Harold Brown and Defense: From Scientist to Secretary

More than with most Cabinet officers, it is possible to say of Secretary of Defense Harold Brown that his career has been a preparation for his new post. Brown spent nearly 20 years in government service as a nuclear weapons scientist, then in the top civilian technical post in the Pentagon and, finally, Secretary of the Air Force. For the past 8 years he has been president of Caltech, and for much of that time has served as a member of the United States delegation to the Strategic Arms Limitation Talks (SALT) with the Soviet Union.

Brown will need all the expertise he has acquired because he takes office at a time when disagreement among intelligence officials and military planners over Soviet military strength and intentions shows signs of assuming the dimensions of a full-scale national debate. In addition, Brown is faced with the need for early decisions on several controversial weapons systems including the B-1 bomber and the cruise missile.

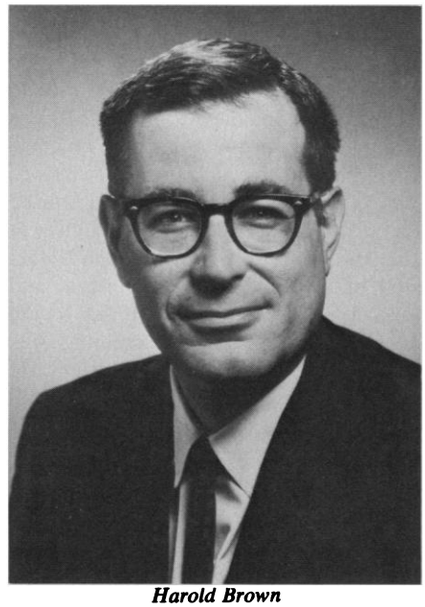
In the ongoing debate on strategic policy, conflicting appraisals seem to make Brown an unusual hybrid of hawk and dove. Brown has been called "consistently soft" on arms control by Eugene Rostow, head of the Committee on the Present Danger, a new organization representing the hawks' viewpoint, but there remain some doubts among the doves about Brown's real views. These doubts may stem from the fact that Brown began his career as a weapons designer and was regarded by some as a hard-liner and obstructionist when he first emerged into public view as an influential scientific adviser in the unsuccessful negotiations for a nuclear test moratorium in the late 1950's.

Despite Brown's subsequent adoption of views that put him in the mainstream of the arms control movement, there are residual misgivings and these may be reinforced by his tendency to act as an analyst rather than an advocate. And, of course, it is always unsafe to predict how any new appointee, no matter how able, will perform in a post as demanding as the defense secretaryship.

A representative view was expressed by Jeremy Stone, director of the Federation of American Scientists, an organization which has consistently worked for progress in arms limitations and for arms reductions. The FAS, incidentally, opposes the B-1 bomber. Said Stone:

"Harold Brown combines an absolutely superb intellect with a gargantuan capacity for work. But judgment and character are the most important things for Cabinet officers and there is no way to be sure how his stewardship will turn out. Without question, he has a more statesmanlike view of the arms race than he did as a director of the Livermore weapons laboratory. But how he will feel compelled to act in the role of Secretary of Defense is something which, I am sure, he does not himself yet know."

The new Defense Secretary has the advantage of achieving office without a bruising confirmation battle. Like the other Carter Cabinet officer with major responsibility for national security matters, Secretary of State Cyrus R. Vance, Brown brings considerable relevant experience to the job, but not an obtrusive ideology or abrasive personality. Although he served as Secretary of the Air Force from 1965 to 1969, the period of intense U.S. escalation of the Vietnam war, Brown does not seem to have suffered from the separating of the sheep from the goats which led to the blighting of the prospects for future office of some Vietnam-era government officials.



Harold Brown

The generally favorable reaction to his new appointment across a wide spectrum of strategic-policy experts seems at least partly attributable to a perception that he was a good—perhaps the ideal—compromise candidate. Except among the more extreme of the doves and hawks, Brown is regarded as a centrist on strategic policy who was readily acceptable. That acceptability was attested to in a fast and friendly confirmation hearing on 11 January before the Senate Armed Services Committee.

