

diffusers will reduce the focusing effects—sounds will be scattered instead of concentrated. The use of sound absorbing materials on either the upper or lower surfaces of the diffusers will make it possible to reduce the reverberation time of the hall at certain frequencies, notably about 500 Hz.

The installation of the new system is expected to be complete by January 8, when the BBC Symphony Orchestra is to give a concert as a test of the changed acoustics. After this there will be several weeks of "tuning", during which time everyone concerned with the scheme is hoping for tolerance from performers and audiences.

## SPACE

### ELDO through the Looking Glass

A CURIOUS and not at all healthy position has now been reached in ELDO affairs. On December 19 and 20 in Paris, the ELDO council had its last chance to agree to the 1969 budget. Agreement was threatened by two possibilities: first, that Britain would insist on its proposal, made at the Bonn European Space Conference (ESC) (see *Nature*, November 15 *et seq.*), to make a substantial increase in support of European space relating to applications satellites dependent on being released from its two years' financial obligation to ELDO; and second, that the hard-won but not unanimous accommodation reached by the five continental ELDO ministers on November 11 would be punctured by Italy's refusal of support when it came up for the vote. Neither of these upsets took place at the end-of-the-year meeting, but ELDO will, nevertheless, enter 1969 without a budget, with small prospect of obtaining one for some time and with a thoroughly unpropitious outlook.

Britain abstained from the Bonn meeting accommodation agreement. Now, however, it seems that the British Government has concluded that the terms of the November 11 agreement amount to a new programme which cannot be considered merely a modification of the basic agreement on which the present ELDO programme rests. (In particular it eliminates any test of a geostationary satellite from the programme.)

"In evidence of the UK Government's unbounded generosity and European spirit" (as one UK official put it), the British Government, through its officials at the council meeting, declared itself prepared to help its continental partners towards their launcher aspirations by providing a £10 million subsidy for ELDO's 1969 budget. It was made clear that no further money would be forthcoming from Britain after 1969.

Italy also made its position clear at the end-of-the-year council meeting. It took a similar view to that of Britain of the November 11 plan, but was not prepared to support the 1969 budget. Indeed, in the discussion that followed, it became apparent that the only country "emphatically willing" to support ELDO's 1969 budget was the UK. The paradoxical position left at the end of the year is that Britain, which wishes to get shot of ELDO and is unconvinced by the arguments for an independent European launcher capability, is the only ELDO member prepared to support next year's budget. The organization will thus start next year without an approved budget—and it may be many months before it has one. There are institutional provisions for "tick-over money" in the meantime. The impasse calls for

another meeting of ELDO ministers, but when this may be possible is not at all clear.

## GEOPHYSICS

### Alaska feels the Freeze

AT the Geophysical Institute of the University of Alaska, renowned for its research on solar-terrestrial relations, cold winds from Washington are feared more than the earthquakes, floods and Arctic climate which Alaska experiences. This is the message of the institute's annual report for 1967-68, now published. The report presents in microcosm the effects of the financial stringency overtaking science in the United States. So far, the institute's expenditure has been cut from its 1966 peak of \$3 million to \$2.65 million in 1968, and there are fears of worse to come. To the outside observer, the most obvious effect is a drastic cut in the number of technical support staff available to assist in the scientific work of the institute. The total staff is now roughly 125, compared with the 1966 peak of more than 200, while during the same period the numbers of scientific staff and graduate students have remained more or less the same. Naturally enough, the institute has been able to start fewer new projects during the year than it would have liked, and the outlook is black for some of the more expensive work which would have been started in the near future. Plans for a big incoherent scatter radar, the subject of a joint feasibility study with the Stanford Research Institute, may well be the first to suffer, in spite of the importance of such a radar in the auroral zone.

The geophysicists at College are luckier than some, however. In 1970 they will be housed in a new building, at a cost of more than \$4 million, with the help of grants from the National Science Foundation, the US Office of Education and by means of bond issues. (Because the National Aeronautics and Space Administration could not afford to contribute, one floor of the seven-storey building will have to be left out.) By March next year an Alaskan rocket range should be available. Launching pads are to be at Chatanika, 30 miles north of Fairbanks, and will eventually be able to fire rockets up to Nike-Tomahawk size.

Most of the financial support for the institute comes from Federal sources, and the shortage of funds has been provoked by cuts in military spending. The US Army now spends next to nothing at the institute, for example. But support from NASA and the National Science Foundation has been keeping the wolf from the door, which is why the rough handling which the National Science Foundation budget has received in Congress is causing sleepless nights at College. The report expresses concern about the disaffection which Congress seems to have for basic science, and says that the danger of concentrating on research, which is likely to prove economically beneficial at the expense of basic science, is that of putting the cart before the horse, and giving the cart a kick.

The Geophysical Institute is nevertheless finding it prudent to go some of the way with the politicians. Because of its site in the auroral zone, aeronomy is the institute's chief love, but geophysical studies more likely to prove of interest to the development of Alaska's natural resources are to play an increasingly important part. Alaska is a superb laboratory for this kind of research.