Missile Deployments Shake European Politics

The Soviet SS20 and the American Pershing II and cruise missiles have disgruntled the Europeans and awakened their independence

The residents of the Swabian-Franconian Basin, a region of vineyards and light industry in the south central portion of West Germany, were until recently unruffled by the presence of nearby U.S. nuclear missiles. Dozens of Pershing I's, or medium-range ballistic nuclear missiles, have been stationed since the mid-1960's in the towns of Schwäbisch Gmünd, Neu-Ulm, and Neckars Ulm, and local citizens had become accustomed to seeing them trundled through nearby hills and forests in U.S. Army convoys. Accepting the official policy in Washington and Bonn, the citizens believed that the Pershings were needed to deter an attack from the forces of the Warsaw Pact, a scant 100 miles away.

This complacency has evaporated, however, in the wake of the North Atlantic Treaty Organization's (NATO) decision to replace the Pershing I's with newer, more sophisticated Pershing II's. Reflecting a commonplace European concern, many of the basin's residents fear that the new missiles will endanger their safety instead of ensure it. Thousands have demonstrated in Schwäbisch Gmünd, and protesters have settled in tents outside the field artillery base where nine Pershing II's have already been deployed. Last October, the missile base at Neu-Ulm was the starting point for a 64-mile human chain that ended at U.S. Army headquarters in Stuttgart, a protest intended to dramatize the Germans' fear of the Pershing II, and their anxiety about its use by the United States in an attack on the Soviet Union.

A growing number of West Europeans are disheartened by the close proximity of U.S. nuclear weapons. Many feel that the United States, not the Soviet Union, poses the greater threat to world peace, even though the Soviets have substantially improved the quality and increased the number of their own nuclear weapons. As a result, West Europeans are considerably less interested in following a U.S. lead within NATO. This newfound spirit of independence is particularly pronounced among highly educated European youth, some of whom even favor a withdrawal from NATO.

These developments spell trouble not only for conservative European governments but also for the Reagan Administration. No longer can NATO committees set nuclear policy—such as that calling for the introduction of 572 Pershing II and cruise missiles into Western Europe—and then expect the public's swift approval. No longer may the United States hope to modernize its forces in Europe without a painful and prolonged political battle. The Soviets, too, may come under increasing pressures, as a substantial portion of the public is opposed to all nuclear weapons targeted on European soil. As Christoph Bertram, a former director of the London-based International Institute for Strategic Studies, recently wrote, security policy is now "an issue of the people," and European politics may never be the same.

Soviet fear of the Pershing II is "not unreasonable," says Paul Nitze.

The Soviet Union first brought this issue to the fore with its deployment in 1977 of the SS20, a missile with three warheads that can reach targets in Europe, Africa, or Asia. Due to a concerted Soviet public relations effort, however, the Europeans eventually came to worry more about the deployment in Germany of 108 Pershing II missiles, added at U.S. insistence to a nuclear modernization program ordered by NATO in 1979 (*Science*, 27 January, p. 371). David Aaron, who then served on the National Security Council, remembers that "the Pershing II was sort of an afterthought" in NATO planning and that the political implicatons of its deployment were not foreseen.

Most of the controversy stems from the Pershing II's ability to hit targets in the Soviet Union both swiftly and accurately—a capability lacked by all previous NATO nuclear weapons. Sophisticated microelectronics and a new radar guidance mechanism enable the missile to survey the target area during its descent, compare the result with a map stored in its memory, and then maneuver with nitrogen gas thrusters and hydraulically controlled air vanes to ensure a direct hit, all in less than 15 minutes. Annual reports of the U.S. Arms Control and Disarmament Agency (ACDA) say that the Pershing II is capable of destroying such targets as intercontinental and European theater nuclear missile sites, command and control headquarters, naval bases, nuclear and chemical storage sites, munitions and petroleum storage areas and transfer facilities, ground force installations, airfields, choke points, troop concentrations, and bridges.

