

that significant cost and schedule overruns with the 2.4-metre telescope, whose planned 1984 launch from the space shuttle will probably have to be postponed for up to a year, were leading the agency to cut corners in developing and testing the instrumentation thus prejudicing some of the scientific experiments.

For example, no reserve funds to meet unexpected difficulties had been included in the budget of the Goddard Space Flight Center, which is responsible for the development of the scientific instruments which will be located at the telescope's focal plane.

Partly as a result of this delay, caused chiefly by greater than expected technical difficulties in various parts of the project, cost overruns could amount to \$50-\$100 million, compared with an initial estimate of \$435-\$470 million.

The space telescope is only one of a growing list of NASA projects in the same trouble. In some cases, such as the Galileo mission to Jupiter, and the solar polar mission — delayed two years — these have been the direct result of problems with the space shuttle itself.

Ariane sells three

Washington

Intelsat — the international telecommunications satellite organization — has given a major boost to European space efforts with its decision to launch three of its nine satellite global communication systems from the French-built Ariane rocket.

Intelsat had originally hoped to launch the satellites from the National Aeronautics and Space Administration (NASA)'s space shuttle. Delays in the shuttle development programme, however, have caused concern about whether the launcher will be available in time. (Even after the first launch next year, it is uncertain whether NASA will be able to keep up its promised schedule of launches.)

Ariane is also experiencing problems, and following the failure of a test flight earlier this year there is no guarantee that it will be available for the Intelsat launches, which would be the sixth, seventh and eighth in the nine-satellite, \$300 million system. In this case, Intelsat would use Atlas Centaur rockets, which because of the shuttle delays are already being used for the first five satellite launches, with the first launch due to take place next month.

The launch vehicle for the final satellite in the series has not yet been decided, because Centaur launches are likely to be considerably more expensive than the shuttle. When all satellites are in orbit, the system will double the number of international telephone calls and television transmissions that can be handled simultaneously.

David Dickson

But in the case of the space telescope, there have been separate problems with each of the three parts of the project: the scientific instrumentation, the optical telescope assembly and the support system module.

In the case of the scientific instrumentation there have been what one scientist describes as a not unusual set of technical problems, extra costs caused by delays and a few "minor screw-ups" in all instruments except the high-speed photometer.

It is a similar story with Perkin-Elmer, which was awarded a \$58.5 million contract for the optical telescope assembly and which has also had difficulty in keeping work on schedule, finding that it lacked sufficient manpower for design needs and that a computer-controlled method for grinding one of the two optical mirrors was not as successful as had been hoped.

More recently, the other main contractor, Lockheed, awarded a \$73 million contract for the support systems module, reported that revised cost estimates were substantially larger than those originally submitted.

Both NASA officials and staff members of the relevant congressional oversight committees are looking closely for the reasons behind the delays. In particular, Congress wants to know whether tight limits on personnel have reduced the agency's ability to review contracts awarded to private companies.

In Europe, where several companies are working on apparatus to be included on the telescope, a delayed launch will relieve pressure on schedules that were said to be getting tight.

The delay seems unlikely, however, to have a significant impact on plans for a space telescope institute, which will be responsible for analysing the data received from the telescope.

NASA is expected to announce within the next few weeks the site that it has selected for the institute. Of the original four proposals submitted earlier this year, two remain in the running. One is from the Association of Universities for Research in Astronomy (AURA), which proposes building the institute at Johns Hopkins University in Baltimore; the other is a proposal from Associated Universities Inc. to locate the institute at Princeton University.

Although both proposals are accepted by astronomers as having strong merits, the balance may have been swung in favour of Princeton by a recent federal indictment against Computer Sciences Corporation (CSC). This company, which AURA intended to use to help develop the software for handling telescope data, is being indicted on charge of fraud and racketeering arising from a 1972 time-sharing contract.

