

Introduction

On November 9, 1984, the North Atlantic Treaty Organization's (NATO's) Defence Planning Committee formally approved the Long Term Planning Guideline for Follow-On Forces Attack (FOFA) that had been developed on the initiative of NATO's Supreme Allied Commander Europe, General Bernard W. Rogers. Adoption of this mission concept, a major objective of General Rogers, was strongly supported by the United States. This approval set in motion an 18-month review during which NATO is analyzing how to implement this new element of its strategy for deterring a Warsaw Pact attack. This process has included, among other steps, the inclusion of follow-on forces attack in the NATO Military Committee's May 1985 Conceptual Military Framework for NATO Defence Long-Term Planning. NATO's ultimate decision will depend heavily on views that the United States and the other members of the alliance are now formulating.

Although FOFA does not represent a change in NATO's overall defensive strategy of "Flexible Response"—which will continue to rely on a balanced "triad" of conventional, theater nuclear, and strategic nuclear forces to deter a Warsaw Pact attack—it is one key element in NATO's effort to improve its conventional forces through the application of new technology. (NATO has already taken steps to strengthen the other legs of the triad, for example by deploying the nuclear-armed Pershing II and ground-launched cruise missiles in Europe, and modernizing U.S. strategic nuclear forces.)

The need to strengthen NATO's conventional leg is underscored by General Rogers's warning that:

... if war broke out today, it would only be a matter of days before I would have to turn to our political authorities and request the initial release of nuclear weapons.¹

The objective of FOFA—and of other efforts to reprove NATO's conventional capability—is to

restore the flexibility to Flexible Response by assuring that NATO will be able to make a measured response to an attack by the numerically superior Warsaw Pact conventional forces, and in particular that it will retain control of the decision to escalate to nuclear weapons—that it will not be forced into an early all or nothing decision.

At the heart of the follow-on forces attack concept is the assumption that NATO's conventional forward defenses will be able to withstand an initial attack by Warsaw Pact armies in the critical Central Region—where the Federal Republic of Germany is bordered by East Germany and Czechoslovakia and where the mass of Warsaw Pact ground forces are concentrated—but that they are likely to be overwhelmed by a rapid succession of reinforcing echelons (the "follow-on forces") arriving at the battle area to exploit weaknesses created by the initial attack. General Rogers explains that the goal of follow-on forces attack is to "reduce to manageable proportions the number of Warsaw Pact forces arriving at our General Defensive Position" by attacking—with conventional weapons—"those enemy forces which stretch from just behind the troops in contact to as far into the enemy's rear as our target acquisition and conventional weapons systems will permit."²

Preventing enemy reinforcements from reaching the front is not, of course, an idea new to NATO's conventional defense plans. NATO's air forces have always had the mission of "interdiction"—striking targets behind enemy lines, including follow-on forces—and even army artillery has had the capability to fire beyond the close-in battle. But what NATO has lacked until recently is the technology (or the right combinations of technologies) to find mobile targets at a distance and to hit them effectively.³ As a result,

¹*ibid.*

³As the Air Force learned in World War II, Korea, and Vietnam, interdiction campaigns making use only of "traditional" means to locate and attack targets (reconnaissance flights and free-fall bombs) have had only limited success at best. See for example Edmund Dews and Felix Kozaczka, "Air Interdiction: Lessons From Past Campaigns," RAND paper N-1 743-PA&E, September 1981.

¹General Bernard W. Rogers, "Follow-On Forces Attack: Myths and Realities," *NATO Review*, No. 6, December 1984, pp. 1-9.

aircraft and other weapons systems have tended to be assigned to other missions that are likely to have a higher payoff.

Recent developments in sensors and weapons systems (loosely referred to as "smart weapons," or more generally "emerging technologies") have

dovetailed with new thinking about how to exploit the vulnerabilities in Warsaw Pact ground forces operations—specifically, the rigid timing required to move up the follow-on forces and commit them to battle—to produce the follow-on forces attack concept.

