# state & society

## Bombs knock out SLAC's knockout system

Two bombs exploded in the klystron gallery of the Stanford Linear Accelerator Center early in the morning of 7 December, damaging about $45 000 worth of electronic equipment. SLAC officials, the FBI and the San Mateo Sheriff's Office have not been able to determine any motive for the bombing. Sidney Drell, deputy director of SLAC, told PHYSICS TODAY, "We still have no information as to who did it or why. An investigation is still underway."

Damage to the accelerator was relatively limited. The accelerator tube itself, which is an underground housing 30 feet below the klystron gallery, was undamaged, as were the klystron tubes. The explosion damage was confined to electronics racks in the injector area and affected the main booster, sub booster, gun modulators, master oscillator, master trigger generator and the beam-knockout system. All but the beam-knockout system were repaired within a week.

SLAC scientists were able to turn on the accelerator beam for a trial run eight days after the explosion, and they reported that everything except the beam-knockout system worked perfectly. The beam-knockout system is used only in one type of experiment with K mesons; it shortens some of the beam pulses and spreads them out for accurate time-of-flight measurements.

In late December the beam was reported ready to be turned on as scheduled in January. The machine was programmed to be down during December for upgrading and modification.

Why did SLAC get off so lightly? "Given that he was there, he could have done more," said Drell. "He was in a sensitive part of the machine." The klystron tubes, housed in the gallery where the bomb exploded, cost as much as $10 000 each.

Stanford officials don't know if the bomb was placed by someone who belongs to the lab or an outsider. No classified work is done at SLAC; hence daytime access to the center is relatively open, but there are nighttime checks, and anyone who passes into the accelerator itself is checked at a gate that is guarded around the clock.

**Damage caused by the explosion** of two bombs in the klystron gallery of the Stanford Linear Accelerator Center is inspected. The accelerator itself was only slightly affected.

Stanford officials are relieved that the damage to the accelerator is so limited, but, according to SLAC director Wolfgang Panofsky, "One of the sad consequences of this event is that the cost of the repair must be borne by our regular funds at the expense of our research program." —SMH

## AEC reorganizes: New CTR division

The Atomic Energy Commission announced a major reorganization of its operating functions, which Chairman James R. Schlesinger described as "a move to provide a coherent management structure and to improve effectiveness." The changes include higher priority for controlled thermonuclear research, consolidation of AEC efforts for environment and safety and a reduction of the number of assistant general managers dealing with military and international affairs.

The nature of the reorganization is to group activities of the AEC with respect to their output, rather than their function. The work of the assistant general manager for reactor development, who formerly supervised all reactor work, has been split up; civilian and space reactors are now under the jurisdiction of the assistant general manager for energy and development programs, and military reactors come under the assistant general manager for national security.

Controlled thermonuclear research will now be administered as a division. Previously it was included in the division of research, headed by Paul W. McDaniel, and its head, Roy W. Gould, was assistant director of that division. Gould is now director of the division of controlled thermonuclear research. The reorganization comes shortly after special Joint Committee on Atomic Energy hearings on controlled fusion (see PHYSICS TODAY, January, page 101).

Another position created by the reorganization is that of assistant general manager for environment and safety. Julius H. Rubin, a personal assistant

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to the chairman, has been appointed to the post. He will have jurisdiction over the divisions of environmental affairs, operational safety, waste management and transportation. Schlesinger announced that the new assistant general manager will have "responsibility for coordinating AEC environmental and safety activities within Commission-owned facilities, including the preparation of environmental reports that present the impact on the environment by AEC operations for broad review."

A new division of applied technology has been formed, bringing together the Plowshare program of peaceful nuclear explosives, isotope development and non-nuclear technology programs. This division is included under the jurisdiction of the assistant general manager for energy and development programs, who also has responsibility for reactor development and technology, international programs, space nuclear systems, and nuclear education and training. The latter division was transferred from the jurisdiction of the assistant general manager of research.

