

out and made him a dean at a very young age."

Some observers suggest that Hardin's appointment to the National Science Board, the policy-making body of the National Science Foundation, was motivated largely by the desire to have university administrators represented on the board.

Philip Handler, NSB chairman, says Hardin "brought to the board a broad knowledge of agricultural economics, of

the educational problems of rural America, and of the impact of federal programs on a large state university." Handler adds that Hardin "has a deep appreciation of the significance of science and technology in American society and the vital role of educational institutions, particularly their graduate programs, in the continuing process of utilizing science in the national interest."

Hardin earned his bachelors, masters, and doctors degrees at Purdue Univer-

sity. He has shown particular interest in agricultural economics and world food problems, but has also dealt with a variety of other issues while serving as a trustee of the Rockefeller Foundation, a past president of the Association of State Universities and Land Grant Colleges, a former director of the American Council on Education, and a past chairman of the Omaha branch of the Federal Reserve Bank of Kansas City.

—PHILIP M. BOFFEY

## ABM: Senators Request Outside Scientific Advice in Closed Session

The need for scientific advice is a subject infrequently discussed during debates on the floor of either house of Congress. However, in a secret session on 2 October the Senate discussed at length the subject of scientific advice on deployment of the antiballistic missile (ABM) system, during a 2½-hour meeting. (A version of this closed debate, which had been censored by the Department of Defense at Senate request, was quietly slipped into the *Congressional Record* on 1 November.) The debate was initiated, in discussion of the 1969 defense appropriations bill, by John Sherman Cooper (R-Ky.), leader of a group of senators who worked to postpone deployment of an ABM system.

Although the Johnson Administration originally justified construction of a "thin" ABM system on the basis of protection against the threat of Communist China, critics responded that it was merely the opening wedge in a campaign to deploy a highly expensive system against the Soviet Union. In the debate, Senator Richard B. Russell (D-Ga.), chairman of the Armed Services Committee and an ABM backer, gave substance to the critics' original doubts when he discounted the Chinese threat and said, "I therefore am frank to say I consider it primarily the beginning of a system to protect the people of this country against a Soviet missile atomic attack."

In response to the dogged questioning of Senator Cooper about whether the Soviet deployment of an ABM system around Moscow had been slowed down, Russell replied, "The Soviets

have reduced the content of their anti-missile complex around Moscow." Russell said it had turned out that Soviet scientists had not done any better than U.S. scientists in developing an ABM system; the Soviets, he added, "are having all kinds of trouble."

During his exchanges with Cooper, Russell said "one of the most serious mistakes I have ever made" (in his chairmanship of the Armed Services Committee) was "in allotting vast sums to the Navy for missile frigates before we knew we had a missile that would work on them." At one point, Russell said, "we had a couple of billion dollars" tied up in missile-carrying ships because of the failure of the Tartar, Talos, and Terrier missiles. Russell said this error, which was based on the unanimous testimony "of everyone in the Department of Defense and the Navy," probably "cost the taxpayers \$1 billion because they had to rebuild the missiles three times." Russell said there were several other R&D programs costing over a billion dollars which had never been made operational, including the Navajo missile. Russell also agreed that the billions of dollars spent on the F-111 (TFX) warplane had been ill-spent. Russell argued that he had taken more time in considering the ABM system than in considering Tartar-Talos-Terrier and was thus convinced it would work.

Then, in a long verbal fencing match, Foreign Relations Committee chairman J. William Fulbright (D-Ark.) pressed Russell about the kind of scientific advice Russell's committee had requested on the ABM.

FULBRIGHT: Did I understand the Senator to say that no witnesses were brought into the hearings on this matter except Administration witnesses?

RUSSELL: We had no requests whatever. We heard all the witnesses who wanted to be heard. None of the Senators who have this great technical acumen as to the missile came before the committee.

FULBRIGHT: Mr. President, I want to ask a question. I am not criticizing.

RUSSELL: I say no, because none of them asked to come.

FULBRIGHT: I remember, in the joint hearings on the Nuclear Test Ban Treaty, there was testimony from such scientists as [George B.] Kistiakowsky and [Herbert F.] York, who were considered the greatest scientists in this area. At that time, I remember, they had great doubts as to the practicability of this kind of missile. Is it the practice of the Senator's Committee never to have witnesses except those of the Administration?

RUSSELL: No, that is not our policy.

FULBRIGHT: But in this case, no witnesses except those under the Administration did testify; is that correct?

RUSSELL: We heard all the witnesses who requested to come.

FULBRIGHT: I fail to make myself clear.

RUSSELL: I understand what the Senator is driving at. I did not get out and try to find some scientists opposed to this system, and subpoena them and bring them before the committee, if that is what the Senator means.