ISSUES BEFORE NATO

Having adopted this concept, NATO now faces the question of making it work. In the process, NATO will have to come to grips with some difficult questions, such as:

1. Which concepts for follow-on forces attack should be pursued, and how should resources be allocated among them?
2. How much capability is needed?
3. Are dedicated forces required, and if so, what?
4. How are competing demands for procuring

- forces for follow-on forces attack, the close battle, and the air battle to be balanced?
5. What is to be bought? Who will produce it? Who will pay for it?
6. Will the NATO command structure and its operating procedures have to be modified?
7. Will attacking follow-on forces require changes in national intelligence policies and procedures?
8. What are the implications of possible Warsaw Pact responses to FOFA?

ISSUES BEFORE CONGRESS

Congress will be concerned with defining and funding the U.S. effort, including forces that would be assigned to NATO in wartime and the U.S. share of NATO infrastructure funding. However, FOFA is an alliance effort and the views and actions of our Allies will have to be taken into account,

Both the Army and the Air Force will be developing and procuring systems to locate targets and direct weapons against those targets, as well as the munitions and the means to deliver them. Congress will likely be faced with decisions on which of the many programs with potential applications to FOFA should be funded, and in particular whether actual procurement should proceed with technology now in hand or be deferred until further progress is made.

Several major considerations will complicate these decisions. First, **follow-on forces attack cannot be viewed in isolation**; rather, its value can only be judged in the context of NATO's overall ability to maintain deterrence and, if

deterrence fails, to carry out a successful defense. Other missions—most obviously forward defense against a Warsaw Pact attack—will always play a key role in NATO's conventional defense planning.⁴ Thus the value of having new capabilities to attack follow-on forces must be weighed against the value of spending that same money on NATO's other missions. Some of these missions, such as achieving air superiority (including suppression of enemy air defenses), may affect NATO's ability to attack follow-on forces,

Second, the implementation of the follow-on forces attack concept requires the procurement and integration of a number of systems. Congress is not faced with the relatively simple deci-

⁴The NATO Military Committee's Conceptual Military Framework for NATO Defence Long-Term Planning "... defines the critical warfighting mission components for alliance forces in the year ahead, including preventing a breakthrough by lead echelons of an attacking force, attacking follow-on forces, establishing and maintaining control of the sea and air, projecting maritime power and protecting allied shipping and safeguarding rear areas." Ambassador David Abshire, "NATO on the Move," *The Alliance Papers* No. 6, September 1985.

sion of whether a particular system will contribute to national security, or even with the decision of which to fund among several competitors for a particular job. Congress is faced with the complex problem of reviewing administration programs for a consistent mix of systems that will provide a viable capability to attack follow-on forces.

Third, **those decisions cannot be made solely within the context of FOFA.** Many of the systems will have other roles, both within Europe and elsewhere, that will have to be taken into account.

Fourth, **although cost will be a very important factor, it is not yet possible to determine how much a credible and effective FOFA capability will cost.** The costs of individual systems can be estimated with reasonable confidence, but estimating the potential cost of FOFA will have to await a determination of which systems are needed, and how many of each will be required. A recent report by a private study group concluded that "... the costs of the new programs are modest in relation to the overall current NATO defense budgets."⁵ If their cost estimates

⁵*'Strengthening Conventional Deterrence in Europe (ESECS II), The European Security Study Report of the Special Panel (Boulder, CO: Westview Press, 1985).*

are largely correct, and new developments perform as advertised, financing FOFA might significantly enhance NATO's defensive capability when compared to other uses of the same funds. While these results raise intriguing possibilities, estimates of cost, effectiveness, and technical risk will require close scrutiny. Critics are very skeptical of such estimates, and believe that costs could be very high.

Finally, decisions made by Congress **will have to take into account how the U.S. implementation of FOFA will be received by the other members of NATO.** FOFA is unlikely to be successful if it becomes a United States-only effort. The military approaches taken by each nation will have to be compatible; they will also have to be politically acceptable if the cohesion of the alliance is not to suffer. Continuing European concerns over the economic implications of defense programs and, more particularly, the need for a "two-way street" in arms sales between the United States and Europe, will be major issues.

THE OTA STUDY

As a result of congressional interest in the issues that this NATO decision raises for the United States, the Office of Technology Assessment was asked in July 1985 to conduct a study of follow-on forces attack. The initial findings of that study are presented in this special report. The study was requested by the House Foreign Affairs and Armed Services Committees, and has the interest and support of the Senate Armed Services committee. This report discusses what the follow-on forces attack concept is and how it fits into NATO's strategy, and it introduces and explains advances in technology that may be important "or implementing the concept. Subsequent reports will expand this work in both breadth and depth.