To some extent, the warmth of his welcome may be due to the fact that Brown has never staked out detailed personal positions on policy issues. It is not unusual, in fact, to hear him described as "apolitical," or a "technocrat." While he is highly articulate and the public record of his comments is ample—in congressional hearings particularly—he has an unusually meager bibliography for a public figure of his prominence. No books. He is not a frequent contributor to the journals—an article in *Foreign Affairs* can be cited as the only recent major example. And his speechmaking seems to be confined primarily to his duties as Caltech president.

When he does express himself on substantive issues publicly, he remains always the analyst. A letter written in May by Brown in reply to a request from Senator William Proxmire (D–Wis.) and made public by Proxmire yields a sample of Brown's mind and method in action. Proxmire had asked Brown his opinion on the B-1 bomber which was then the subject of considerable controversy. This was Brown's reply:

> After receiving your letter of May 6, I concluded that I should try to examine as much of the relevant material as I could conveniently find before expressing an opinion. To that end, I read five of your speeches on the B-1, and the Air Force replies which, to your great credit, you arranged to have published. I had previously read the Brookings Institute report "Modernizing the Strategic Bomber Force." I arranged to look at an unclassified response to that report prepared by the Air Force, and also to see the "Joint Strategic Bomber Study."
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> My own conclusion is that there are probably additional layers of argument and complexity that could be added to the discussion, and that all of the studies and all of the statements include some questionable assumptions and assessments. However, given the criteria for our military forces in terms of goals, costs, and effectiveness which your statements implicity accept (and which I also tend to accept, at least for the sake of the study of this issue) I believe that the Defense Department's "Joint Strategic Bomber Study" has the best of the argument in terms of accuracy, clarity of assumptions, and defensibility of conclusions.

Taken at face value, the letter demonstrates his penchant for absorbing quantities of both data and policy arguments and then of adopting a rather detached view in waiting to see which way the weight of fact and argument will tip the scales. Questioned on the B-1 issue during his confirmation hearing, Brown indicated that he felt there was a place for a bomber in U.S. strategic forces. He added, however, that he had made no decision on whether or not to recommend to Carter that the B-1 go into full-scale production, and that such a recommendation would be based on the costs of the bomber and the availability of alternatives for achieving the same ends.

How Brown will function as Secretary of Defense depends, of course, in large measure on how Carter wants him to function. Whether Brown becomes the initiator of defense policy or simply the manager of the military establishment or, as is more likely, something of both, depends on the interaction between the two men.

It is reliably reported Carter and Brown had occasion to get to know each other before the presidential stakes were run. Both have served on the Trilateral Commission, the private, international discussion society of which David Rockefeller was the principal organizer. With its members drawn from the United States, Western Europe, and Japan, it meets every 9 months to examine topics with global titles and implications. Right-wing critics call it another Eastern elitist conspiracy to manage foreign policy and left-wingers see it as a mixer for the power elite. More detached observers think that one aim as far as U.S. members are concerned is to help restore coherence and cohesiveness to bipartisan foreign policy.

Carter is said to have been sufficiently impressed with Brown to be relying on him for counsel in staffing the science advisory machinery for his Administration. It is reported that this is one area in which the Carter transition staff did not complete its winnowing process and where Carter himself will take over. Brown has not been particularly prominent in civil science policy affairs, but he was the first chairman of the advisory board to the congressional Office of Technology Assessment and now heads the steering committee for OTA's R & D policy program. As chairman, Brown was rather critical of OTA management (*Science*, 9 August 1974) and asked for more rigor in its studies. At OTA Brown has lived up to his reputation for doing his homework, and has apparently established good rapport with several of the congressional members of the Technology Assessment Board; he is also highly regarded by staff members.

There is no dispute about the power of Brown's intelligence or his capacity for work. A chronic high achiever, he started as something of a prodigy, graduating from Bronx High School of Science at 15 with a dazzling garland of awards and going on to Columbia to win his bachelor's degree at 18 and a Ph.D. in physics at 22. That was in 1949, and Brown proceeded to the Lawrence Radiation Laboratory at Berkeley to do research.

In 1952 Brown was in the first contingent of scientists recruited to form the cadre of the new Livermore Radiation Laboratory. It was a time when the debate over whether the United States should develop hydrogen weapons had caused a schism in the ranks of American nuclear scientists and the Oppenheimer case lay ahead. Livermore was established on the insistence of Edward Teller and his allies primarily for the purpose of developing the superbomb. Herbert York was the director and Brown and John S. Foster headed the two main weapons development divisions.

