British science budget

More money will buy less

NEXT year's budget for British science is a disappointment, not least for the research councils. Planned provision for education and science in 1984-85, announced in the House of Commons last week by Sir Keith Joseph, Secretary of State for Education and Science, will increase by 4 per cent in cash terms, less than the inflation rate.

The science budget, out of which the five research councils receive most of their income, will be £549 million, 6 per cent more than in this financial year and £6.5 million more than was foreseen in the government's March expenditure white paper. But almost all the extra is earmarked to meet the cost of international subscriptions, which chiefly affects the Science and Engineering Research Council (SERC). Otherwise the budget remains roughly constant in real terms.

The recurrent grant to the universities channelled through the University Grants Committee is planned to be £1,265 million for the academic year 1984-85, a cash increase of 4.4 per cent over the current academic year.

The science budget will be divided between the research councils on the basis of recommendations by the Advisory Board for the Research Councils (ABRC) next month, when it will publish suggested allocations for 1984-85 and the two following years. But it is clear that Sir David Phillips, the council's chairman, has been largely unsuccessful in his bid for extra funds to pay for restructuring programmes planned for the Agricultural and Food Research Council (AFRC) and the Natural Environment Research Council (NERC).

ABRC had asked for £35 million above the £543 million originally planned for next year to allow for "the continuation and development of existing policies". Sir Keith was apparently unimpressed: apart from the £6 million offered for international subscriptions, his response was a paltry £0.5 million, to cover restructuring costs.

The changes planned for the Agricultural and Food Research Council, for example, will require about £5 million next year and twice that amount in the two following years. In 1985-86, there may be some shifting of this burden onto SERC and the Medical Research Council, but for next year at least, ABRC plans do not envisage any major shift of funds towards AFRC and NERC. The inescapable consequence is that both will have to indulge in some drastic pruning in their own institutes in order to meet commitments to maintain university-based research.

The Treasury, as expected, has accepted the principle that Britain must collaborate with other nations in "big science" projects. The question of how SERC is to meet the spiralling cost of subscriptions to organizations such as the European

Organization for Nuclear Research (CERN) and the European Space Agency (ESA) has been the subject of a special review by a departmental committee under the chairmanship of Miss J. Kelley, an Under-Secretary at the Treasury. While recognizing the Kelley recommendation as a small victory, some SERC council members are worried that the amount provided will still be inadequate. The value of sterling has fallen over the past year, while the cost of subscriptions based on gross domestic product has increased. As a result, current estimates are that SERC needs an extra £10 million.

The argument within SERC on the balance between "big" and "little" science will certainly be fuelled by the recognition that the council therefore appears likely to

face a cut in real terms of something like 2 per cent. It is already known that ABRC bids for funds for a British-led space programme and for more university grants have fallen on stony ground. As SERC's financial position was already precarious, some members now fear that SERC laboratories will have to close and staff be made redundant so as to pay for closures in the institutes of other research councils.

The universities' recurrent grant is a small reduction, in real terms, from the present year's total. This comparison, however, disguises the fact that this year's total was reduced by £24 million in July, because university restructuring was costing less than had been expected. Mr John Akker, general secretary of the Association of University Teachers, said last week that he was nevertheless relieved that the total will be enough so that compulsory redundancies should be avoidable in the year ahead.

Tim Beardsley

Testing laboratories

UK presses for agreement

"MADE in Britain" will once again be something to boast about if new government initiatives to be announced this week succeed. A major publicity campaign will be launched to persuade industrial companies to make more and better use of recognized engineering standards and quality assurance procedures in product design and manufacture.

The start of the campaign coincides with the government's response to a report published last year* by the Advisory Council for Applied Research and Development (ACARD) on the impact of technical standards and regulations on product design and international competition. ACARD found that the existing schemes of the British Standards Institution are patchily developed and under-used. Conformity is often claimed fraudulently, and British standards are not widely accepted overseas. Unlike most industrial countries, Britain has few government-supported certification and approval schemes (those that exist are mostly concerned with safety) and industry is consequently unused to operating within such frameworks.

