GENERAL SCIENCE

U.S. Weighs Soviet Threat

Scientists, educators and laymen are agreed that the American citizen must be better informed than he now is on the challenge and promise of the scientific revolution.

➤ THE SPUTNIK-INSPIRED gathering of some 200 scientists, educators and public figures that convened at Yale University assayed the Soviet scientific threat and suggested what should be done about it in the United States.

These possibilities are evident:

America can catch up in science and education, but it will take some doing. It will take dollars as well as brains. Some will argue that we are not behind in all fields, but most will agree there is needed a beefing-up of basic scientific research, more and better teaching at secondary and college levels, and the development of the sense of urgency and importance of science and technology for defense and peaceful living. (See p. 110.)

There was a real apprehension among the gathering that, despite the wide concern about the situation, there is too little appreciation of the necessity of the participation of all the people in the actions that must be taken.

The people do not have the emotional drive of a shooting war, yet those who have worked on the situation realize that the danger right now may be even more acute than it has ever been in the darkest days of any war we have fought.

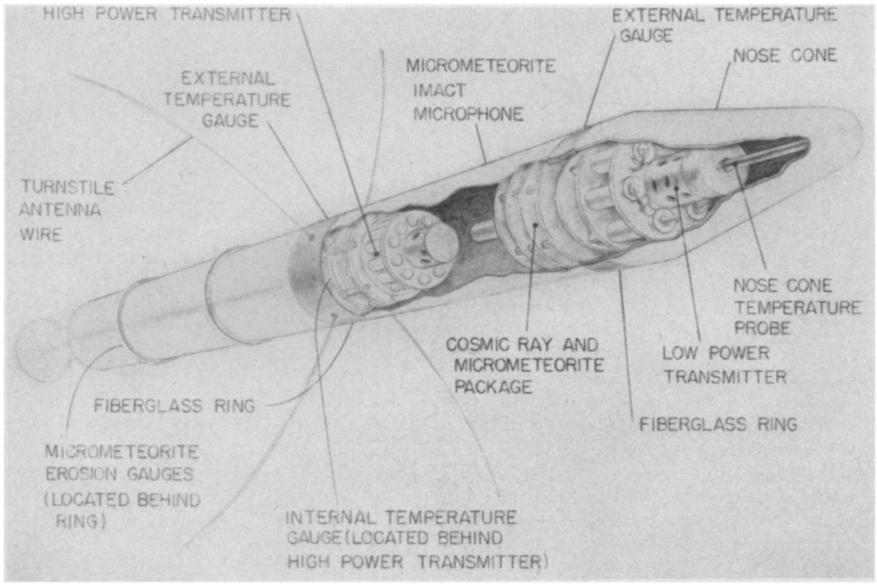
It is almost as though there were unseen participants in this President's Committee conference on "American human resources to meet the scientific challenge." These are H-bomb-armed Soviet submarines out in the Atlantic not far away, the many tens of thousands of Soviet students and professors laboring long hours on tough courses of study, and the bosses in the Kremlin who can push-button world destruction.

America's top science "brass" at the conference were lead by Dr. James R. Killian, Jr., President Eisenhower's assistant on science and technology, and Dr. Alan T. Waterman, director of the National Science Foundation, while Allen W. Dulles, director of the top-secret Central Intelligence Agency, revealed the total nature of the Soviet threat.

There was insistence by those attending the conference that the public be told the facts, not alone about the Soviet threat, but about:

1. The challenge and promise of the scientific revolution in which we are engaged.
2. The economic benefits of an adequate science program.
3. The importance of technology to the free world and the countries not yet committed to communism.
4. The importance of an educational system that produces well-rounded citizens as it educates the world's best scientists and engineers.

Science News Letter, February 15, 1958



EXPLORER SATELLITE—This cutaway diagram of the first U. S. satellite, the Explorer, now circling the earth some 1,500 miles in the atmosphere, shows in some detail the instrumentation that will give important data on such things as radiation, temperature and meteorite activity of space hundreds of miles out.

● RADIO

Saturday, Feb. 22, 1958, 1:30-1:45 p.m., EST.

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Winners of the Seventeenth Annual Science Talent Search for the Westinghouse Science Scholarships will describe their projects.

Guest portions will be transcribed at CBS San Francisco, Miami, Baltimore, Boston, New York, Philadelphia and Washington.

CHEMISTRY

Basic Research Made "Explorer" Possible

➤ BASIC RESEARCH that started 150 years ago in Europe is directly responsible for putting America's Explorer satellite into its orbit.

The new, special and "rather exotic" fuel credited by Army missile expert Dr. Wernher von Braun as having powered the Explorer's rocket vehicle is believed to be a modification of one of the new exotic boron-based fuels giving jet aircraft greater speeds, longer range and higher altitude flight.

If Dr. von Braun's use of "exotic" in describing the fuel followed current practice among rocket fuel chemists, the Explorer was powered by a propellant that bears a closer relationship to drugstore eye-wash than to conventional petroleum fuels.

Since the discovery of boron in 1808 by Sir Humphrey Davy in England and, independently, in France by Gay-Lussac and Thenard, the element has found its primary use as a mild antiseptic in the form of boric acid. However, until sometime during World War II, boron was subjected to intensive "pure research" by scientists with no expressed interests in fuels or rockets.

During the century of pure research, volumes of scholarly notes were written about the strange element that seemed partly metallic in character, yet is officially a non-metal. The work, conducted primarily in universities and only for the advancement of scientific knowledge, became the basis of the first detailed American investigation, started in 1942 by Dr. H. I. Schlesinger at the University of Chicago.

Less than ten years ago boron left the basic research laboratory and entered the applied laboratory with a view toward becoming a revolutionary fuel.

The first small production quantities of exotic fuels were delivered to the armed services less than a year ago. As late as December, 1957, scientists queried by SCIENCE SERVICE believed the new high-energy fuels were still available only for jet use and that much more work would be needed to put them in rockets.

However, Callery Chemical Company, Pittsburgh, then announced that one of the fuels, HiCal, had been prepared successfully in a solid form suitable to rockets. Shortly thereafter Callery and Thiokol Chemical Corporation, Trenton, N. J., revealed joint plans to begin early production of solid propellant rocket engines using the exotic fuel.

Science News Letter, February 15, 1958