Bright Young Men

Livermore in the 1950's was known rather flippantly as "Teller Tech," with the implication being that Teller was training a generation of bright young protégés in his own technical and political image. Although the details are still locked in classified files, it now appears that the young scientists were quite capable of coming up with ideas of their own. Brown is said to have played a central role in the development of the Polaris missile and was an originator of the Project Plowshare plan for peaceful uses of nuclear energy. York recalls that it was Brown, in fact, who came up with the name.

From the middle 1950's on, Brown began to be called on for advice on questions beyond the ambit of the weapons lab, but his most significant experience came in 1958 and 1959, first as adviser to the conference of Experts on the Detection of Nuclear Tests in Geneva, and later as senior scientific adviser to the U.S. delegation at the meeting discussing a nuclear testing moratorium. He is remembered as a leading skeptic about the effectiveness of proposed means for monitoring seismic events in order to detect underground nuclear testing. The disputes over verification were an important factor in creating an impasse preventing progress toward a comprehensive test ban.

Brown succeeded York in the Livermore directorship when York went to Washington late in the Eisenhower Administration, first to work for the President's Science Advisory Committee and then to become Director of Defense Research and Engineering in the Pentagon. After the election of John F. Kennedy to the presidency Brown followed York to Washington and succeeded him in the DDR & E post. At 34 Brown was the third-ranking civilian official in the Pentagon hierarchy, adviser to the Secretary of Defense on scientific and technical matters, and overseer of research and engineering activities in the Defense Department.

Robert McNamara was Kennedy's Secretary of Defense and took office determined to assert civilian control and scientific management principles on the vast military establishment. Brown gained a reputation as well-briefed naysayer to new weapons systems proposed by the military services. Notable victims of DDR & E were the B-70 high-altitude bomber and the Skybolt air-to-ground missile system.

Brown was a conspicuous member of the group of civilian analysts with backgrounds in science, engineering, and economics who the military unfondly dubbed the "Whiz Kids" because of their youth, skillful command of cost-benefit analysis, and lack of deference to conventional military wisdom on weapons and organization. Brown won a sufficient measure of respect in the Pentagon to be able to move without experiencing significant turbulence to the post of Secretary of the Air Force in 1965.

As Air Force Secretary, Brown in testimony to Congress consistently supported the Administration case for American involvement in the Vietnam war and endorsed the effectiveness of air power in Vietnam. When his nomination to the Pentagon post was being discussed in December he was questioned about a passage in one version of *The Pentagon Papers* which characterized Brown as opposing restrictions on bombing North Vietnam. Brown insisted, however, that the memorandum as published was not accompanied by a covering letter in which he had expressed his own opposition to lifting such restrictions.

At a press conference in Plains, Ga., on 22 December he was quoted as saying the Vietnam war was "a very, very catastrophic time in American history . . . we misjudged the political base in Vietnam for our activities there . . . many mistakes were made."

At the Pentagon, and especially in his

days at DDR & E, Brown had a reputation for aloofness, for concentration on business and, like his boss, McNamara, for not suffering fools gladly. Some who knew him then and later say that as president of Caltech, outside the controlled environment of the military, he has had to deal with students, faculty, trustees, and potential benefactors of the institution without benefit of the chain of command, and this has had a "humanizing effect" on him.

Brown was not a popular choice as president among either students or faculty. Caltech was no hotbed of protest during the days of campus activism, but Brown's identification with official Vietnam policy did not endear him to the students, and his lack of recent scientific credentials and his government background made the faculty skeptical.

If he is still regarded on campus as "not exactly a Mr. Chips," as one undergraduate put it in a widely quoted remark, Brown is said to have established good relations with the recent generation of students. He is regarded as successful as a fund raiser, a sine qua non for university presidents today. As for the faculty, according to one professor who was originally dubious about Brown, a farewell party showed that "the faculty was a lot sorrier to see him go than they thought they'd be."

After leaving government, Brown joined the boards of Beckman Instruments, IBM, Schroders Limited, and the Times-Mirror Company which publishes *The Los Angeles Times*. These are not unusual ties for the president of a major technical university.

Carter's choice of Brown does appear to signal that the new President is affirming his support of the deterrence strategy which has dominated U.S. policy through most of the nuclear era. The strategy is based on a doctrine of "mutually assured destruction," the assumption that either the United States or Soviet Union could survive a first strike to inflict unacceptable damage to the other's cities and strategic targets.