AURA officials pointed out last week, however, that the section of CSC which has

been indicted is completely separate from that which would help operate their proposed space telescope institute, and hope that this will insulate them from any action which the federal government might take against the company. The General Services Administration (GSA), against which the frauds are said to have been carried out, has suspended the company from acquiring new business from the agency until a trial which is expected to open in January. The action by the GSA could affect 200 federal users of CSC's Infonet time-sharing system.

David Dickson

Biotechnology

Celltech set up

The formation of Celltech Limited, the first British company predominantly concerned with the exploitation of biotechnology, was completed on 6 November, according to an announcement earlier this week from the National Enterprise Board (NEB), the public corporation supported with public funds. The board will be the largest shareholder in the company, with 44 per cent of the shares. The remainder of the equity will be divided equally between the four remaining shareholders, the Prudential Assurance Company, the Midland Bank, British and Commonwealth Shipping and TDC (a venture capital investment trust, itself an offshoot of Finance for Industry, a joint venture between the clearing banks and the British government).

The shareholders have already subscribed the first tranche of the £12 million that will serve as the initial capital base of the company. The board of the company will chiefly be representative of the principal shareholders, with Mr G. Jackson of Philips Electronics Limited nominated by the National Enterprise Board (NEB), but will also include Dr J. L. Gowans, the secretary of the Medical Research Council, and Sir Michael Stoker, until recently director of the Imperial Cancer Research Fund Laboratories and foreign secretary of the Royal Society. Sir Michael will also be the chairman of the company's advisory board, to be known as the Science Council.

The council will also have as a member Dr Sydney Brenner, director of the MRC Laboratory for Molecular Biology at Cambridge, who has been involved with the planning of Celltech from the beginning. Other members of the council are to be announced in the near future.

Apart from the managing director of the company, Mr S. Fairtlough, the director of research and development will be Dr N. Carey, at present director of research at G. D. Searle Limited. Dr Caroline Vaughn, like Mr Fairtlough at present on the staff of the board, will be director of marketing. Other members of the staff of the company have yet to be appointed. The chairman of the company will be Mr Wynn Denman, a

director of British and Commonwealth Shipping.

The announcement of the setting up of the new company said that Celltech has reached an agreement with the Medical Research Council (MRC) that provides a "framework" within which the company will have access to research carried out in the council's laboratories. It has also come to an arrangement with the National Research Development Corporation, the public corporation which is the principal repository of patent rights arising from research carried out in university and public laboratories in the United Kingdom. Plainly the negotiation of these agreements, no details of which have been made public, has taken up some of the time that has elapsed since the Celltech project was first announced nearly four months ago (see *Nature* 24 July).

Veal hormones

Total ban proposed

Brussels

The Commission of the European Economic (EEC) has lost no time in taking steps to ban the use of all natural and artificial hormones in livestock — a draft regulation is due to come into effect on 1 January 1981. At the Council of EEC Agricultural Ministers on 30 September the Commission promised to respond speedily to a request to draw up proposals on the use of hormones and anabolic steroids. This week's Agricultural Council meeting on 10 and 11 November was to be given an account of the Commission's proposals, but will hardly have had a chance to digest them.

Although the ministers have committed themselves to speedy action there are several hurdles ahead of them. The proposals are far reaching — covering all meats intended for human consumption (veal, pork, beef and fowl). The only exception is for the use of natural hormones in therapeutic treatment, which must be carried out under strict supervision. Furthermore, the marketing of animals or carcasses containing residues above a certain level (yet to be specified) will also be prohibited.

None of this will be easy to enforce. The commission still has to devise a foolproof way of controlling the supply of hormones to vets, ways of monitoring animals from the farm to the abattoir, and ways of checking meat on retail sale. These controls are bound to involve a system of identification so that the animal's origin can be traced if the regulations are broken.

The commission's proposals will be particularly welcome in Italy, where in September a magistrate imposed a nationwide ban on veal sales and the sale of twenty-two brands of baby foods containing veal was suspended. The British position is one of traditional restraint, partly due to unwillingness to yield too

much power to Brussels and partly due to scepticism over the implementation of EEC regulations. This scepticism is shared in Germany, where laws on the import of meats have already been tightened.