In its assessment, OTA has been asked by the requesting committees to:

1. survey the status of various deep interdiction capabilities and programs, including a description of programs to develop and deploy advanced conventional munitions;
2. discuss the military and deterrence rationale for having a deep interdiction capability, and assess the strengths and weaknesses of various existing and proposed alternatives;
3. review the attitudes of our NATO allies on these matters and review relevant Soviet doctrines and plans; and
4. assess the likelihood that plausible combinations of these alternatives would meet U.S.

and NATO objectives; discuss a range of reasonable policy options; discuss their pros, cons, and likely timing of availability.

The first item is the subject of this special report. A full assessment, covering all of these topics, will be delivered in February 1987.

Both this document and the final report take the adoption of the follow-on forces attack con-

cept by NATO as a given; the purpose here is not to question the wisdom of that decision, but rather to explore options for implementing that decision and their implications. In addition, the use of chemical or nuclear weapons to attack Soviet follow-on forces is specifically excluded from consideration.

TOPICS FOR THIS SPECIAL REPORT

This report provides an overview of the U.S. technological developments of interest for FOFA. While it does not rate or rank these developments, it does describe what they are and how they might contribute to implementing FOFA. It also provides background on the role of FOFA in NATO strategy, the threat it responds to, and operational concepts for FOFA. The appendix provides a more detailed discussion of delivery systems and munitions.

Most of the details supporting this report—especially discussions of the threat, operational

concepts, and surveillance systems—are classified. Those readers holding the proper clearances are referred to OTA's much longer secret report.

The discussion of Soviet doctrine presented in this report reflects the generally accepted NATO view on the subject. Other views—for example that the Soviets would plan to employ nuclear weapons from the very start of an offensive, or that Soviet conventional strategy is moving away from a strict echelonment of forces and toward greater operational flexibility—will be explored and analyzed in the final report.

TOPICS FOR THE FINAL REPORT

Analysis of the plausible options for implementing follow-on forces attack will be deferred to the final report, as will discussion of several key issues underlying that question:

The **advantages and disadvantages of different technical approaches** is a complicated question whose answer depends not only on technical feasibility (whether the technology will actually work) but also on the final system's reliability (whether it will continue to work under battlefield conditions and in the face of countermeasures), flexibility (whether it can be used against different targets or under different conditions from those it was designed for), effectiveness in achieving military goals in battle, and cost.

How new technologies with distinctly new capabilities would be incorporated into the NATO **military structure** is a separate issue, likewise

complex. An important question, for example, is whether it would be necessary for all NATO corps to acquire a capability for attacking follow-on forces; another is the question of how their use would be coordinated between corps and between ground forces and air forces.

A more thorough analysis of Soviet operation: and **likely Soviet responses** to NATO's adoption of follow-on forces attack is necessary to reach a conclusion about plausible options for NATO. Where in the battlefield to concentrate follow-on forces attack and against which targets is clearly a fundamental issue that depends in large measure on Soviet offensive strategy. And by anticipating possible Soviet responses, it should be possible to identify the more robust options.

Finally, the **attitudes of the NATO allies** will determine the political feasibility of options for im

plementing follow-on forces attack. The European members of NATO have historically been uneasy about moves that appear to decouple the ultimate threat of nuclear escalation from the defense of Western Europe. Although General Rogers has been careful to frame follow-on forces attack in terms of “raising the nuclear threshold” and increasing the credibility of NATO’s ability to escalate to nuclear weapons—rather than replacing the need for nuclear weapons—European concerns remain. Conversely, political sensitivities have always required NATO to forswear a declaratory strategy that could be seen as “offen-

sive”; for this reason NATO’s military plans noticeably omit counterattacks that involve ground forces crossing into Warsaw Pact territory. Follow-on forces attack, by extending the reach of ground forces across borders, may well aggravate these sensitivities. And on the economic front, the European nations, already sensitive about what they see as a “one-way street” in arms sales, are concerned about the implications of a military strategy that relies even more on the advanced technology in which the United States possesses a lead.