

Science suffers as Congress cuts spending plans

Helen Gavaghan, Washington DC

NASA last week lost ground in the race to win money from the US's annual budget. The House of Representatives agreed to a budget proposal that increases the agency's spending by only half of what President Reagan had wanted.

The House was voting on its budget committee's detailed plan for the US's Federal spending in the 1989 financial year. If this proposal survives the US's complicated budgetary system, the international space station will be delayed even further and other new programmes, such as a new orbiting telescope to observe the X-ray part of the electromagnetic spectrum, will face severe cuts in funding.

Another casualty of the House's budget proposal is very likely to be the superconducting supercollider, a giant new particle accelerator for research in subatomic physics. It will produce particles 20 times as energetic as any other machine. The plan would, however, grant more to AIDS research than Reagan advocated programmes to combat drug abuse and for assistance for the homeless.

The House's plan is a long way from being the final position on the budget for 1989, but it provides guidelines for committees that authorise programmes and appropriate money for the House, which is the lower tier of the US Congress.

Within the next few weeks, the Senate, the upper tier, is expected to complete the same process. The whole budget should be settled by the summer.

The scope for variation has been narrowed by the agreement between Congress and the White House last year to cut the annual deficit. This limited spending on discretionary programmes, which include science and space, as well as some aspects of welfare. This is why the House gave science less of an increase than Reagan requested.

Reagan wanted a large portion of the additional money available to be spent on NASA, the National Science Foundation and the Department of Energy's general science programmes. He requested an increase of 29 per cent for the three, to bring their joint spending to \$13.9 billion. The House has cut this to \$12.45 billion. NASA loses about \$1.1 billion, the NSF about \$30 million and the Department of Energy about \$300 million.

This year for the first time, the budget from the Department of Energy includes a request for money to build the supercollider. President Reagan envisaged a first instalment for the collider of \$363 million in 1989. If Congress finally agrees a budget

reflecting that proposed by the House, this instalment could disappear, because the collider does not have solid support.

Some scientists fear that the supercollider will take money from other research that is less glamorous. These scientists may well find allies in Congress. When the energy department produced its short list of eight sites, the collider lost the support of other states.

Whether or not the House's suggested figure for NASA's budget holds firm or not, Congressional staff believe that the agency will face severe cuts, particularly to the international space station. NASA wants \$1 billion for the space station in 1989 compared with the \$415 million it received for the project this year.

Like the supercollider, though, the space station has congressional opponents who doubt whether it is the best way to provide experimental facilities for work in low gravity. □

Japan is 'no octopus'

BRITAIN is hoping to collaborate more closely with Japan on technology research. This week, officials from both countries are holding their annual talks on trade. For the first time, technology research is on the agenda. Delegates from Britain's Department of Trade and Industry (DTI) and from Japan's Ministry of International Trade and Industry (MITI) are discussing joint ventures in superconductivity, optoelectronics and materials research. The talks follow a trip to Japan by a group of industrialists and academics involved in developing new high temperature superconductors.

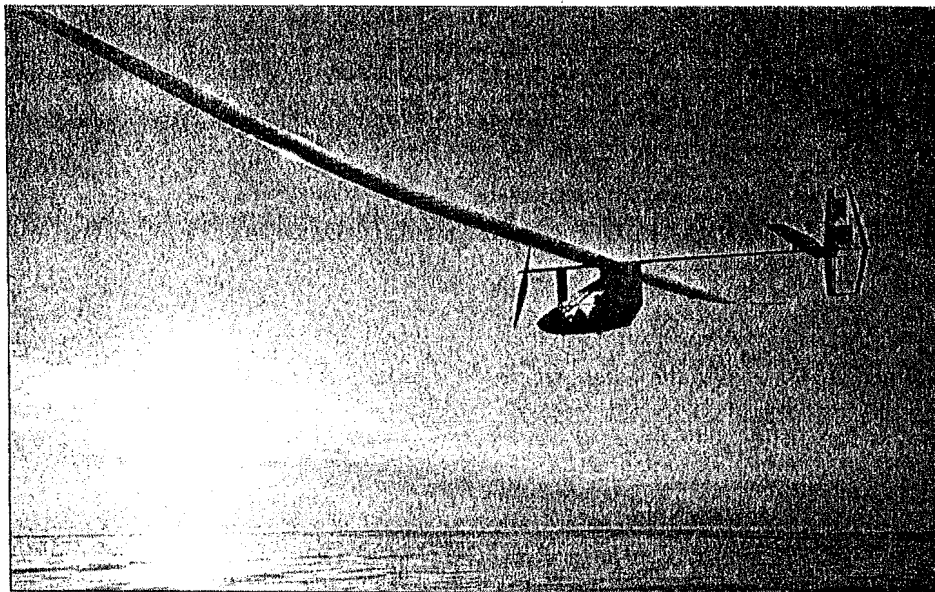
During the visit, British companies and academic researchers received invitations to join the International Superconductivity Technology Center set up by MITI in Tokyo and sponsored by some 60 Japanese companies.

"The image of Japan as a grabbing technological octopus is one they want to dispel," said Ian Corbett of Rutherford Appleton Laboratory, near Oxford, Britain. "They are extremely keen to collaborate." It seems unlikely that with a joining fee of £500 000, British firms will want to get involved on their own, although some, including Oxford Instruments, already have links with Japanese partners.

British scientists said at the talks that they are impressed by the quality and quantity of Japanese research. Working in teams of up to 50 researchers, the Japanese can call on some £15 million from the MITI this year.

"The investment in Japan in materials science is awe-inspiring," said Gough, who was on the DTI-sponsored trip to Japan. The Japanese were churning out scientific papers at the rate of 30 per month and working with great determination. The British group arrived in Japan the day the Japanese announced the discovery of a new high-temperature superconducting compound that contained bismuth. Over the weekend, all major laboratories had duplicated the results. Two weeks later, when the team left, the compound was available for sale. □

Daedalus still alive and flying



MIT Daedalus Project

A TEAM from the Massachusetts Institute of Technology aims to set a distance record for human-powered flight this spring. The Daedalus Project aims to retrace the flight of the Greek mythological character, Daedalus, who fled on wings of wax and feathers from the Labyrinth of Crete where he had been imprisoned by King Minos. The organisers of the project aim to fly their aircraft for 119 kilometres from Iraklion, the main town on Crete, to the volcanic island of Santorini.

If successful, the flight would eclipse the record for human-powered flight of 58.6 kilometres set by the same team a year ago at the Edwards Air Force Base in California (*New Scientist*, 29 January 1987, p 28).

Last week, the Greek Air Force flew three craft built by the group to Greece. Each plane weighs 32 kilograms and has a wingspan of 34 metres. With one pilot, the planes are designed to cruise 3 to 5 metres above the waves at 24 kilometres per hour. The flight between the Greek islands should take four to five hours.

John Langford, the project manager at MIT, says that the flight crew should be ready this week, and that the flight could be made any time between now and mid-May. Weather will be the key factor in scheduling. Low winds are essential because of the size and weight of the craft. The flight would start at dawn, when the weather normally is calm and cool. □