

state & society

Two labs feel impact as Air Force cuts in-house research

As part of a new Defense Department policy to increase the proportion of research being supported by contracts, the Air Force is reducing its amount of in-house research. At the same time plans to shuffle scientists between Air Force laboratories and to reduce their numbers has caused great concern in the communities affected. Although recently some of these plans have been rescinded, two laboratories are still feeling the impact—the Aerospace Research Laboratories at Wright-Patterson Air Force Base in Dayton, Ohio, which has been "disestablished," and the Air Force Cambridge Research Laboratories at Hanscom Air Force Base in Bedford, Mass., where staff members fear a major reduction in force and a reorganization.

In the summer of 1974 a special study group was established, under Major General Kenneth R. Chapman, to see how the Air Force should use its own laboratories. Their report, issued in August 1974, recommended "that the Air Force should terminate most of its in-house 6.1 research programs at a logical point in these programs." In-house research was centered largely at ARL and AFCRL (AFCRL also has a large in-house program in 6.2 exploratory development); these labs specialized in physics, geophysics, chemistry and electronics. The report stressed that contract research allows greater flexibility. At the same time, however, the Chapman report noted that all 13 Air Force laboratories were of acceptable quality and reaffirmed that they should con-

tinue to be available as technical resources.

The Chapman report also recommended that "the Air Force should phase into the mode of acquiring most of its basic needs from outside sources." This was implemented in October 1974, when Air Force Secretary John L. McLucas (a physicist) issued a memorandum advocating a shift "at a reasonable pace" from predominantly support of in-house activities to predominantly outside university support. He also advocated that research funding in fiscal year 1976 should be at least as great as the previous year.

Moves announced. The following month, on 22 November, the Air Force announced that ARL would cease to exist, with some groups within the lab assigned elsewhere. Of the 1050 people at AFCRL, 250 people, mostly electronics specialists, would be transferred to a new Command, Control and Communications Laboratory at Hanscom. Another 600, those working mainly in geophysics, would be transferred to Kirtland Air Force Base in Albuquerque, New Mexico, to form an Air Force Geophysical Laboratory. The deposition of the remaining 200 people was unclear. A corollary move was that parts of the Rome Air Development Center at Griffiss Air Force Base in Rome, New York, were to be moved to Hanscom and Wright-Patterson.

At the Aerospace Research Laboratories (which employed 193 persons in June), most of the roughly 60 staff scientists were working in chemistry, aero-



MCLUCAS

dynamics, materials and statistics. There were 25 civilian physicists and 12 military physicists. At Air Force Cambridge Research Laboratories there were 600 with technical degrees, 175 of whom had PhD's (mostly in physics). The staff specialized in geophysics and electronics. Of the physicists, 285 were civilians and 15 were military.

[As of August 1974 the Air Force had 930 civilian physicists (including those with bachelor's) and a similar number in the military. Among the civilians, 90% work in the Air Force Systems Command, which encompasses laboratories and product divisions. Within

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Andrei Sakharov wins Nobel Peace Prize

The 1975 Nobel Peace Prize has been awarded to a Soviet theoretical physicist, Andrei Sakharov. Although he was one of the key figures in the development of the Soviet hydrogen bomb, Sakharov in recent years has devoted most of his time to speaking out in favor of human rights, justice and the cause of peace. (He does, however, continue to do physics. Earlier this year he published a paper in *JETP Letters* in which he estimated the masses of mesons and baryons with charm.)

The five-member award committee, established by the Norwegian parlia-

ment, said "Andrei Dimitrievich Sakharov has addressed his message of peace and justice to all peoples of the world. For him it is a fundamental principle that world peace can have no lasting value unless it is founded on respect for the individual human being in society.

"Uncompromisingly and forcefully, Sakharov has fought not only against the abuse of power and violations of human dignity in all its forms, but he has with equal vigor fought for the ideal of a state founded on the principle of justice for all. In a convincing fashion

Sakharov has emphasized that the inviolable rights of man can serve as the only sure foundation for a genuine and long-lasting system of international cooperation. In this manner he has succeeded very effectively, and under trying conditions, in reinforcing respect for such values as all true friends of peace are anxious to support.

"Andrei Sakharov is a firm believer in the brotherhood of man, in genuine coexistence, as the only way to save mankind. Sakharov has warned against the dangers connected with a bogus détente, based on wishful thinking.

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Federal support

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years 1974, 1975 and 1976. These figures have not been adjusted for inflation. Note that Defense Department support has remained essentially constant in actual dollars.

Table 3 presents basic-research support for astronomy by Federal agency for fiscal years 1974, 1975 and 1976.

