

## Robots

## Britain tries to catch up

BRITAIN is to have an Advanced Robotics Research Centre to develop new techniques for automatic manufacture and to cultivate the wider acceptance of robot technology, in which Britain still lags behind many of its major industrial competitors.

The announcement of this development coincides with the publication on 5 November of a study of the uses of robots in Britain, which concludes that there are still many fewer than 1,000 manufacturing companies using robots, roughly one robot for every 40 factories. The robot population of Britain at the beginning of the year is estimated at 3,200, fewer than the annual increase of robots in West Germany alone during 1985.

The new research centre will be supported jointly by the British government and between 20 and 25 industrial partners. Possible locations include the universities of Glasgow, Salford and Edinburgh and the UK Atomic Energy Authority research establishment at Harwell. The budget will be determined by the number of industrial partners in the venture.

The plan is that the institute will have a research staff of two dozen, concentrating on advanced manipulators, sensors (visual, tactile and acoustic), navigational systems for self-propelled devices, computer systems software and standards for control and artificial intelligence or Intelligent Knowledge Based systems. The new group will also investigate advanced designs intended for use in hostile environments unsuitable for people, for example, nuclear installations.

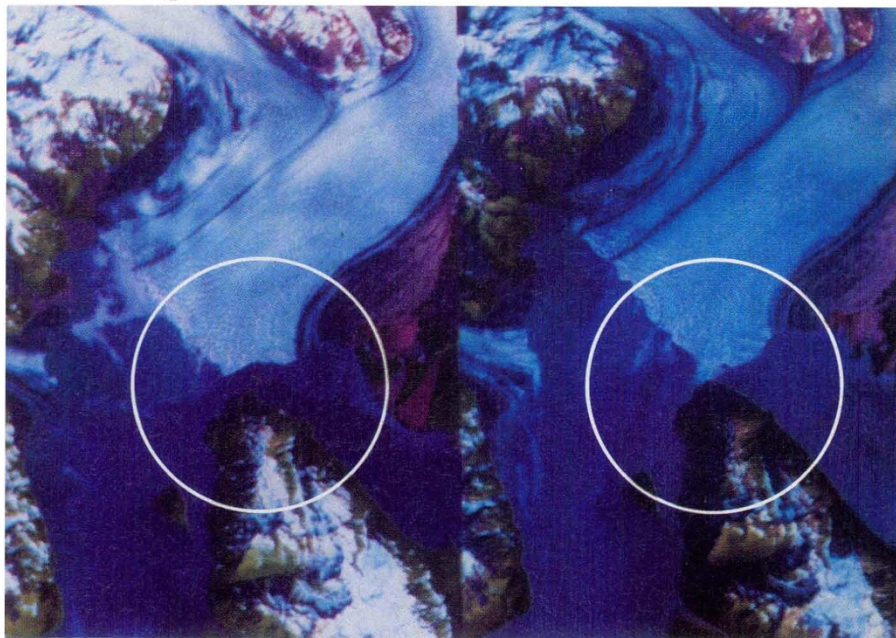
The study published last week, which advocates the setting up of a centre along the lines now proposed, was carried out by the London-based Policy Studies Institute on the initiative of the British Robot Association with support from the Gatsby Charitable Foundation, the Department of Trade and Industry and the National Economic Development Office.

The report says that there were industrial robots in about 740 manufacturing plants at the beginning of 1986, but that most of the plants belonged to larger companies. Only 12 per cent of robot users employ fewer than 100 people. On the other hand, a third of the users are very large manufacturing plants employing more than 1,000 people.

The report says that part of the problem in Britain has been the high cost of the development of robots, the lack of technical support and the poor reliability of designs. The new robot centre is meant to offer a cure for some of these ills.

**Bill Johnstone**

## Alaska glacier seals fate of fiord wildlife



WHEN the Landsat 5 image on the left was taken on 7 August last year, water from the Russell Fiord in Alaska (on the right in each image) could flow freely into Disenchantment Bay (left). But by 11 September this year, as shown in the image on the right, the Hubbard Glacier had sealed off the fiord, forming Russell Lake. Movement of the glacier could eventually fill Disenchantment Bay and the larger Yakutat Bay with ice.

This event is "probably the largest natu-

ral alteration in ocean, glaciers, lake and rivers in North America within our lifetimes", says US Geological Survey glaciologist Larry Mayo. The inhabitants of Yakutat on the Pacific are probably not in any danger, but saltwater fish and wildlife, including seals, trapped in Russell Lake will almost certainly die as the water becomes deoxygenated.

In these images vegetation shows up green, rock and oils a red and water/ice are in blue and white shades. □

### US education

## Plan to license teachers

### Washington

THE US National Science Teachers Association (NSTA) is planning a certification scheme to establish basic qualifications for all science teachers. The plan has been prompted by a study showing that half of newly hired teachers in the United States are unqualified and that about a third of all science classes are staffed by unqualified teachers.

The immediate problem is that state certification requirements are now "largely ignored" in hiring and assignment decisions, according to Bill Aldridge, executive director of the association. Although participation in the certification scheme will be voluntary, Aldridge hopes that it will put pressure on states to improve and enforce their own certification standards.

The association also hopes that a further benefit of its scheme will be that specialist teachers in high schools will be more accurately assigned to suitable classes. Another survey by NSTA showed that 65 per cent of physics teachers, 52 per cent of chemistry teachers and 37 per cent of biology teachers are assigned to classes other

than those they are qualified to teach.

To qualify for NSTA certification, teachers will have to hold an appropriate bachelor's degree and will have to demonstrate a strong background in statistics, mathematics and the application of computers to science teaching. In-service training and three years experience will also be required.

NSTA's standards have been adopted by the National Council for the Accreditation of Teacher Education, and will be the basis for future decisions on the accreditation of college and university science teacher training programmes.

School administrators are likely to welcome the certification scheme, although Gary Marks of the American Association of School Administrators is concerned that the pressure to raise standards may impose greater financial burdens on school systems. He also asks whether, if certification becomes standard, school administrators will be forced to drop courses when certified teachers are not readily available.

**Carol Ezzell**