Jasper Becker

Medical research

Born-again basics

The UK Medical Research Council (MRC) and the departments of health in London and Edinburgh are making a valiant effort to defend the transfer of Rothschild contract research monies back to the control of the MRC (*Nature* 23 October, p.669). Last week, on the publication of the MRC annual report for 1979-80, MRC secretary Dr J.L. Gowans said that his council is expected to double its commitment to "health services research" in the next five years. And Professor Arthur Buller, Chief Scientist at the Department of Health and Social Security, said that his department had pressed the MRC into the deal, rather than the other way about.

The doubling of health services research is said to be the MRC price for gaining control of the £13.85 million per annum of Rothschild cash. Since 1972 and the adoption of the Rothschild customer-contractor principle, these funds have been controlled by the health departments but spent by MRC. Under a concordat reached in 1973 between the departments and the MRC they were spent exclusively on biomedical research. Each year the departments defined their interests in a voluminous report under headings such as "blood", "mental illness", "cancer and infections" and so on; and MRC responded, detailing exactly how its biomedical research was relevant. Each year, the health departments passed the Rothschild allocation to MRC, duly increased for inflation.

Health services research, which involves social and economic as well as medical matters (for example, does amniocentesis yield a net benefit?) was, strangely, not covered by the 1973 concordat — so that the £2 million or so a year of health services research at present undertaken by the MRC was in fact funded with money outside the Rothschild principle.

The health departments themselves have thus pressed MRC into the new arrangement under which MRC must spend an extra £2 million on health services research by 1985. Professor Buller, no fan of the 1973 arrangement, considers this a net gain for health services researchers, who might expect, for example, two or three new MRC units in the area by 1985.

Both Professor Buller and Dr Gowans, however, insist that the definition of health services research must be broad, and that the creation of new units will depend on the availability of good people to head them. The agreement is to be reviewed in five years, when the health departments could

MRC report in brief

The 1979-80 report makes the following specific points:

Neutron therapy. Another £1½ million is needed by the end of this year to buy and set up a new cyclotron for neutron therapy research at Clatterbridge Hospital, Liverpool — which would thus overtake the Hammersmith Hospital, London, in this work. The cyclotron would be outside the MRC budget, and would be funded largely by the Imperial Cancer Research Fund, the Mersey Regional Hospitals Authority, and a Liverpool cancer research fund. But quotations for the equipment expire in December, when inflation would probably put the cyclotron out of reach.

Tropical medicine. The Tropical Medicine Research Board of MRC met last Friday for the first time since 1979, having cancelled two meetings for lack of money for research grants since cutbacks in Overseas Development Administration spending in 1979. No new projects could be funded — and overseas cooperation is threatened by the new round of government spending cuts. Recruitment into the field has halted.

Budgets. Total expenditure by MRC in 1979-80 was £74 million, including £57 million from the Department of Education and Science and £12.7 million of Rothschild money. The council notes with approval the stability promised in the most recent public expenditure plans, but is apprehensive about the effects of cash limits in inflationary times. Anxious to increase its room for manoeuvre, the council says it has deliberately reduced its commitments to long-term research programmes. During the year, it opened two new research units and closed seven.

Private practice. The council has confirmed its longstanding policy that members of the MRC research staff should not be allowed to engage in private medical practice. The review was made necessary by the decision that physicians working for the National Health Service might take on private patients. The MRC council says that private practice would be incompatible with full-time research appointments, promises to secure adequate salaries for those members of its staff concerned and hopes that British universities will follow a similar policy.

Robert Walgate

claw back the money if MRC has not performed according to plan. MRC should undertake "brick upon brick" health services research, says Buller, without the constraint of contracts tied to particular policy objectives. The subject is just at the point of requiring such academic treatment, he believes, and it is best handled under the dual support system. The departments' own £20 million of research money will continue to be spent on pragmatic matters.

Robert Walgate