response" by providing nuclear options short of strate-gic nuclear attack, and without depending on overseas basing or overflight rights; their "hedge" against a "catastrophic" failure of conventional ASW systems; and, their contribution to strategic stability by dispersing over a wide variety and large number of delivery platforms nuclear weapons ill-suited for a preemptive first strike.

Despite all of these arguments, however, in his dramatic speech of 27 September 1991, President Bush announced that the US would unilaterally withdraw all of its tactical nuclear weapons from surface ships, attack submarines, and land-based naval aircraft; nucleartipped Tomahawk long-range, land-attack cruise missiles and air-delivered nuclear bombs aboard aircraft carriers were specifically mentioned. As a matter of general policy, Bush pledged that "under normal circumstances, our ships will not carry tactical nuclear weapons." He added that many of the withdrawn warheads would be dismantled and destroyed. Defense Secretary Cheney later revealed that these would be the "older" systems, constituting about 50% of those at sea, drawn from a stockpile which has been variously estimated by other sources at between 1,825 and 2,525. The remaining warheads, said Bush, would "be secured in central areas where they would be available if necessary in a future crisis."

At the same time, Bush called on the USSR — which maintains an arsenal of naval tactical nuclear weapons and long-range, nuclear-tipped SLCMs estimated at between 2,450 and 3,075 — to reciprocate. Just over a week later, on 5 October 1991, President Gorbachev did precisely that, adding a call for the actual destruction of all naval tactical nuclear weapons. Thus, in a breathtaking reversal of traditional American policy, the Bush Administration appears to have taken the wind out of the sails of advocates of naval tactical denuclearization. However, as long as the more modern naval tactical nuclear weapons remain in storage, able to be re-deployed in the event of a crisis, the issue will remain on the global arms control agenda.

ATTACK SUBMARINE LIMITS

One of the more daring naval arms control proposals of recent years is for deep cuts, or even a total ban, on ocean-going attack submarines. Much of the traditional East-West naval rivalry has been accounted for by the competition in submarines and anti-submarine warfare. The Soviet submarine force has long been considered the greatest threat to the Western sea lines of communi-

cation, while the American fleet of nuclear-powered attack submarines (SSNs) has been considered by the Soviets as the greatest threat to their deterrent force of strategic ballistic missile submarines. Unlike aircraft carriers and most other surface ships, modern attack submarines have a relatively limited utility for navies in peace or conflicts short of a major East-West war. In any event, the vast bulk of their number in the US and Soviet navies is accounted for by the East-West competition, since other countries' submarine fleets are still comparatively small. Modern attack submarines are also extremely expensive, with the latest US class, the SSN-21 Seawolf, estimated to cost over \$2 billion each. Finally, submarines have always had a rather poor public image, generating repeated unsuccessful attempts to control their operations or even to ban them outright.

Thus it is not surprising that, in an era of decreasing East-West tensions, attention turned to the attack submarine as a prime candidate for naval arms control. Proposals have ranged from one by Johan Holst for an outright ban on the ocean-going variety (leaving smaller, purely coastal defensive vessels untouched), to a suggestion by RAND Corporation analyst James Lacy for "deep cuts" — to about the level of fifty on each side — in the numbers of modern nuclear- and conventionally-powered attack submarines in the US and Soviet Navies. Concern has also been expressed about the proliferation of such submarines to other countries throughout the world.

As in the case of other forms of naval arms control, the US Navy has rejected proposals for bilateral limits on US and Soviet SSNs. It argues that the predominant US mission of sea control requires higher numbers of attack submarines than the main Soviet mission of sea denial, especially given the broader American role in the world. Because the current US production rate is so low, the Navy argues, any cuts in the existing planned force would seriously jeopardize the industrial and research base necessary to meet any future challenges. According to the Navy, cuts would not save much money, at least on the US side, since most American vessels are quite new and, given the cost of dismantling them and storing their nuclear waste, their continued operation would actually be less expensive than their scrapping. Finally, the Navy argues that a large US force is still needed to counter the increasing proliferation of submarines to countries other than the USSR (there are currently 222 conventionally-powered submarines in 21 Third World countries).

Advocates of negotiated cuts reply that the projected numbers of US submarines, given their technological