

Anglo-French Nuclear Missile Under Study

British and French defense officials are looking into a joint project to develop a nuclear-armed air-to-surface missile; France's ultimate goal is a European-led nuclear strategy

FOR the past year, British and French defense officials have quietly been discussing the possibility of a joint effort to develop a new nuclear-tipped missile that would be fired from aircraft at targets up to 500 kilometers away. If the project were to go ahead, it would break new political and technological ground, for the two countries have never before cooperated on the development of a nuclear weapon.

The project first came to public attention last December, when British Defense Minister George Younger and his French counterpart André Giraud announced the setting up of a joint working party to study a potential cooperative venture. So far, however, the project remains in the discussion stage and it conspicuously failed to win a top-level political endorsement last month when Prime Minister Margaret Thatcher and President François Mitterrand met for talks in London.

Mitterrand is widely reported to have sought approval for the project, but Thatcher is apparently moving cautiously out of concern that European cooperation on nuclear weapons development might loosen the nuclear bonds with the United States and in turn weaken the U.S. commitment to defend Western Europe. At a press conference following her talks with Mitterrand, Thatcher would say only that cooperation on the missile "was not excluded."

In the past, Britain has rejected nuclear cooperation with France, which is not part of the military structure of the North Atlantic Treaty Organization (NATO), preferring instead bilateral cooperation with the United States. The outcome of the discussions over a possible Anglo-French missile will be heavily influenced by the attitudes of the United States toward the project.

The need for a new air-launched nuclear missile was advocated in 1983 by defense ministers of NATO as part of a program to upgrade Europe's nuclear defenses (*Science*, 11 December 1987, p. 1498). The United States is already developing an air-to-surface missile of its own, the mark 2 version of the Short-Range Attack Missile or SRAM-II,

and it has begun preliminary work on a so-called Tactical Air-to-Surface Munition, which could be developed for the late 1990s.

Britain therefore potentially has the choice of cooperating with its longtime nuclear partner in developing these missiles, buying them off the shelf when they are completed, or moving in a new direction and cooperating with France.

Britain and France are not talking about starting from scratch. The focus of the discussions so far has been on developing an upgraded version of the French Air-Sol à Moyenne Portée (ASMP) missile, produced by Aérospatiale. This is an inertially guided missile equipped with a 150-kiloton nuclear warhead. It has a range that currently varies between 100 kilometers (for low altitude, terrain-hugging trajectories) to 300 kilometers if launched from a higher altitude.

The discussions have taken on a particular significance in the wake of the agreement on intermediate nuclear forces (INF) that President Ronald Reagan and Soviet leader Mikhail Gorbachev signed in Washington in December. This will lead to the elimination of all U.S. and Soviet land-based missiles with ranges between 500 and 5000 kilometers.

Many in Europe now argue that new air-to-surface missiles, which have a shorter range than those covered by the INF treaty, are necessary to fill the gap that will be left when the INF missiles are removed. Pierre Lellouche, of the Institut Français des Relations Internationales (IFRI) in Paris, for example, argues that new air-to-surface missiles are necessary to restore the political and military legitimacy of nuclear deterrence. This will require relying on both the U.S. F-111 fighter-bomber "and on European aircraft carrying French- and British-made nuclear missiles capable of reaching deep into Warsaw Pact territory, including the Soviet Union."

The possible development of such missiles is, however, prompting some strong opposition in Britain and West Germany on the grounds that they would undermine the INF treaty and lead to a dangerous new step



Test firing. The ASMP is already deployed on some French aircraft.

in the arms race. There is also strong sentiment in Germany for negotiations to eliminate short-range nuclear weapons entirely.

The French ASMP is the result of a \$600-million program begun in the late 1970s. It is a cruise-type missile that acts as the airborne leg of France's nuclear triad. It first entered into service in May 1986 and is now deployed on 18 Mirage-IVP nuclear bombers belonging to France's Strategic Air Force. It will eventually also be used with Mirage-2000 jets belonging to the Tactical Air Force and the French Navy's Super-Etendard bomber.

From a technical point of view, the most innovative aspect of the ASMP—apart from its miniaturized warhead—is its propulsion technology. The missile is accelerated to supersonic speed by a solid-fuel rocket booster, but once it has reached that speed, it is maintained in flight by a kerosene-powered airbreathing ramjet engine. This is claimed in France to be a unique technology whose details even the United States has asked to share.

Britain's interest in the ASMP stems from the fact that it is currently looking for a successor to the WE177 gravity bombs that have equipped its Tornado strike aircraft for the past 20 years. Thatcher has admitted that the increased accuracy of Soviet anti-aircraft missiles has greatly increased the Tornados' vulnerability, and thus reduced their ability to deliver the bombs on enemy soil. The "stand-off" capability of the ASMP would remove this vulnerability.

Britain's Royal Air Force (RAF) would like a missile with a longer range than the ASMP. Although France has no immediate interest in upgrading the missile, it accepts that it will eventually need to do this, and is therefore keen to share the research and

development costs that would be involved.

The RAF is, however, reported to be expressing considerable doubts about whether the ASMP's range could be increased sufficiently to reach up to 500 kilometers—a modification that is expected to require significant changes in its aerodynamic configuration. British officials are also said to have raised doubts about two other aspects of the ASMP's performance: whether the missile is sufficiently accurate, and whether it is sufficiently "furtive" in both its high trajectory and its ground-hugging flight mode to remain sufficiently hidden from enemy radar.