Perhaps the most complete statement of Brown's view is to be found in an address he made before the Institute of U.S. Studies of the Soviet Academy of Science (see box).

If Carter had picked the other most prominently mentioned candidate for Defense Secretary, James R. Schlesinger, over Brown, it would have been interpreted as a sign that Carter favored the view of strategic policy of which Schlesinger is the leading exponent.

As Defense Secretary under President Ford, Schlesinger urged that U.S. forces develop an enhanced ability to fight a limited nuclear war. This entailed a retargeting of some missiles to permit selective, relatively small-scale strikes at Soviet military and industrial targets. Schlesinger argued that this doctrine of "flexible response" would allow the United States to respond to Soviet strikes at U.S. military targets or attacks with conventional weapons on U.S. al-

Brown on Deterrence

*Some insight into Secretary of Defense Harold Brown's views on deterrence may be gained from the following excerpts from an address titled "Strategic Force Structure and Strategic Arms Limitations" he delivered at the Institute of U.S. Studies of the Soviet Academy of Science in Moscow in March 1975.**

Deterrence is, first of all, the perceived capability and intention of retaliating so as to destroy a substantial part of the population and industrial capacity of any nation initiating a nuclear attack on oneself. By this capability and intention, deterrence has the objective of preventing any such attack from being launched. One cannot be precise in advance as to how much destruction and what assurance of destruction is needed to deter. To some degree it depends on how unattractive the political decisionmaker considers the alternatives to nuclear war. Indeed deterrence is not without its risks as a doctrine, because there may be some who are not rational enough to be deterred by the prospect of "assured destruction." That danger will grow as more countries obtain nuclear weapons. In addition, deterrence may fail if one or another of the nuclear powers decides irrationally that somehow circumstances are so bad that it would be better off with a nuclear war. Alternatively, one power might be convinced that it was about to be the victim of a nuclear attack no matter what it did, and that the outcome would be "better" for it should it strike first itself.

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A nation confronted with the fact of a strategic nuclear attack will indeed want to have assured itself of options other than an immediate all-out retaliatory attack on urban-industrial targets. But every examination I have seen of the various possible subsequent courses of events indicates that it is unlikely that the other options will in the end avoid mutual destruction of the attacker and attacked. Thus I judge (or at least hope) that the most probable outcome is successful deterrence of strategic war. The next most probable is mutual destruction, and I am convinced that by far the least probable outcome is a nuclear exchange confined in any effective ways to military targets.

I do not exclude the possible use of tactical nuclear weapons as a response to a large conventional attack in some geographical areas. However, in my view the chance of containing their use either geographically or in terms of weapons yields and aim points is quite small.

Providing that no one is deceived into thinking that the existence of forces, options and plans for a strategic countermilitary exchange makes survival of either the United States or the U.S.S.R. in a nuclear war at all likely, or into forgetting that the fatal and almost certain outcome is the explosion on the cities of both countries of nuclear weapons, the existence of such plans and the development of such forces is an acceptable idea. However, to the extent that it erodes deterrence, this contingency planning could increase the likelihood of catastrophe. For that reason, it ought to be severely limited. My own view is that the facts of the indefensibility of each of our countries against nuclear attack by [the] other, and the open-ended nature and unlimited costs of a countermilitary strategy, are clear. I therefore conclude that counterforce capabilities, especially because the limitations on their effectiveness are not matched by limitations on their cost, will not be carried very far on either side. Facts do in the end prevail, whatever doctrine may assert.

*The address appears in the printed hearings on Civil Preparedness and Limited Nuclear War before the Joint Committee on Defense Production on 28 April 1976.

lies in Europe without resorting to nuclear attacks on Soviet population centers.

Schlesinger resigned from the Ford Administration under pressure at least in part because his warnings that the Soviets were seeking military superiority over the United States put him into conflict with Secretary of State Henry Kissinger. But his flexible-response strategy influenced policy under his successor Donald Rumsfeld and several of the new weapons systems now under consideration are designed to implement that strategy. These include the new M-X missile which could be used with mobile launchers. Schlesinger, who apparently impressed Carter with his obvious competence and grasp of technical detail in much the way Brown did, is energy coordinator in the Carter Administration.