Such reorganizations are relatively common, as AEC functions change with changing national priorities. They are usually done for more efficiency and effective grouping, according to a former AEC official. —SMH

## Two-part program for technician education

A Technician Education Development Program has been instituted by the National Science Foundation. One part of the program consists of grants to organizations, institutions or groups of technicians or scientists for curriculum development.

The other part of the program consists of direct aid to colleges. Initially, support will be restricted to those programs providing training in the physical sciences and engineering.

Information can be obtained from the Technician Education Development Program, Division of Undergraduate Education in Science, National Science Foundation, Washington, D.C. 20550.

## Societal applications of space work to be examined

A series of pilot programs to explore the application of aerospace technology by state and local governments in coping with the environmental, economic and societal problems, has been funded by the National Science Foundation. The six projects include placement of scientists and engineers in decision-making positions, a study of the transferability of displaced scientists and engineers to other areas of the economy, the establishment of science and technology promotion activities by the states, development of a program to provide county engineering services and analysis of manpower needs at the local level. The awards total $309 000.

## Emory University to retrain space scientists

The National Science Foundation has awarded a $51 000 grant to Emory University in Atlanta, Ga. for an experimental program to retrain former defense–aerospace scientists and technologists into research on societal problems. The project, which will focus on research in public-service areas such as waste disposal, health care, transportation and water pollution, will team up an unemployed scientist or technologist with a professor.

Twelve thousand dollars in support of the project has been pledged by citizens of Cobb County, Ga., who have joined with Emory University in developing this program.

## Ultraviolet star catalog coming from Smithsonian

The first catalog of the stars as they appear in ultraviolet light will soon be published by the Smithsonian Astrophysical Observatory, according to Fred L. Whipple, observatory director.

More than 4500 of the 8568 ultraviolet television pictures received by Project Celescope, the Smithsonian experiment aboard OAO-II (Orbiting Astronomical Observatory) were used to make up the catalog.

The catalog, which contains both uv and earth-based data on some 5000 stars, will be placed on tape at the National Space Science Data Center at NASA's Goddard Space Flight Center in early 1972. Tape copies will then be available. A printed version of the catalog based on all of the usable data (7778 pictures) is scheduled to be offered in the fall of 1972.

## Support available for work and travel abroad

The National Science Foundation is offering foreign-currency awards for scientific research, science education and related activities in countries where costs will be payable in the currencies of Burma, Guinea, India, Morocco, Pakistan, Poland, Tunisia, the United Arab Republic or Yugoslavia. Support is available for collaborative research under the direction of co-principal investigators in the US and the host country, the appointment of a visiting American scientist to a foreign institution, maintenance and advancement of scientific activities in the countries of interest, research and training of American scientists and students in the host countries and international travel for meeting participation.

## Space-science board urges outer-planet exploration

Exploration of the outer planets was given high priority in a report recently published by a study group of the Space Science Board of the National Academy of Sciences—National Research Council. The report, *Outer Planets Exploration 1972–1985*, calls exploration of the planets beyond Mars "one of the major objectives of space science in this decade." The group was made up of leading space scientists and chaired by Charles H. Townes.

The report offers suggestions for exploration of the outer planets according to various funding levels. Grand Tour missions for exploration of the outer plants can be most successfully accomplished with Thermoelectric Outer Planet Spacecraft, according to the report. The TOPS system is matched to the requirements of exploration beyond Saturn. The report recommends that TOPS-type spacecraft be used in a series of four launches in the late 1970's. Two of these should include entry probes to make measurements of planetary atmospheres.

For exploration of Jupiter and Saturn, modified Pioneer-type spacecraft will be adequate. The report asks for maintenance of a program of exploration of the two planets with these craft at a launch rate of about one every two years, whether or not funds are found for TOPS. The study group asked that at least two Pioneer-type spacecraft at-