The Soviets complain, and the Europeans widely believe, that the Pershing II is intended primarily as a first-strike weapon by the United States, a weapon capable of swiftly and seriously limiting Soviet capacity for nuclear retaliation. They point to evidence such as a statement, in the 1981 ACDA report, that "long-range theater nuclear forces [such as the Pershing II] . . . complement U.S. strategic forces, which are targeted against both Soviet and non-Soviet Warsaw Pact countries" or to the Pentagon's 1984 Defense Guidance, which bluntly orders that war planning for theater-nuclear weapons "be fully coordinated with that of the strategic nuclear forces." Significantly, the Soviets believe, or at least claim to believe, that the Pershing II is capable of reaching key military and political targets in the vicinity of Moscow, 2500 kilometers away.

Current and former NATO officials insist that this is nonsense. "You can't disarm the Soviet system; there's just not enough Pershings, and they don't have the range," says David Aaron. The missile was constructed, he says, to fly no further than 1800 kilometers, a distance far short of Moscow. "There are obviously some command and control sites that are within range, but the Soviet Union hasn't put all of its eggs in one place. It's a highly redundant, dispersed system."

A high-ranking general in the German defense ministry agrees. "There is no doubt that this capability for precision could be used for very severe limited strikes and that it could pick out certain targets, and indeed, nobody could deny that west of Moscow there are command and control targets which could be hit by it. I couldn't rule that out," the general said. But, he adds, "it wouldn't make

The Pershing II, a highly accurate, mobile missile, can reach key Soviet targets from German soil in about 15 minutes. If necessary, it can be equipped with an earth penetrator warhead capable of destroying hard underground targets.

the Soviet Union defenseless, and the United States in calculating a strike like this must expect the Soviet Union to react on U.S. territory even if that were in a limited way." Roger Molander, a National Security Council staff member under Presidents Nixon, Ford, and Carter, who went on to help form an anti-nuclear group known as Ground Zero, also says that an attack by the Pershing could not bar a Soviet response. "It would be like committing suicide," he says. "This argument [that the Pershing II is a first-strike weapon] is horse-manure. It insults the experts and seriously discredits anyone who believes it."

Several weapons experts concede, however, that the Soviet view is hardly illogical, even if wrong. John Steinbruner, who directs the Foreign Policy Studies Program at the Brookings Institution, says, for example, that "whatever the actual facts about the Pershing's range, the Soviet opinion is technically plausible, given the size of the basic missile." Paul Nitze, who for the past 2 years has been the chief U.S. negotiator at the theater nuclear arms talks, also says that from an engineering standpoint alone, the Soviets could easily conclude that the Pershing's range is greater than 1800 kilometers, although "certainly not 2600 kilometers." Given the missile's extreme accuracy, he told *Science*, "the Soviets simply don't believe that anyone could have exercised such restraint. They fear that it could endanger the survivability of the Politburo, which is not an unreasonable fear, given how paranoid and suspicious they are."

Steinbruner adds that even though the Pershings are few in number, the Soviets have to take into consideration the added, although probably less severe, damage that could be wrought by U.S. cruise and submarine-launched missiles in a massive attack. The ground-launched cruise missile, although slow, is extremely difficult, if not impossible, to detect at launch, so the Soviets still might have only brief warning before its detonation. "To be oblivious to the way the Soviets might read these weapons is an incredibly serious failure. It's just naïve," he says.

Having listened to Soviet complaints about the Pershing II for 3 years, many Europeans are convinced that its deployment will attract, not deter, Soviet fire. This danger has been pointed up by Soviet promises to move the SS22, an existing short-range nuclear weapon, into East Germany and Czechoslovakia, where it is capable of preemptively destroying Pershing and cruise missile deployment sites in Britain, Germany, Belgium, and the Netherlands. Other Soviet missiles, such as the SS5, the SS11, the SS19, and the SS20 are already capable of hitting these targets.

