commercial activity and financed by a budget which would ensure the total autonomy and freedom of scientific research. Research, he said, should not be "cramped" by government plans. Industrial research should be carried out in the research institutes of the ministries concerned (a network of such institutes does exist), or contracted out to academic institutes; but the overall direction of research by the government should cease.

In effect, Solidarność is seeking a major change in Poland's science policy. Since the early 1970s, research has been organized and funded on the basis of a complex hierarchy of "problems" (governmental, key, interdepartmental, departmental and branch problems) geared to the needs of the national economy. Research on a given problem will generally be carried out at many institutes simultaneously, and problems of coordination and control, including the interface between the academic and governmental sides, have led to a proliferation of bureaucracy. The establishment view, however, as represented by Dr Ignacy Malecki, director of the Institute of Fundamental Problems of Technology of the Polish Academy of Sciences, is that the problem structure is not in itself a bad thing. Dr Malecki, a member of a special commission looking into the management of the "problem" system, said that the consensus was that the system should stay, although trimmed of its bureaucracy. He added that in his opinion there was room for improvement in financing. **Vera Rich**

Science council

Mess about money

The UK Science Research Council is in a financial mess. But nobody can say how serious the trouble is, because figures and tables released in the 1979–80 annual report last week are wrong. The SRC now confirms the misuse of a computer program, as a result of which some research grants which have ceased have been displayed as current. A claim in the report that grant payments had increased by 72 per cent since the previous year took SRC officials four working days to disown once the inconsistencies had been pointed out to them.

Behind this is a more serious problem — what chairman Sir Geoffrey Allen last week called a "hiccup" in the council's cash flow. He and his officials are being coy about the size of this financial spasm. Some say that the council must find at least £10 million from within its current budget to pay for excesses last year in grant-giving by the Science Board, responsible for small science and neutron and synchrotron radiation physics, thus shedding doubt on claims earlier this year that the Science Board was turning away "alpha quality" grant applications for lack of cash.

The anomaly dates back to a success: that of Mrs Shirley Williams, Secretary of State for Education and Science in the last government, in convincing her Cabinet colleagues that Britain should spend more on science. Uniquely, she brought in research council heads to convince other ministers that basic science was important — and in late 1978 won another £47 million for the councils, of which SRC would have received £33 million, payable from 1979–80 to 1982–83. Then came the new government; spending cuts, announced in the budget of June 1979, lopped off most of Mrs Williams's gift.

But well before the election she had privately warned the council chairmen to beware of Tory zeal. In case the government changed, she hinted, it would be wise to spend the money soon. In April 1979, SRC sent out a circular requesting applications for grants to buy equipment. £37 million of applications flooded in; SRC panels thought £20 million of them were deserving, and committed themselves to £7.5 million. In the event, the council received only £5 million of the Williams money.

The flood of applications, however, continued, and not just for equipment. The universities had seen the tap turned on after years of drought. It was against this background that "alpha quality" applications had to be turned down. Even so, the boards over-committed themselves and now all are being asked to cut back by delaying grant renewals.

Other factors worsen the SRC's current financial picture. Universities are putting in their bills earlier than usual, because they too have cash flow problems; and the largest price of SRC construction work — the spallation neutron source at the Rutherford laboratory — is going ahead on time (the council had allowed for slippage).

The only light comes from the strong pound, which reduced the council's subscriptions — totalling £42 million a year — to international bodies such as the European centre for subnuclear physics (CERN) and the European Space Agency by about £7 million; and from the volcanic rock underneath the new Isaac Newton telescope house at La Palma in the Canaries. Engineers had overestimated the strength of the rock, and the foundations must be rebuilt, causing a six-month delay and pushing a £500,000 bill into next year.

Robert Walgate

Hardship everywhere

The Science Research Council's report for 1979–80 (HMSO, £7.10) is liberally spattered with references to the consequences of financial stringency, within a budget totalling £176 million. The budget last decreased 1 per cent in real terms in 1980–81, and will show a modest increase after that — but, says the report, new initiatives will be impossible without producing stagnation in favoured areas of the council's programme, or markedly reducing other programmes.

Nuclear physics is the most vulnerable of the big spenders — although contributions to CERN fell from £27.7 million in 1978–79 to £25.3 million in 1979–80 largely because of the stronger pound. The nuclear physics budget is not one of the "favoured areas" of the SRC's programme, and it has fallen a factor of two in real terms since 1975–76. It will fall again by 18 per cent this year, and another 9 per cent the year after, says the report, to £2 million below a "minimum programme"; but despite this the board sees LEP, the large electron positron ring that CERN plan, as its accelerator for the late 1980s, as its highest priority. It is "seeking council support" on this project. Meanwhile, equipment for the 30 MV Van de Graaff Nuclear Structure Facility under construction at Daresbury is to be further delayed.

X-rays and neutrons provided by the synchrotron radiation source at Daresbury, opened last week, and the Spallation Neutron Source under construction at the Rutherford Laboratory are threatened by lack of money to exploit them; and existing neutron sources will be run down. The high proportion of the Science Board's funds devoted to neutron scattering will fall after 1981–82, when the modernization programme at the Institut Laue-Langevin high flux reactor at Grenoble, in which the UK is a partner, is completed.

Computers. The SRC needs to find £8 million capital "over the next few years" to replace its central computers, and more if allowance is to be made for an increasing demand.

Research students supported by the SRC will continue to be a falling proportion of good graduates in science or engineering. In 1972, 46 per cent of such graduates, applying for SRC grants, were awarded them. In 1979–80 the proportion was 36 per cent, and now the number of grants must be held constant against an increase — for the next few years — of about 4 per cent a year in university output. But there should be a few more cooperative awards in science and education (CASE awards), designed to link students with industry as well as university. Even so, this council hopes to fund more in-service training.

Robert Walgate

Large space telescope

Delay means money

Washington

US astronomers have successfully persuaded the National Aeronautics and Space Administration (NASA) to request additional funds in next year's budget to ensure the successful development of scientific instruments due to fly on the space telescope.

Previously, scientists had complained

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