FULBRIGHT: No; I do not think scientists of this character have to be subpoenaed. I think they are just as interested in the welfare of the United States as the Administration.

RUSSELL: I did not know the names of any of them.

FULBRIGHT: Two of them whose names come to mind in this area were Kistiakowsky and York. . . . I am not trying to argue; I merely wanted to ask the question.

**RUSSELL:** No, they did not request to come before the committee. I regret that the Senator from Arkansas did not furnish their names.

After a series of heated exchanges between Fulbright and Russell which were censored, Fulbright went on to comment upon the need to obtain advice outside the Administration on major decisions such as the ABM:

"I must say that in my own committee I would never think of confining our witnesses to members of the Administration.

"It seems to me that our function is to get the best knowledge not only from the Administration, who, after all, are under orders from the Commander in Chief, but also from external witnesses. And the external witnesses will certainly come. They did come to my committee and they will come to other committees.

"I think that this fact alone would justify a delay in time so that we may consult with scientists outside of the Administration.

"These people are also patriots. They do not have to wear uniforms to be interested in the future of the United States. And, traditionally, the innovations and discoveries have not come from within the establishment. The atomic bomb did not come from a military man, it came from men like Einstein, Fermi and others. . . . The innovations in these and other scientific fields are usually not developed by men in uniform."

Several senators disputed the arguments of Fulbright and his anti-ABM colleagues. Russell said that not all of those supporting the ABM were in uniform. He noted that John S. Foster, Jr., the Defense Department's Director of Research and Engineering, supported the ABM and that Foster was "one of the truly great scientists in this country." He also noted that research on ABM "is being done by college professors in their laboratories."

Henry M. Jackson (D-Wash.), another senior member of the Armed Services Committee, argued that "it is dangerous for politicians who do not like the deployments of some weapons systems to invoke so-called scientific authority. . . . We can find scientists on all sides of every issue involving a complicated weapons system. Many of them . . . are motivated by deep conviction that somehow or other we can sit down around the table with the Soviets, and negotiate and settle all things."

John O. Pastore (D-R.I.) cited phys-



Senator John S. Cooper

icist Edward Teller's backing for initial ABM development and listed his credentials for speaking on this subject: "Dr. Teller is an outside scientist. He is not in the employ of the government as far as I know. And Dr. Teller is the father of the hydrogen bomb."

Later, Fulbright responded that "many of these people who have been mentioned, particularly Dr. Teller, have been kind of tame members of the establishment for many years. These laboratories they mention are nearly all 100 percent supported by the Pentagon. They are all on the payroll."

Senator Philip A. Hart (D-Mich.) said that Teller "is practically the only one with distinction in the scientific community, who takes this position" (favoring the ABM), and he quoted a telegram which asserted that "the Nation's foremost scientists are almost unanimous in their belief that an anti-ballistic missile system will not increase U.S. security." The signers of the telegram urged that the deployment of an



Senator Richard B. Russell

ABM system be delayed. They included Harvard's George B. Kistiakowsky, science adviser to President Eisenhower; M.I.T.'s Jerome B. Wiesner, science adviser in the Kennedy and Johnson administrations; Hans A. Bethe, a Cornell University physicist; Carl Kaysen, director of the Institute for Advanced Studies at Princeton; and Roswell L. Gilpatric, former assistant secretary of defense.

Russell attacked the scientists for their failure to appear in person to testify against the ABM. "These scientists," he argued, "every time [an ABM] bill comes before the Senate, send a telegram saying, 'This will not add to our defense.' But at no time has any of them ever asked to appear before the committee. . . . But year after year, they send in this telegram when the bill is before the Senate." (Russell neglected to mention that it is difficult to find out when particular military appropriations items are being considered by his committee.)

After this closed debate, the Senate disregarded the efforts of the Senators who wished to postpone ABM deployment and voted 45 to 25 in favor of the appropriation. Some in the anti-ABM camp think they would have been able to force deletions from the ABM appropriation had it not been for the Soviet occupation of Czechoslovakia in August and the fears that the invasion engendered. Others think that the spreading of ABM contracts into almost every state makes it difficult for congressmen to vote against deployment. At one point in the debate, ABM supporter Jackson said, "I thought the military-industrial complex controlled all Senators."

Whether Jackson's observation has a good deal of truth in it or not, it is apparent that the funds for deployment of the ABM system are already being spent. Senator Cooper labeled this initial expenditure as embarkation "on a course where we will end up exactly where we are today with no gain in security, with an expenditure of about \$70 billion."

But there will have to be future appropriations bills passed to provide ABM funds, and Cooper and his senatorial allies are resolved to continue their fight against deployment in the next session of Congress. Now that Russell has denounced scientists for their failure to testify, these ABM critics can demand opportunities to express their objections in person before Russell's Armed Services and Appropriations committees.—BRYCE NELSON