The French have tried to be reassuring on all three aspects. Aerospatiale spokesman Jean-Claude Salvinien said last week that the company felt there were "no insoluble problems" in meeting the requirements being laid down by the RAF, echoing similar statements made earlier by Defense Minister Giraud.

Discussions on the technical specifications are likely to be long and hard. But the prospects for the project are likely to rest more on political and strategic factors than on technological ones.

Britain is facing a key choice. Should it let its future nuclear strategy depend, as it has up to now, almost entirely on cooperation with the United States? Or should it heed the siren call of France to collaborate on a more European-led nuclear strategy, perhaps even leading to the creation of what Lellouche of the IFRI calls a European Nuclear Planning Group, working alongside—but independently from—NATO.

French officials argue that the case for moving in this direction, which they have long favored as an alternative to what they consider to be excessive U.S. dominance of the NATO alliance, has been strengthened by the gaps left by the withdrawal of medium-range missiles.

Joint collaboration over the ASMP could, in French eyes, act as a precedent-setting way of drawing Britain, the only other nuclear power in Europe (West Germany is precluded by treaty from possessing such weapons), into a European nuclear alliance. France has already made nuclear cooperation with the United Kingdom a top political priority and suggested that talks be held on joint targeting of nuclear weapons.

In the past, Britain has proved reluctant to join with its neighbor on nuclear weapons programs. The most conspicuous example came in the late 1970s, when there was considerable talk about Anglo-French cooperation on a new generation of submarine-launched ballistic missiles. Britain was then looking for a successor to the U.S.-built Polaris and France was keen to find some-

one to share the development costs of its new sea-launched missile. In the event, Britain decided to replace its Polaris missiles with the Trident II, and France went its own way to develop the M4 missile.

This time, two factors weigh more heavily in favor of a U.K.-French nuclear accord than they did a decade ago. The first is the frequently expressed desire by U.S. politicians, spurred by a combination of political considerations and budget constraints, that Europe should contribute more toward its own defense. The second appears to be a growing acknowledgment in Washington that France's own nuclear doctrine is now similar to NATO's, so there is less danger of a divergence between U.S. nuclear thinking and that which might be enshrined in any purely European agreement.

François Hesbourg, the French director of the International Institute for Strategic Studies in London, says he has heard "no adverse comments in Washington at all" about the possibility of Britain and France getting together on a joint nuclear project.

Others, however, suggest that the existing links between the United States and Britain's military research establishments are so strong that an Anglo-French deal over the ASMP is unlikely. "The British have already said that they are serious in talking to the French," says Yves Boyer of the IFRI. "Maybe they are just doing it as a negotiating tactic with the Americans."

There is also the potential legal hurdle of the U.S. Atomic Energy Act of 1946, which forbids the exchange of nuclear information with other states. British Prime Minister Harold Macmillan obtained an exemption from this for the United Kingdom in 1958, but it is still precluded from sharing with a third country information obtained through R&D cooperation with the United States.

Some suggest that the United States, given its own interest in air-launched nuclear

missiles, might even join a three-way development project with Britain and France. "It is a titillating question to ask whether the U.S. could be drawn into this project—and perhaps even offering France the same exemption as Britain to the Atomic Energy Act," says Hesbourg.

Within Europe, however, the joint Anglo-French development of a new nuclear missile would be guaranteed to run into some heavy political opposition. Antinuclear groups, such as Britain's Campaign for Nuclear Disarmament (CND), are already preparing demonstrations against NATO's modernization programs. Air-launched nuclear missiles will be one of the main targets of these protests. "The large-scale deployment of accurate, lightweight nuclear missiles on fighter aircraft represents a major qualitative change in the arms race, and the gravest danger of the Anglo-French project, if it ever comes to fruition, would be in solidifying support for this development," says CND executive member Daniel Plesch of the British-American Security Information Council in London. Members of Britain's Labour Party have also stated their opposition to an Anglo-French nuclear deal.

In France, the traditional consensus among all political parties on the need to maintain a credible nuclear deterrent has only been reinforced by the INF treaty. The main concern in Paris is that a European nuclear strategy, even one involving Britain, would be opposed by West Germany, which has already said it wants an early start to talks on eliminating short-range nuclear missiles.

The Soviet Union has also been making disapproving noises, which have been sympathetically received in West Germany, about any moves to develop air-launched nuclear missiles. Soviet Foreign Minister Eduard A. Shevardnadze said in a recent visit to Bonn that upgrading NATO's tactical nuclear weapons would "scuttle everything that has been achieved in the sphere of nuclear disarmament."

For Britain, a central consideration is the possibility that over the long term the United States may reduce its commitment to European defense, if only for reasons of budgetary constraint. This would make nuclear collaboration with France much more attractive than in the past.

"If it turns out to be the case that people in the U.K. and France feel that the United States is disengaging from Europe, and that the U.S. nuclear umbrella is therefore becoming less reassuring, that could do wonders for the cooperative spirit," says one official with NATO's parliamentary body, the North Atlantic Assembly in Brussels. ■

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François Hesbourg. Heard "no adverse comments in Washington" about the project.