
RESEARCH REPORTS

Reviews of new research at public agencies and private institutions

"Guarding the Guardians: Civilian Control of Nuclear Weapons in the United States."

Cornell Univ. Press, 124 Roberts Pl., Ithaca, N.Y. 14850. 261 pp. \$34.50

Author: *Peter Douglas Feaver*

"The Limits of Safety: Organizations, Accidents, and Nuclear Weapons."

Princeton Univ. Press, 41 William St., Princeton, N.J. 08540. 286 pp. \$29.95; paper, \$16.95

Author: *Scott D. Sagan*

"The Logic of Accidental Nuclear War."

The Brookings Institution, 1775 Massachusetts Ave. N.W., Washington, D.C. 20036. 364 pp. \$36.95; paper, \$16.95

Author: *Bruce G. Blair*

The end of the Cold War has brought new information and new perspectives on the era's nuclear tensions. Specialists examining how both sides tried to avoid the accidental or unauthorized discharge of nuclear weapons have made some troubling discoveries. Their findings may hold important lessons for the post-Cold War world.

That U.S. nuclear weapons are under civilian control is widely taken for granted. In fact, says Feaver, a political scientist at Duke University, varying degrees of de facto control of nuclear weapons have been given to military commanders at various times since World War II.

Some delegation of control was unavoidable, Feaver says. "When the U.S. [nuclear] arsenal was small, civilians were able to use physical control to maintain absolute control over." The military had the bombers but the civilian Atomic Energy Commission kept the bombs in its possession. Only upon the president's order would the weapons be turned over. "As the arsenal grew, this procedure became more unwieldy and less reliable, particularly against a surprise attack, and so [during the 1950s] physical control gradually shifted to the military."

But "assertive" civilian control of the decision to use nuclear weap-

ons also eroded during the 1950s, Feaver says. President Dwight D. Eisenhower granted to the commander of the North American Air Defense Command the authority to use the nuclear weapons under his command, and Eisenhower may have delegated the same power to the commander of the Strategic Air Command and to the supreme allied commander in Europe. The picture is murky because much relevant material remains classified. However, the Kennedy administration may have reversed those Eisenhower decisions. All nuclear weapons based in Europe were at least ordered fitted with locks to prevent detonation without a code. No reliable information has emerged on delegation of authority since the 1960s, Feaver says.

Wherever the control has resided, Sagan, a political scientist at Stanford, makes it clear that over the decades there have been some "close calls" with nuclear weapons. During the 1962 Cuban missile crisis, for example, a sentry patrolling the perimeter of a military base near Duluth, Minnesota, thought he saw someone climbing the base fence, fired some shots, and sounded the sabotage alarm. Armed guards rushed into the night, and similar alarms sounded at airfields throughout the region. At Volk Field in Wisconsin, however, the wrong alarm was set off:

It signaled that nuclear war had begun. Pilots rushed to their nuclear-armed F-106A interceptors and headed down the runway. Fortunately, the base commander contacted Duluth and learned that the suspected Soviet saboteur had turned out to be a bear. An officer sped his car, lights flashing, onto the runway and stopped the planes before they took off.

Most specialists, says Blair, a Brookings Institution researcher who once served as a U.S. missile-launch officer, have thought that it was only the United States that instituted nuclear alerts (as it did during the Cuban missile crisis, the Paris summit meeting in 1960, and the Arab-Israeli conflict in 1973). The researchers believed that there was "a deep-seated Soviet reluctance to increase the combat readiness of nuclear forces." In fact, Blair says, "the historical record is . . . replete with episodes of Soviet nuclear alerts."

The Soviets went "to extraordinary lengths to ensure tight central control [of] nuclear weapons," Blair points out. "Their safeguards were more stringent than those of any other nuclear power, including the United States." Those elaborate safeguards included dividing the military command-and-control structure in two, with a technical wing charged with keeping the nuclear forces up to snuff and an-

other responsible for combat operations; keeping nuclear warheads away from their delivery units; and using locking devices to impede unauthorized use of nuclear weapons. Nuclear authority was confined to the top Soviet leaders; there is virtually no evidence that any of that authority was ever delegated to military commanders.

This "extreme centralization" strengthened the Soviet capacity to avoid the accidental or illicit firing of a nuclear weapon, Blair notes. However, it also increased the

command system's vulnerability. In a crisis, protection of the leadership had to be the top priority—and the means of achieving it had to be "launch on warning," with all its risk of inadvertent nuclear war.

That is the same strategic "posture," Blair contends, that the United States (despite official denials) was driven toward by the vulnerability of its command apparatus, even though it was less centralized. [The *New York Times* (December 6, 1993) reports that U.S. and Russian officials are discuss-

ing a plan to ease the "hair trigger" problem by "de-targeting" nuclear missiles, aiming them only at the open seas. Blair told the *Times* that he favors stronger measures, such as removing warheads from missiles.]

Awareness of command systems' vulnerability creates dangerous instability. That will be as true in the future as it was in the past, Blair says, which "lends further importance to the prevention of nuclear proliferation." The Cold War is over, but the dangers of the nuclear age are not.

"Baby Boomers in Retirement: An Early Perspective."

Congressional Budget Office, 2nd and D Sts. S.W., Washington, D.C. 20515. 70 pp. No charge.

Retirement looms in the minds of many "baby boomers"—those Americans born between 1946 and 1964—as a troubling prospect. Among their fears: the collapse of Social Security, inadequate personal savings, and slow income growth. While admitting that it is too early to say for sure, the Congressional Budget Office (CBO) concludes from census and household survey data that the boomers should relax a bit. In terms of real income and wealth, it appears that most of them will be better off in retirement than their parents have been.

That is good news, because the older generation has been doing quite well, thanks to strong growth in real wages during their peak earning years; expanded Social Security benefits; higher rates of private-pension coverage; the increase in housing values during the 1970s and '80s; and Medicare benefits. Nowadays, relatively few of those over

65 need to work.

It may come as a surprise to the boomers, but they are currently doing better financially than their parents did as young adults, says the CBO. Median household income (in constant dollars) for those aged 25 to 34 jumped from \$22,300 in 1959 to \$30,000 three decades later. That is a 35 percent increase. Income rose 53 percent for those aged 35 to 44, from \$25,100 to \$38,400. Also up is the ratio of household wealth to income.

As long as real wages continue to grow at least modestly over the next 20 to 40 years, the CBO says, boomers will have higher earnings before retirement than their parents had. That will increase their Social Security benefits and their ability to save. Pension coverage will extend to more people, and benefits (which are likely to be an important source of retirement income, particularly for upper-income boomers) will also be higher. And today's legion of working women will be

eligible for their own Social Security and pension benefits.

For most boomers, income from private wealth—which provides one-fourth of the income of 65-and-older households today—will be crucial to a comfortable life in retirement. Boomers to date may be saving too little, but they still have working years left in which they can correct that. In addition, the boomers stand to inherit substantial wealth.

The prospect of retirement is not uniformly bright. The poorly educated, unmarried women with children, and boomers who do not own their own homes may have to struggle. (Nearly one-third of late boomers aged 30 to 34 in 1991 were not homeowners.) Moreover, all boomers face the possibility that, because of longer life expectancy, growing medical-care costs, and the increased costs of educating their children, they may need more money in retirement than their parents did.