some evidence of carcinogenicity has been found for about 400 chemicals, with about 30 to 35 (including asbestos, drugs such as DES, and chemicals in tobacco smoke) established as carcinogenic in humans. Actually, the number of carcinogens may be much larger than these figures suggest, for there are more than 30,000 chemicals already used commercially, with an additional 700 new ones being introduced every year.

Moreover, a thoroughgoing evaluation of those regulatory actions that have been taken will show that some of them have been quite limited or patchy in reducing exposure. For instance, while the manufacture and sale of polychlorinated biphenyls (PCB's) have now been banned, there is no comprehensive national program under way to recover the 750 million pounds currently in use.

Preparation of the annual report promises to be a big, if not daunting, job. The NTP executive committee has not yet decided how the various parts of the job should be distributed among the HEW agencies. But the task of making up the

Congress Seeks New Approach to Arms Control

A congressional report has recommended that the Arms Control and Disarmament Agency (ACDA) pay more attention to the problems posed by "aggregates" of developments in research and technology and to the dynamic, as well as the static, bean-counting aspects of the U.S.-Soviet arms race.

ACDA could make a more provocative contribution to future arms policy debates if it grouped certain R & D items and weapons programs together in evaluating their potential to upset the U.S.-Soviet balance, says the report. It assesses the agency's compliance with a 1975 law requiring that it submit annual arms control impact statements on weapons systems. The report was prepared by the Congressional Research Service for the subcommittee on international security and scientific affairs of the House International Relations Committee, headed by Representative Clement J. Zablocki (D-Wis.). The report also praised the impact statements ACDA submitted on fiscal 1979 weapons programs, contrasting them favorably with previous submissions by the Nixon and Ford Administrations.

Principally, the report offered its own provocative examples of aggregations of little-noted developments that could be destabilizing. These include developments in ballistic missile defense research, strategic air defense, and the growing accuracy of intercontinental ballistic missiles, each of which could adversely affect arms control. The idea was to show the arms control agency how such aggregate analyses might be done in complying with future requirements for impact statements.

But the most novel chapter in the report was a rare public look at the destabilizing impact of the United States' growing ability to detect Soviet submarines by antisubmarine warfare (ASW) methods.

The inability of either side to find, track, and simultaneously destroy the other side's force of ballistic missile-armed submarines, or SSBN's, has been a major contributor to stability. The report says the U.S. SSBN force remains secure because "today and in the near future the Soviets apparently have no effective capability for open ocean ASW."

But the Soviets can no longer be certain that the United States does not have the capability to find Soviet SSBN's. The $5 billion annual U.S. research effort in ASW computer technology, in improving sensors, and in signal processing could be "perceived" by the Soviets as giving the United States the ability to detect strategic submarines in the closed water areas and choke points where they must operate—near Greenland and Iceland for example. Several separate developments could add to this perception: the placement of the advanced Proteus data processor aboard the U.S. land-based PC-3 ASW aircraft, deployment of thousands of acoustically guided Captor mines moored to the ocean floor, retrofit of modern digital sonar processing equipment on older U.S. submarines, and improvements to the Navy's SOSUS network of underwater listening posts. SOSUS, in addition to protecting the U.S. coastline, can detect "every" submarine that leaves the Soviet port of Murmansk, north of Iceland, according to the report.

Finally, the Navy's program to build, by 1983, 32 of the quieter, faster, 688-class attack submarines, of which only a few are now at sea, could be perceived by the Soviets as a major escalation of the U.S. ASW threat.

The negative arms control impact of these incremental improvements is worsened, the report says, by "ambiguities" in U.S. ASW policy and by technical limitations on the ability of commanders to communicate with their forces. Since U.S. policy is to keep the deterrent secure, the United States does not officially want to aquire the ability to find, track, and destroy Soviet SSBN's. On the other hand, the Navy actively seeks the ability to find, track, and destroy Soviet conventional submarines. Since, from a technological point of view, the two capabilities are quite similar, the Soviet Union might well perceive the advancing U.S. "tactical" ASW capability as an improved capability against its SSBN's and hence a threat to the strategic balance.

As dangerous as the policy implications of improved U.S. ASW are the operational mistakes that could take place. The report quotes a former director of Navy ASW, Dan Murphy, as saying that the United States "would not be in a position of differentiating their attack submarines from their SSBN's" in a conventional warfare situation. Thus, U.S. commanders under orders to attack ordinary Soviet submarines could attack a Soviet SSBN in a battle "about which higher authorities could not be quickly informed."

"The United States has acquired a considerable ASW capability involving a threat to Soviet SSBN's (even if the capability is a by-product of other missions) without benefit of official public awareness of the fact or its implications," the report concludes. Arms control measures to constrain this threat to stability "are not comprehensively evaluated in the open literature," and are not being discussed in the current strategic arms limitation talks. Thus, the report tries to drive home to the Executive Branch that in anticipating future arms control problems, something more than weapon-by-weapon analysis is required.

—DEBORAH SHAPLEY

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