ACARD concluded that, despite the provisions of the General Agreement on Tariffs and Trade and the Treaty of Rome, some foreign governments were at least acquiescing in allowing technical standards to be deployed as obstacles to free trade. ACARD urged that industry and government should introduce more certification and approval schemes, particularly for internationally tradeable products. It advised the government to establish a national accreditation scheme for certification and approval bodies, to operate some controlled national mark for quality. Most of ACARD's recommendations will be accepted and implemented by the

government.

The new initiative will try to convince industrial companies that exports can be improved by demonstrating conformity with local approval criteria. There is widespread ignorance and disregard of such guidelines in Britain, and the technical help for exporters offered by the British Standards Institution is over-priced and under-used. Smaller companies, in particular, often fail to take into account the technical requirements of overseas countries at a sufficiently early stage in the development of a product, so that expensive redesigning becomes necessary.

When a product does satisfy certification or approval requirements, manufacturers complain that overseas customers will not accept British laboratory reports, so tests have to be repeated — often at considerable expense — abroad. These complaints were the spur to a scheme which now accredits testing laboratories in Britain with a view to establishing wider recognition of their reports.

The International Laboratory Accreditation Conference (ILAC) has for a number of years been working towards greater international acceptance of test results, and at its meeting in Prague earlier this month the conference was told that a memorandum of understanding had been signed between the US National Bureau of Standards and the British National Physical Laboratory, providing for mutual recognition of their respective test laboratory accreditation schemes.

The British scheme, NATLAS, has been in operation for only two years but already covers more than 200 laboratories in the fields of mechanical, electrical, physical and chemical testing. In the United States, the equivalent scheme is the National Voluntary Accreditation Program

(NVLAP), which despite the plethora of certifying bodies is slowly becoming accepted throughout the country. Under the recent agreement, laboratories covered by the two schemes will recognize each other's reports and will recommend third parties to do likewise. Calibration certificates for measuring instruments are excluded from the memorandum, but may become recognized for certain quantities in which national measurement standards are deemed to be equivalent to specified accuracy.

Although nobody pretends that trade between Britain and the United States

will be greatly affected by the NATLAS/NVLAP agreement, the deal is seen as a significant pointer to future developments: Britain is already actively negotiating similar understandings with Australia and New Zealand. But many British manufacturers will really become interested only when comparable agreements are reached with West Germany, and, especially, France, which is held by many to have been particularly obstructive in the past.

Tim Beardsley

**Facing International Competition: The Impact on Product Design of Standards, Regulations, Certification and Approvals. ACARD, July 1982, HMSO.*

West German biotechnology

Labs fight shotgun marriage

A DISPUTE is simmering in West Germany over the recommendations on state-financed biotechnology made to the Federal Ministry of Research and Technology (BMFT) by a specially appointed commission. Two institutions are principally involved: the Gesellschaft für Biotechnologische Forschung (GBF) at Braunschweig-Stockheim and the Institut für Biotechnologie (IBT), part of the Jülich nuclear research establishment east of Cologne.

GBF evolved from a molecular biology research institute founded with the help of the Volkswagen Foundation in the 1960s to provide research materials for universities and Max-Planck Institutes. Since 1976, it has been financed 90 per cent by the federal government and 10 per cent by Lower Saxony, conducting research in biosynthesis, animal and plant cell culture and enzymology, but also being actively involved in education and process development. It is the home of the German collection of microorganisms and has a staff of 350 scientists, 10 departments and a budget of DM27 million (£7 million) a year.

IBT at Jülich is smaller, with a staff of 100 in three departments: microbiology, chemical engineering and algae. Its main focus is on enzymatic polysaccharide degradation, biocatalysis and biological water purification.

The commission was set up by BMFT, in part in recognition that West Germany lags behind the United States in this economically important area. BMFT has meanwhile decided to increase investment in biotechnology from DM63 million in 1983 to DM70 million in 1984. The commission's chief recommendation is that the two institutes should be amalgamated and that research support be orientated towards "special project" financing, on the grounds that it would be more flexible than institutional support.

