tary's systems analysts showed that, even if an RS-70 could be developed, the need for it was questionable when cheaper, less vulnerable, and more effective strategic missile systems were available. Even the existing B-52 bomber offered certain major advantages over the RS-70. For instance, in periods of rising tension the B-52 would be far easier to keep airborne, and thus safe from surprise attack, because of its lower fuel consumption and cheaper maintenance.

Moreover, by flying in low beneath enemy radar, the subsonic B-52 might have a better chance to escape ground-to-air missiles than the high-flying supersonic RS-70 would. The higher the RS-70 flew, the earlier it would be detected by radar and become a target for enemy ground defenses. While the RS-70's performance goals were glamorous, it was clear that nobody in the Air Force had bothered to subject them to thorough cost-effectiveness analysis.

A major advantage claimed for the RS-70 was that, unlike a ballistic missile, it could be launched under "positive control" and sent on to its targets or recalled, depending on circumstances. This argument McNamara disposed of by noting that, when warning of an enemy attack is received, bombers have to be launched, because they are vulnerable. The fact that a mobile and concealed strategic weapon such as the submarine-based Polaris missile cannot be launched under positive control is a matter of indifference, he said, because launching can be delayed until a final decision is made that its targets are to be destroyed.

In addition to evaluating the RS-70 in the light of alternatives, McNamara pointed out that, to be able to carry out its reconnaissance-strike mission, the RS-70 would need a radar of extremely high resolution. Indeed, the concept of the RS-70 was predicated on the Air Force's optimistic belief that this and other highly ambitious electronics systems could be developed in time for use in an aircraft scheduled to fly by 1967.

Taking the radar as an example, McNamara underscored the uncertainty of the undertaking. "The proposed mission," he said, "would require the gathering of radar reconnaissance data on the presence of new targets—or known targets which may not have been destroyed or neutralized—and the prompt processing and analysis of these data in flight. The proposed radar, moving

NEWS IN BRIEF

● **PSAC APPOINTMENTS**: President Johnson has appointed two new members to the President's Science Advisory Committee (PSAC), including the first social scientist in the 10-year history of the committee. Appointed to 4-year terms were Herbert A. Simon, professor of industrial administration and psychology at Carnegie-Mellon University, and Harland G. Wood, dean of science at Case Western Reserve University. Simon received his Ph.D. from the University of Chicago in 1943, and has been chairman of the board of directors of the Social Science Research Council and is chairman-designate of the Division of Behavioral Sciences of the National Research Council. He is a member of the National Academy of Sciences (NAS) and its Committee on Science and Public Policy. Wood received his Ph.D. from Iowa State College in 1934. He is the founder of the department of biochemistry at Western Reserve and has been a consultant to the U.S. Atomic Energy Commission (AEC) and a member of the AEC's Advisory Committee on Biology and Medicine. He is a member of NAS and is a past president of the American Society of Biological Chemists. On PSAC, Simon and Wood succeed Philip Handler and Herbert F. York, Jr., whose terms expired at the end of 1967.

● **NEW PUBLICATIONS**: A revised edition of *Science Information in Japan* has been published by the Japan Documentation Society. The 192-page publication, which was first published 5 years ago, deals with the generation, flow, and use of scientific and technical information in Japan. The revision was supported by a $10,400 grant from the National Science Foundation. Copies are available, at $5 each, from the Japan Documentation Society, NIPDOK, Kikai Sinko Kiakan, Siba Park, No. 21, 1-5, Minato-ku, Tokyo, Japan.

Copies of congressional hearings on the *Scope, Magnitude, and Implications of the United States Antiballistic Missile Program* are now available. The hearings were conducted 6 and 7 November by the Subcommittee on Military Applications of the Joint Committee on Atomic Energy. Free copies may be obtained from the Joint Committee on Atomic Energy, Senate Post Office, Washington, D.C. 20510.

Part 1 of hearings on the *National Marine Sciences Program*, conducted in August, September, October, and December, are available, without charge, from the House Merchant Marine and Fisheries Committee, 1334 Longworth House Office Building, Washington, D.C.

● **HISTORY OF SCIENCE**: A new undergraduate program, the History and Philosophy of Science, has been approved by the Princeton University faculty for the fall of 1968. The program will be directed by Thomas S. Kuhn, professor of the history of science, and will be staffed by ten faculty members from the departments of history and philosophy. Edward D. Sullivan, dean of the college, said the program is designed "to increase understanding of the central role played by the sciences in contemporary life."

● **NEW BIOLOGY CENTER**: Harvard University has announced the establishment of a Center for Environmental and Behavioral Biology which will coordinate the activities and facilities of several Harvard institutions. Among the facilities included in the center are the Museum of Comparative Zoology, the University Herbaria, the Biological Laboratories, and the Harvard Forest. The center, which will develop courses of instruction, is also seeking funds for new research facilities. The center will be staffed independently of the affiliated institutions, but will recommend appointments to the institutions with which it is affiliated. Eleven biologists were named as the first members of the center, including Edward O. Wilson, professor of zoology, who was named chairman of the center.

● **MARINE SCIENCES PUBLICATION**: The Committee on Marine Research, Education and Oceanography, which published *University Curricula in the Marine Sciences* last year, is seeking information to be included in an addenda. Colleges or vocational schools with courses in marine science, oceanography, marine technology, or ocean engineerings that were not included in the first publication are requested to write the committee at Building 159E, Room 476, Washington Navy Yard, Washington, D.C. 20390. The previous publication is available free from the same address.