Even a small risk of nuclear war worries many because the damage in Europe from even a few small nuclear bombs would be devastating, due to high population density. A report last summer produced for the World Health Organization by a consortium of scientists from ten nations concluded, for example, that 9 million people would probably be killed outright by the detonation of only 20 megatons on central European military targets—an amount equal to between 50 and 100 SS20 and SS22 warheads; another 9 million would be injured; and civilian casualties would outnumber those of the military by a ratio of 16 to 1.

It is thus unsurprising that the public is enraged and alarmed by any sign that a superpower conflict could be played out on European territory. Many citizens remember President Reagan's 1981 comment that he could see "where you could have the exchange of tactical weapons against troops in the field without it bringing either one of the major powers to pushing the button." Similar alarming American rhetoric about the inevitability of a superpower conflict, which the United States could win, has had a far greater impact overseas than in the United States. Polls show that only half of the Germans now have confidence in U.S. ability to handle world problems, as do only 4 percent of the British. Although Margaret Thatcher opposes it, four-fifths of the British want their government to retain veto power over use of the new nuclear weapons.

"I wish some political orators in the West would grasp how very much their ignorant, warlike speeches have contributed to this fear, to this mistaken sense of powerlessness, and to this anger," former West German Chancellor Helmut Schmidt told a Social Democratic Party Congress last November.

The Europeans' increasingly equivocal view of international affairs stems not only from the public outcry against the missile deployments but also from a belief that the deployment could have been averted if the United States had tried harder to negotiate an arms control agreement. Opposition parties such as the Social Democrats in Germany, the Labour Party in Britain, and the Labour Party in Norway all supported a Soviet proposal to deploy only as many long-range missiles as Britain and France combined, a proposal that was bitterly opposed by the United States. And they sharply attacked both Thatcher and Helmut Kohl, the German chancellor, for failing to apply more pressure on the Americans. "You confound friendship with doing somebody favors, and cooperative integration into an alliance with the allegiance of a vassal," Social Democratic leader Hans Jochen-Vogel told Kohl during a Bundestag debate on the deployment last November.

Thus far, most German critics of the Pershing II have been careful to note that they still support membership in NATO. "We are against new missiles, but we do not say no to NATO, we say yes to NATO and we want it reformed wherever it needs to be reformed," says Willy Brandt, the former chancellor. "We say yes to our friendship with America and this friendship is not linked to whichever Administration is governing." But polls suggest a generation gap on this issue, with 30 percent of those aged 18 to 34 years favoring a withdrawal from NATO, as opposed to 15 percent of those aged 35 and older.

Several observers have noted similarities between the Social Democrats' current campaign against the deployment of the Pershing and the cruise, and a previous campaign, known as the Kampf dem Atomtod, mounted against the stationing of American nuclear weapons on German soil in the 1950's. As in the most recent campaign, enormous public opposition was manifested by massive public demonstrations. But once the nuclear deployments had actually begun, the public came to accept the situation as a

fait accompli, and opposition quickly dwindled to a small proportion of the population. A similar fate is forecast for today's protesters by Hans Rühle, one of Helmut Kohl's top advisers in the Ministry of Defense. "There is nothing as successful as success and nothing as disappointing as not having success," he says simply. "I think [that by] mid-1984, the peace movement will be down to 5 percent."

Leaders of Die Grünen, or Greens, which led the protest, disagree. "The mood is one of resignation," concedes Sabine Bard, one of the Green's 28 parliamentary delegates. "We are just now working on our long-term strategy." But already demonstrations are planned for 22 April, Easter Sunday, and a European-wide peace referendum is being organized for 17 June. Activists point out that European deployments of the Pershing and the cruise will not be completed until 1986, and that each new shipment will provide a fresh opportunity for public protest.

