

Johnson Budget Holds Science To A 'Cost-of-Living' Raise

Science portions of the federal budget for fiscal 1970, now on the Capitol Hill operating table, barely keep up with the rising cost of research. Designed to produce a surplus of \$3400 million, the budget was the last submitted by President Johnson. By the end of January the Nixon administration had not indicated what changes it might seek in the research and development categories.

Total obligations for R and D in the year starting 1 July come to \$17 100 million, up from this year's estimated \$16 800. Research obligations would rise from an estimated \$5300 million this year to \$5500 million in 1970. Support of research in colleges and universities would rise \$63 million to \$1571 million.

Although its total budget continues to decline, the National Aeronautics and Space Administration has the most research money in the 1970 budget. Next is the Defense Department, followed by Health, Education and Welfare and then the Atomic Energy Commission and the National Science Foundation.

NASA has budgeted \$351 million for space sciences out of a total research budget of \$1491 million. Of this, \$101 million will be spent in colleges and universities, a drop of \$18 million from the estimated total for fiscal 1969. Broken down by program, the NASA budget includes \$174.6 million for planetary exploration, 76.4 million for astronomy and 62 million for space physics.

Defense research spending will be up \$76 million to \$1376 million. Increases are in the areas of boundary-layer turbulence effects on aircraft, propulsion and explosive chemistry, superconductivity, electrooptics, information processing, acoustics and oceanography.

AEC research plans include authorization of \$102 million for the Batavia accelerator, with \$20 million to be spent during the fiscal year. If approved by Congress, this amount would allow completion on schedule. \$5 million is budgeted to continue work on the Los Alamos Meson Physics Facility.

RESONANCES

The Chicago meeting question has gone to a vote. Requests from more than 700 members led the American Physical Society Council to reverse a previous decision and poll the membership; results will be advisory, not binding. The American Association of Physics Teachers is conducting a similar vote. Deadline for returning ballots was to be in early April.

President Nixon released another \$10 million to NSF, saying the Johnson administration had made a "serious error" in cutting funds so severely. Lee DuBridge said many institutions had been forced to make "extremely dangerous" incursions into their endowments. The Nixon action 5 Feb. raises the fiscal 1969 expenditure ceiling to \$490 million.

The President underlined his support for science a week later in a message accompanying a National Science Board report to Congress on financing graduate education. "I emphasize here again that education in general and scientific development in particular will be among the highest priorities in this Administration," he said.

Research stoppages were planned for March 4 at MIT and other universities across the country. Scientists were asked to stop work for a day to discuss the roles of government and science. The organizers are concerned over what they consider to be misuse of science.

The total AEC research budget is \$437 million; of the \$16 million increase, \$11 million is for physics. A program breakdown shows \$242.9 million for high-energy physics and \$184.3 million for other physical research.

NSF would return to its 1968 level of about \$500 million under the Johnson budget. This was the amount requested for the current fiscal year; Congress cut it by an unprecedented 20%. The budgeted amount for project support is up nearly \$20 million to \$197 million; that for institutional support up \$33 million to \$74 million. Individual items include \$3 million for resurfacing the radio telescope at Arecibo.

Nearly Half Of All Graduate Students Eligible For Draft

Almost half of all first and second-year physics graduate students are eligible for the draft. High draft calls in the coming months, employing a policy of calling the oldest men first, are expected to have major impact on graduate-school populations.

National Bureau of Standards obligations are up \$4 million in the new budget. Some of this money could pay for a year of the metric study that Congress approved — but did not fund — in 1968.

Marine research, funds for which are spread through a dozen departments and agencies, is up \$56 million to \$528 million. Another \$9 million goes to the Coast Guard for its ocean data buoy project.

No provision is made in the budget for the civilian supersonic transport program. President Nixon was left with the decision, based in part on a new design for the plane submitted in January.

The Scientific Manpower Commission surveyed graduate science departments last fall. Of 192 PhD-granting physics departments surveyed, 108 responded with data on 2635 first and second-year students. The results: 1070 were draft liable. Another 441 students

were excluded; they were foreign nationals not subject to the draft.

Draft calls fell under 20 000 a month during the last six months of 1968. The calls for January, February and March of this year, however, were 28 000, 33 000 and 33 700 respectively. They will remain high at least through June as the Selective Service System meets its quota of 255 000 in fiscal year 1969.

Mrs Betty Vetter, commission ex-

ecutive secretary, summarized the results this way:

"A substantial loss of current first and second-year graduate students inevitably will reduce the size of advanced PhD-candidate classes next year and in the two years following; and lead to a serious reduction in new PhD-trained professionals available to serve the nation's needs during the early 1970's."

She feels that the impact of the loss of deferment for first and second-year

graduate students already has been felt. In the 1237 graduate departments in all sciences that responded to her study, about 4000 students accepted enrollment and then did not show up. Department chairmen estimated that a quarter of these entered military service instead. 60% of the department chairmen said their September 1968 enrollments were lower than they would have expected had there been no change in draft rules or in research support.

Edward Condon: A Physicist Never Afraid Of A Fight

Edward U. Condon's office, perched on the top floor of the tallest building on the University of Colorado campus, gives a sweeping view of Rocky Mountains to the west and Great Plains to the east. But for much of the last two years, Condon's thoughts and scientific energies have been directed straight up. As head of a \$496 000 Air Force-sponsored study, Condon directed a team of 37 experts looking into unidentified flying objects.

The question: Is continued study of so-called flying-saucer sightings warranted for their probable value to pure science? The answer (in nearly 1000 pages): No. The Air Force had already concluded long ago that UFOs do not represent a security hazard.

Last fall, long before the report was published, *PHYSICS TODAY* interviewed the man behind the report. Condon, now 66, could well rest on his scientific laurels. Instead he has added the UFO study to a list of activities that began about the time quantum mechanics was launched. He received his PhD

from the University of California at Berkeley in 1926, where he had also done his undergraduate work. Condon spent the next year as an international fellow at the then hotbeds of theoretical activity, Göttingen and Munich. Then he spent a year each at Princeton and Minnesota before settling in at Princeton as associate professor of physics.

Condon joined the Westinghouse Electric Corp in 1937 as associate director of research, leaving that post in 1945 when President Truman appointed him director of the National Bureau of Standards. In 1951 he rejoined industry as director of research and development for the Corning Glass Works, for which he still does consulting work. From 1956 to 1963 he was professor at Washington University, St Louis. Since then Condon has been a professor at the University of Colorado and a fellow of the Joint Institute for Laboratory Astrophysics.

During the Second World War Condon served on the committees that es-

tablished the Jet Propulsion Laboratory at the California Institute of Technology and the atomic-bomb development program. He headed Westinghouse radar research and also directed the Lawrence Radiation Laboratory theoretical division. In 1946 he was scientific adviser to the Senate committee which handled the legislation that established the Atomic Energy Commission.

Condon has served as president of the American Physical Society (1946), of the American Association of Physics Teachers (1964), and of the American Association for the Advancement of Science (1953). He was editor of *Reviews of Modern Physics* from 1957 through 1968.

His work has won the admiration of specialists in atomic and molecular spectra, quantum mechanics, nuclear physics, microwaves and solid-state physics. His book, *Theory of Atomic Spectra*, written with G. H. Shortley, has been a classic since 1935.

Condon also wrote, with P. M. Morse,