Despite several important exceptions, the report criticizes the patchy standard of research at GBF. It says there is a lack of internal collaboration and recommends that GBF should be reformed into four departments: process development, enzyme

technology, microbiology and cell biology, and that plant cell culture and cellulose degradation should be dropped, as should the algal research at IBT.

The report also says there is "no meaningful future for GBF" without a radical reorganization designed to raise the scientific competence of the supervisory board, including more external members, and unless its part in the management, control of quality and direction of research and staffing is redefined and strengthened. The report goes on to say that the "healthy cores" of GBF and IBT should be concentrated in one institute at Braunschweig or, as a second best, that some GBF departments should be moved to Jülich, leaving a group of industrially-orientated projects, akin to those of a Fraunhofer organization, at Braunschweig.

Three-way negotiations (with BMFT) are going on, but first reactions at both institutes have been outspokenly negative. Each complains that the commission failed to publish details of the scientific assessments behind its conclusions. GBF points out that its total budget is equal merely to the electricity bill at the DESY high-energy physics laboratory at Hamburg and that, unlike the other eleven large research institutes, it has an income of DM1.3 million from licences and research. It also argues that the commercial potential of projects at GBF have been underestimated.

The departments at Jülich say that they would be used to revamp GBF in a way that jeopardizes their incontestable effectiveness and success and would destroy valuable academic and industrial links. They also feel that the research on algae which is aimed at water purification has been undervalued.

According to a BMFT estimate, total investment in biotechnology in West Germany is running at an annual DM300-500 million, some four-fifths of it in industry. A particular complaint at the two institutes is that a commission comprised 50 per cent of industrial representatives should advocate increased support for the "special project" system.

Sarah Tooze

Soviet spaceflight

Evacuation of Salyut begins

SOVIET cosmonauts Vladimir Lyakhov and Aleksandr Aleksandrov will be preparing to return to Earth "within a few days", Moscow radio announced last weekend. Mothballing of the Salyut station began on Sunday, and experimental material had been transferred to the Soyuz-T9 transporter.

This apparent commitment to bring the cosmonauts back aboard the Soyuz-T9 has confounded Baikonur-watchers who, for the past two months, have been predicting disaster, because the Soyuz-T9 has overrun by half as much again the 115-day safe working life accepted by the Soviet space planners. Since a replacement Soyuz craft blew up on the launch-pad on 26 September, there has been considerable alarmist speculation about how the two cosmonauts would return. But Mr Geoffrey Perry, of the group at Kettering School in England which has been monitoring the cosmonauts' conversations, has maintained throughout that the cosmonauts were never in any jeopardy, that their conversations with ground control have consistently reported everything normal and that his group had no evidence for or against the fuel leak of 7 September reported by *Aviation Week*.

The implication is that the 115-day safe working life of the older Soyuz model is no longer relevant for the improved Soyuz-T. In contrast with the earlier Soyuz, which used hydrogen peroxide as a separate propellant for the reaction control system, the Soyuz-T uses the same fuel system (hydrazine plus a nitrogen oxide, tetroxide) for both the main propulsion system and the control thrusters. This eliminates a major factor in calculating the lifetime of the on-board consumables — the long-term storage of hydrogen peroxide. It also gives a high degree of manoeuvrability, "especially in unforeseen circumstances" according to Soviet sources.

The outstanding problem now is to identify the source of the rumours of impending disaster which have been prominent in the Western press during the past two months. *Aviation Week*, although the source of the reported fuel leak, now seems to have tacitly disclaimed the scare by noting in its most recent issue that flight controller Aleksei Eliseev is optimistic about a successful return. Unfounded disaster reports have bedevilled the Soviet space programme for more than twenty years, and seem an unavoidable spin-off from the secrecy with which that programme has always been surrounded. It is ironic, just when a certain degree of openness about Soviet space plans and facilities is becoming apparent, that yet another such rumour should receive so much attention in the West.

Vera Rich