

Tragedy increases woes of US ice fleet

The main US ship for Arctic research is patching together plans for next year's cruises under the shadow of safety concerns, after its marine science officer and a crewman died while diving under the ice.

The US Coast Guard icebreaker *Healy* is scheduled to begin operations in April, as part of International Polar Year, in which hundreds of scientists from at least 60 countries will launch projects at the poles. But US agencies are experiencing considerable challenges, including replacing two ageing icebreakers, securing a crucial helicopter service, and training icebreaker crews for scientific missions.

And in a telephone conference on 16 November, Coast Guard officers told US research agencies that divers may not be available for the 200 days of scientific operations that the *Healy* is scheduled to complete. A Navy-certified dive team typically supports researchers aboard the 128-metre icebreaker, helping with equipment and operations in the water.

On 17 August, while stopped in pack ice about 800 kilometres north of Barrow, Alaska, marine science officer Jessica Hill and a mate, Steven Duque, died while on a short dive under the ice. Hill, a marine biologist who was also the ship's dive officer, was conducting a 'familiarization' dive for the less-experienced Duque.

When the divers ran into difficulties, crew members pulled them out of the water via life-

line ropes. Resuscitation was unsuccessful and the divers were pronounced dead. The *Healy* steamed to Alaska, where Coast Guard officials relieved the captain, suspended all dives, and cancelled the ship's two remaining research cruises for 2006. A month-long cruise led by scientists at the University of New Hampshire in Durham, who are mapping the continental shelf to redraw the US economic zone, was delayed until next September. And a cruise to test an under-ice vehicle operated by researchers from Woods Hole Oceanographic Institution in Massachusetts was cancelled. The team will deploy the vehicle next summer without the benefit of a full test run.

"We were disappointed," says Simon Stephenson, director of the Arctic science division of the US National Science Foundation (NSF). "But this was a safety issue; there was concern about the crew functioning properly."

Coast Guard investigations into the deaths are due to be completed by February 2007. Earlier this month, military officials released autopsy reports to the families in Florida. Hill, 30, died of asphyxiation, with lung trauma from a likely unconscious ascent from about 60 metres down. The report says that both divers' air tanks were empty. "Nothing will bring her back, but I would like to know what happened," says retired microbiologist William Hill, the woman's father.

The tragedy adds to difficulties already being experienced by the US fleet of four icebreakers. In September, the Government Accountability Office reported on the inadequacies of the ageing ships, and a National Academy of Sciences panel called for the replacement of two of them (*Polar Sea* and *Polar Star*).

The *Healy* is the newest of the fleet, commissioned in 2000, and the only one primarily devoted to scientific missions. But there have been difficulties with the *Healy*'s Coast Guard crew having sufficient technical experience to support researchers on board. In recent years, the NSF has had to contract out various services, including the handling of ocean-floor cores (to Oregon State University) and key depth and temperature data (to Scripps Institution of Oceanography). Last summer the agency also had to pay for a contract helicopter service for some cruises, doubling costs to US\$600,000, because Coast Guard helicopter engines were being replaced.

Stephenson is now aiming for a more coordinated approach. Next year, he says, the NSF will issue a request for proposals in which one institution would provide scientific support personnel for the *Healy*. The contract, worth around \$1 million, is to be in place for 2008. But Stephenson is still aiming to fill a month-long gap in June, when no team is scheduled to use the ship. "It's ironic this is happening [during International Polar Year]," he admits. "But I predict there will be too much demand in 2008."

Rex Dalton

P. DANNER/US COAST GUARD/AP

Italian government eases in radical reforms

The tiny, elegant and undeniably ancient Rita Levi-Montalcini — Nobel laureate and, at 97, still active in her role as senator-for-life — thrust the plight of Italian research into the headlines last week. She pledged to vote against the new government's 2007 budget if last-minute cutbacks for science were not reversed.