When Brown was asked at his confirmation hearings whether he thinks the Soviets are in fact seeking a military edge, Brown said that the Soviets would probably continue to build up their conventional and strategic forces with the possible aim of gaining "more political leverage and options."

When pressed for his views on Soviet intentions, Brown said these are "uncertain and will remain uncertain," and "We're going to have to learn to live with ambiguity because I believe their intentions will vary according to what our actions are."

In recent weeks Brown has expressed skepticism about arguments that Soviet civil defense measures may have upset the strategic balance in favor of the Soviets, and has also indicated that he does not concur with intelligence estimates based on "worst case" analyses that show the military advantage shifting to the Soviets. At the hearings, Brown said that his own assessment was that "we are not behind" in military strength, but that the United States should be prepared to modernize both its conventional and strategic forces to avoid falling behind.

On the matter of military spending, Brown told Senate questioners that cuts proposed by Carter could not be achieved immediately. During the campaign, Carter said that $5 billion to $7 billion could be trimmed from the military budget by trimming waste in Pentagon programs. Brown said of such cuts that "It's not going to be easy," and "I don't think it's something we can promise for the first budget we prepare, but that is our goal." Brown pledged a close look at the military pay structure, which has been causing concern since the volunteer army accelerated the rise in the cost of military pay and pensions.

Brown has amply demonstrated his ability to deal effectively with questions of military hardware and "housekeeping," and his familiarity with the Pentagon should permit him to move expeditiously on such matters. But it seems evident that dealing with controversial issues of strategic policy, with their implications for SALT and détente, will be the major challenge for Brown and, very possibly, for the Carter Administration.—JOHN WALSH

Gene-Splicing: Critics of Research Get More Brickbats than Bouquets

"Some of us are now in the awkward position of having our colleagues ask us, 'What have you done to the future of genetic research?' "

So Norton Zinder lamented at a recent Senate hearing on the gene-splicing technique known as recombinant DNA research. Zinder was a member of the group, led by Paul Berg of Stanford, that first called attention to the possible hazards of the new technique. In the eyes of the public, the Berg group performed a responsible and self-denying action which reflected to the credit of the scientific community. "If Berg and his colleagues don't get the Nobel prize for medicine, they deserve it for peace," was the comment of one outsider well versed in science and society issues, former FDA general counsel Peter B. Hutt.

Far fewer bouquets have come from within the scientific community for those who draw attention to the possible hazards of the gene-splice technique. "There are people who say, 'If you guys hadn't opened your mouth, nothing would have happened, it would all have blown away,' " Zinder remarks.

The initiative taken by Berg and his colleagues resulted in the NIH guidelines on gene-splicing research, but a second group of critics then emerged who believe, for various reasons, that the guidelines are too weak.

The Berg group has been subject to the occasional reproof from their fellow biologists, but the reaction toward the second group of critics has often burst into outright hostility. While the Berg group tends to feel somewhat defensive at being attacked from both sides, the second-wave critics, especially those at Cambridge, perceive themselves to be the objects of a much harsher reaction. Untenured faculty, they say, have been pressured into keeping quiet for fear of jeopardizing their jobs or promotion, and tenured staff have been subject to degrading slanders or rumors designed to discredit their position.

A widely cited example of the kind of attack being made on the critics is the comment made recently by James Watson, a member of the Berg group who has now become a vigorous proponent of the gene-splicing technique. In a recent interview in *New Times* magazine Watson is quoted as deriding, in flamboyant terms, Erwin Chargaff of Columbia and Ruth Hubbard of Harvard, two well-known critics of the research, and as describing a third scientist in even harsher words.

In a letter in the current issue of the magazine, however, Watson says that the passage "seriously misrepresents my views, and in doing so conveys a totally unwarranted impression of the professional abilities" of the third scientist.

Whatever Watson said or meant to say, the sentiments expressed, according to the critics, typify the attitudes on the part of senior faculty which have inhibited younger scientists from speaking out on the issue. Chargaff and Hubbard are established scientists who can take care of themselves, but untenured scientists, such as the third subject of Watson's ire, are more vulnerable to such attacks.

Because of the passions aroused last year in Harvard over the plans to build a containment laboratory for gene-splicing research and Mayor Vellucci's threatened interference, several scientists found the debate had become unpleasantly heated. One was Ursula Goodenough of the Harvard Biological Laboratories, who dropped out of the debate after a brief early involvement. "I decided that,