.S.-Alliance relations at the Library of Congress. But if the talks deadlock, "the case for modernization may start to build," he says.

The new conventional arms control talks, the format for which is still being worked out, will replace the Mutual and Balanced Force Reduction negotiations that have

been sputtering along without much real

progress since 1973. They will include representatives from all the Warsaw Pact and NATO countries and may also include France, which is not part of NATO's military structure. Although nobody expects rapid advances, many believe that the climate is probably more conducive to conventional arms control now than at any time in recent years.

A report† by the Congressional Research Service, published last week, notes, for example, that budget constraints and impending manpower shortages provide a strong incentive for both sides to control conventional armaments. But the report also makes clear that there are major points of disagreement, and concludes that "the prospects for an early reduction accord remain somewhat bleak, even in the heady air of a new negotiating forum."

One potential obstacle is that because the Warsaw Pact forces are perceived to hold numerical advantages in both troops and armaments, the Western allies will seek much deeper cuts in the opposing forces than in their own. There is, however, a promising indication that the Warsaw Pact is at least willing to consider an asymmetric agreement. At a meeting in late May, the leaders of the Warsaw Pact stated that they "express their readiness to rectify in the course of reductions the imbalance that has emerged in some elements by way of corresponding cuts in the side that is ahead."

This statement, however, was accompanied by a suggestion that cuts in conventional forces "would be carried out simultaneously and together with [reductions in] tactical nuclear systems." If the Soviets put forward a serious proposal to trade deep cuts in Warsaw Pact forces for major reductions in NATO's battlefield nuclear weapons, it could cause political problems within the alliance. Such a proposal is likely to strike a chord in West Germany, but leaders in Britain and France have already stated categorically that they will not consider further nuclear arms control measures in Europe.

Defense experts in the United States are divided on the merits of such a trade-off. For example, Joseph Nye of Harvard has advocated some reduction in NATO battlefield weapons in return for cuts in Warsaw Pact forces, but he acknowledges that such a proposal is "a political nonstarter." On the other hand, James Woolsey, former under secretary of the Navy, says he would be strongly opposed to such a trade. "There should be major reductions in Soviet conventional forces in Eastern Europe," he says, "but we shouldn't pay for that in the coin of denuclearization of Europe."

COLIN NORMAN

SCIENCE, VOL. 238

1500

*"Implications of the INF Treaty," Nuclear Weapons Databook working paper 87–3, 1 December 1987. Available from the Natural Resources Defense Council, Washington, DC.

charges.

t"Conventional arms control and military stability in Europe," Congressional Research Service, Library of Congress, Washington, DC. Document 87-831 F.