That small battle was won, and the bill passed through the first of the Italian parliament's two chambers on 18 November with a final budget for universities and research only slightly lower than that for this year.

There is still much fighting to be

done, but when the stringent 2007 budget — designed to reduce Italy's soaring deficit — is finally signed off in December, scientists are likely to see a significant increase in research project money, a decrease in funding for infrastructure, and a smaller-than-anticipated increase in new positions for young academics.

This may disappoint those who had higher hopes for the avowedly research-friendly centre-left coalition government that took office in the summer. But behind the headlines, more fundamental changes to the research system

have quietly taken place. Two key decrees were approved last week, which in the long run may serve the scientific community better than immediate cash injections.

One decree creates an evaluation agency for universities and research, which should be established by the spring. Its first task will be to broadly grade universities on their performance



Defending Italian science: Rita Levi-Montalcini

in teaching and research, producing three or four groupings that the ministry for universities and research will eventually use to allocate funds. "The agency's aim is to gradually improve, not to judge," says Luciano Modica, the

research ministry's undersecretary.

Modica hopes the agency will also help to solve other problems

L. BRUNO/AP



The icebreaker *Healy* is primarily used for scientific research.



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Britain plans tough limits to curb emissions

The UK government clearly aimed to make a statement about climate change last week. And it succeeded. At the Queen's official opening of parliament on 15 November, it promised legislation that will see the country's greenhouse-gas emissions slashed to 60% of 1990 levels by 2050. That is a level far beyond its carbon-reduction commitments under the Kyoto Protocol, and a longer-term programme of cuts than any other major polluting country has so far adopted.

Is the British pledge as impressive as it sounds? The legislation has not yet been officially introduced into parliament — that will happen in the coming months when the government produces a draft bill. So, although the announcement is a powerful statement of intent, the details remain vague. "How the target is defined and set, and how progress is measured and reported, are fundamental issues that are still being considered," said a statement from the Department of Environment, Food and Rural Affairs, which is charged with drafting the legislation.

Opposition politicians and environmentalists have also pointed out that although the far-reaching target is laudable, the plan isn't so tough in the short term. Critics have called for the plan to involve fixed annual cuts in emissions, rather than the five-yearly targets suggested by the government. There is optimism, however, that the target is achievable — if improvements in energy efficiency are combined with the development of low-carbon technologies.

Unfortunately the same cannot be said of sorting out what should happen in the next phase of the Kyoto agreement. International talks in Nairobi, Kenya, last week were meant to address how to incorporate large developing economies such as China, India and Brazil into the treaty after 2012. On Friday, the summit's final day, the Kyoto nations decided to postpone the negotiation until 2008.

Michael Hopkin

in the Italian research system — such as recruitment. Rules alone won't stop dishonest hiring policies, says Modica, but universities that allow bad decisions to be made will now be stung by the evaluation system.

The second decree radically changes selection procedures for presidents of research organizations. These were previously direct government appointments — former prime minister Silvio Berlusconi's centre-right administration appointed several research heads considered incompetent by much of the scientific community (see *Nature*

440, 264–265; 2006). Now independent committees will prepare shortlists of three candidates from which the research minister must pick.

The new rules are already being put into practice for the Italian space agency, whose previous president, Sergio Vetrella, has resigned under pressure from the government. The rules are also expected to make it easier for the government to oust Fabio Pistella, president of the National Research Council, which runs more than 100 research institutes around Italy. Pistella has evaded attempts to

transfer him to another post.

Scientists have welcomed the reforms. They will help a lot, even if funding levels for 2007 are modest, says physicist Giorgio Parisi of La Sapienza University in Rome. But after five successive years of cuts, he says it will be "disappointing" not to maintain at least 2006 levels.

The budget bill is now being considered by the Senate, on which Levi-Montalcini sits. She is reconciled with a relieved government whose coalition's majority in parliament is so narrow that every vote counts. ■ Alison Abbott