In Denmark, the parliament recently voted to disassociate itself from the missile deployments. There is also little support in Greece, and substantial opposition in Belgium. In Norway, NATO funding was approved by a single vote in November 1982. In the Netherlands, the government of Rudolphus Lubbers has forecast unofficially that parliament will reject the deployment in June, unless the United States offers concessions so that the negotiations in Geneva can resume. Additional pressure for concessions has come even from the government of Helmut Kohl. As Hans-Dietrich Genscher, Germany's foreign minister, recently noted, "the Soviet Union has been engaged in a reassessment of the international situation, and . . . a review of its policy, since November. In such a situation, the West must not simply stare like a rabbit stares at the snake—its duty is to influence the process constructively."

There is a temptation in the United States to dismiss these complaints as arrogant, insincere or temporary, and to simply write them off. Under Secretary of State Lawrence Eagleburger, for example, recently chastised the Europeans for being "consumed by their own problems" and unwilling to look outside their own borders. As a result, he said, "the center of gravity of American foreign policy [is shifting] from the transatlantic relationship toward the Pacific Basin and particularly Japan," where anti-American protests have lately been infrequent. But Europe *has* been looking outside its own borders, and lately it is not attracted by what it sees in the West. The United States ignores at the peril of the Western alliance the increasing signs of European disaffection.—**R. JEFFREY SMITH**

This is the third article in a series on the European missile deployments.

Renewed Interest in Food Irradiation

FDA ponders approval as proponents push it as an alternative to pesticides

By any other name, irradiation of food would probably have been sanctioned by the federal government years ago. But because "irradiation" mistakenly conjures up visions of glowing food, food manufacturers, unsure of consumer acceptance, have not vigorously pressed for federal approval. As a result, the Food and Drug Administration (FDA) has been less than swift to authorize the use of irradiation. However, with increasing concern about the presence of ethylene dibromide residues in food, there is renewed interest in irradiation as an alternative to the fumigation of fruits and vegetables.

Although the technology has been feasible since the 1950's, it was only last year that the FDA sent a recommendation to the Department of Health and Human Services to expand the use of irradiation. But Secretary Margaret Heckler has yet to sign off on the proposed regulation and even then, FDA would have to solicit public comment on the proposal before granting final approval. In November, Representative Sid Morrison (R–Wash.), whose constituency includes apple growers, introduced legislation that would speed up FDA approval.

FDA has already permitted some applications of irradiation of food but to a very minor extent. For years, astronauts have consumed irradiated food as have individuals who suffer from immune deficiencies and must eat sterilized food. Last summer, FDA authorized the use of irradiation to clean up spices, which are often contaminated with insect parts and bacteria in their natural state.

Proponents of irradiation envision much wider use of the treatment, contending that it can offer a significantly better food product. Irradiation has been successfully used to inhibit sprouting, kill larvae in harvested fruit and vegetables, and destroy contaminants such as salmonellas in chicken and trichinae in pork. The treatment can also kill *Clostridium botulinum* and eliminate the need for nitrite in bacon. The Department of Commerce speculates that irradiation could improve the quality of domestic meat and fruit for export, which could lead to a better balance of trade. And the U.S. military, which has been a principal researcher of irradiation, has long advocated it in order to provide troops with food that tastes fresher and has a longer shelf life than canned groceries.

The United States has lagged behind international acceptance of irradiation and critics of FDA say that the agency has been unduly cautious. In 1977, a joint committee of the World Health Organization, the International Atomic Energy Agency, and the Food and Agriculture Organization reviewed a multitude of studies and concluded that irradiation is safe and effective for several foodstuffs. In 1981, the same committee issued virtually unconditional approval of irradiation when applied at medium energy levels. About 20 countries now allow irradiation for various applications, processing a total amount of 2000 tons annually. The Japanese, for example, irradiate thousands of pounds of potatoes every year to prevent sprouting. Despite the international committee's recommendations, the United States still has not adopted the committee's standard. Ironically, a senior FDA scientist was a member of the joint committee that voted unanimously for the standard.

Irradiation suffers from a terrible public image in the United States. FDA has received numerous handwritten letters by individuals who have little understanding of the process, but object to it nonetheless. Irradiation uses ionizing en-