—GBL

Table 3. Major Federal Agency Contributions to Astronomy Basic Research

Agency	FY 74	FY 75	FY 76
		(est.) (\$ mil- lions)	(est.) (\$ mil- lions)
NASA	161	202	215
NSF	30	32	37
DOD	7	7	8
Smithsonian	4	4	5
All other	1	1	0
Total	203	246	265

Source: *NSF Federal Funds for Research, Development, and Other Scientific Activities*, vol. 24, to be published.

Air Force

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search, exploratory development and advanced development) in the office of Walter LaBerge, assistant secretary of the Air Force for Research and Development. Beam noted that no reductions in force have been announced anywhere in the Air Force laboratories. However, every laboratory has been instructed that they should "husband their vacancies in anticipation of personnel reductions." Beam says it is hoped that because of attrition the number of staff who actually are forced to leave will be small. Secretary of Defense James Schlesinger is pushing all three services to reduce their civilian personnel. The Director of Defense Research and Engineering, Malcolm Currie, has assigned such reductions to each service. For the Air Force laboratories, Beam says, the reduction is a few hundred.

It is still an open issue for Air Force Cambridge Research Laboratories as to how it will be structured, Beam told us, although there is a desire to strengthen the command, control and communications functions.

In fiscal year 1976, the President has proposed that \$82 million be spent for Air Force research (see table) out of \$3.9 billion for Air Force Research, De-

velopment, Test and Evaluation. In FY 1975 the proportion of research done was 40% out-of-house and 60% in-house. For FY 1976, it is proposed to change the proportion to 50% for each activity. In the long-term (although probably not by FY 1977) the Air Force expects to evolve to 70% done out-of-house and 30% in-house. Beam points out that the Air Force is simply returning to the situation of FY 1969, when the 70-30 ratio also applied.

The Air Force move is part of a Defense Department-wide move instituted about a year ago by the Director of Defense Research and Engineering, who instructed all three services to institute and maintain a 70-30 ratio for the entire laboratory program, which includes research (6.1), exploratory development (6.2), and advanced development (6.3). The Director's office also encouraged the services to increase their 6.1 research budgets for the next three to four years by 10% plus the inflationary increase; for exploratory development (6.2) the increase was to be 5% plus the inflationary increase.

Beginning in this fiscal year, all Air Force research (in and out-of-house) is being managed by its Office of Scientific Research, headed by William Lehmann. Prior to that, OSR only administered about \$23 million of the \$74 million spent. This \$23 million was spent on out-of-house research, 78% of which went to universities. However, management of the Air Force laboratories remains the responsibility of the individual laboratory director. Beam maintains that the amount of research being done at AFCRL will not change, although some work previously categorized as 6.1 research will now be categorized as 6.2 exploratory development. The Air Force as a whole plans to have 7% of its laboratory personnel involved in research.

Beam points out that if one of the services knows it will need to work in a field for 10-20 years, it should undoubtedly set up a research laboratory. On the other hand, if there is an urgent, immediate need for research, perhaps in-house research is not the solution.

Meanwhile Air Force scientists are expressing concern about the future of in-house research. They argue that many of the best scientists will quit, leaving the Air Force without sufficient capability to evaluate its out-of-house research.

—GBL

Sakharov

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ing and illusions. As a nuclear physicist he has, with his special insight and sense of responsibility, been able to speak out against the dangers inherent in the armaments race between states."



SAKHAROV

Sakharov has written that in the spring of 1948, he began work on research connected with a thermonuclear weapon and that he became the author or co-author of several key ideas. His position, Sakharov wrote, caused him to reflect in general terms on the problems of thermonuclear war and its aftermath. In 1968 Sakharov published a book, *Progress, Coexistence and Intellectual Freedom*, (PHYSICS TODAY, May 1969, page 77) in which he argued in favor of a rapprochement of the socialist and capitalist systems.

Subsequently Sakharov continued speaking out on all manner of issues. In 1973 National Academy of Sciences president Philip Handler warned the president of the Soviet Academy of Sciences, then Mstislav Keldysh, that US-USSR scientific cooperation could be jeopardized by continued harassment of Sakharov (PHYSICS TODAY, November 1973, page 69). Sakharov is a full member of the Soviet Academy of Sciences.

The Nobel Peace Prize, worth \$140 000 this year, is the first to go to a Soviet citizen. Sakharov is said to be planning to attend the award ceremonies in Oslo on 10 December if the Soviet authorities permit him to go.

in brief

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An asteroid has been named after Alan T. Waterman, first director of the NSF.