Briefings

edited by DAVID HAMILTON

Leaky Pipes Delay Astronomy Mission

The space shuttle is grounded again, this time by plumbing troubles. If they are not fixed by mid-September, an ambitious astronomy mission will be seriously delayed.

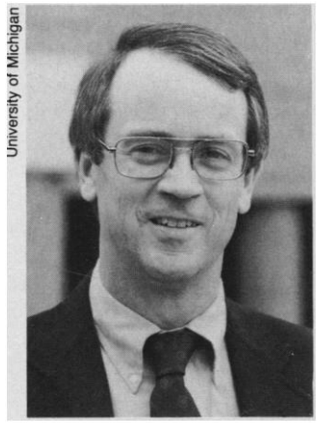
A leak has been detected—but not located—in the shuttle's hydrogen fuel lines. To avoid risking a Challenger-type explosion, NASA chiefs ordered the shuttle back to the hanger for an indefinite period of inspection and repair. Normal operation will not resume before mid-July, and already the delay means that each flight this year will cost about $50 million more than expected.

Columbia was originally meant to take off in late April or early May carrying three ultraviolet sensors and an x-ray scanner, a package known as Astro-1 (*Science*, 1 June, p. 1081). The delay has already caused headaches for project scientists because many objects scheduled for study will no longer be visible by the time the shuttle takes off. And if Astro-1 doesn't fly before 15 September, NASA officials say it will be bumped until at least November. The reason: the launch pad must be cleared for the Ulysses mission, which must get off this autumn or lose the unique celestial configuration needed to "slingshot" its payload through the solar heliosphere.

Astro-1's instruments were originally intended for use on unmanned rockets, but by the early 1980s NASA had eliminated all alternatives except the space shuttle. The manned vehicle has not lived up to expectations, however, and the six to eight Astro flights that were promised have been cut to one. Today the question is whether the last surviving Astro mission will expire like the others—a victim of leaky plumbing.

MIT Picks a President—Again

The Massachusetts Institute of Technology's long and frustrating search for a new president has finally come to a close. Charles M. Vest, provost and former dean of engineering at the University of Michigan, has been selected by MIT Corporation's executive committee to succeed retiring president Paul E. Gray. At the time *Science* went to press, Vest had not yet been confirmed by the MIT Corporation itself, which was scheduled to meet on 18 June. University of Michigan officials said Vest, whose training was in mechanical engineering, would have no comment until after his confirmation.



Engineering to the fore. *Charles M. Vest, the next president of MIT.*

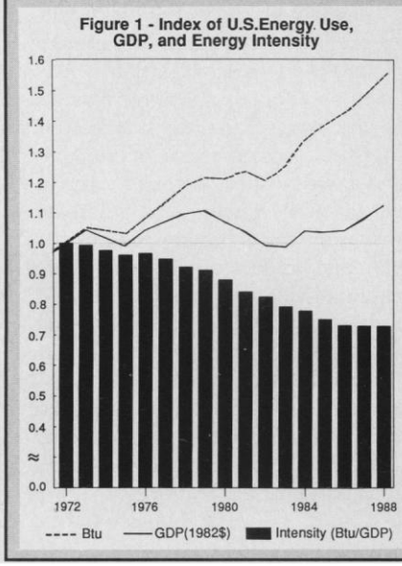
"Our committee has always had a pretty clear notion of what a president of MIT should look like, and Chuck Vest fit it very well," said Robert Solow, MIT economist and chair of the faculty search committee. "We're happy to have an engineer, since engineering is the heart of the Institute. He's an expert administrator, and someone who's thought a lot about the role of science and engineering in society."

Solow was clearly relieved that the search was finally over. "We've really looked for two presidents, you know," he said, referring to the abortive selection of MIT biologist Phillip Sharp last February. Sharp withdrew his name a week after he was chosen.

One of Vest's first tasks will be to fill four high-level administrative positions. Provost John M. Deutch, an early contender for the presidency until he withdrew from consideration last January, will be leaving his post on 30 June, followed closely by Dean for Student Affairs Shirley M. McBay and Dean of Humanities and Social Sciences Ann F. Friedlaender. Dean of Engineering

Growth Without New Energy

The conventional wisdom about national energy policy and its relation to economic growth could be lifted from a TV spot: "A strong, growing economy requires new sources of energy. To improve our standard of living—and that of our children—it's important to expand our energy exploration and development capabilities." Depending on who's paying for the ad, what follows next might be a plea to open the Arctic National Wildlife Refuge for oil and gas drilling or a call for federal dollars to support the next generation of nuclear power plants.



The energy gap. *From 1972 to 1985, energy consumption increased by 0.3% annually, while GDP grew by 2.5%. Energy "intensity," the amount of energy needed to produce a unit of economic output, declined during the same period. Energy use resumed rapid growth from 1985 to 1988, causing intensity to level off.*

But the conventional wisdom is exaggerated, according to a working paper from the Office of Technology Assessment.* In the years 1972 to 1985, U.S. energy consumption was nearly flat, while gross domestic product (GDP) grew an average of 2.5% per year. About two-thirds of this improvement in energy use was due to conservation and efficiency measures, such as new manufacturing processes, while the remaining third resulted from the economy's structural realignment toward services, such as finance and health care.

The OTA did find a return to pre-1972 energy consumption patterns from 1985 to 1988—an 8% rise in that period. The report blames this increase in part on even higher GDP growth (averaging 3.7% annually), but also notes a 10% increase in energy-intensive defense spending, a shift in national consumption toward manufactured products like machinery and chemicals, and a surge in exports of machine tools and computers.

Will this latest trend continue through the '90s? Probably not, says the OTA, although the difficulty of predicting the structural composition of the economy makes forecasting a dicey proposition. The report notes that a "wide variety" of energy-saving technologies holds the potential for "significant gains in efficiency," assuming that industry is willing to use them.

**Energy Use and the U.S. Economy* (Office of Technology Assessment, U.S. Congress, June 1990).

Gerald L. Wilson has also resigned effective 1 September. Appointment of their successors has been delayed until the new president takes office.

Census Adjustment Constitutional

Demographers who would use statistical methods to remedy the defects of the 1990 census have gotten a hand from the courts. U.S. District Judge Joseph M. McLaughlin ruled on 7 June that there's nothing unconstitutional about adjusting enumerated figures to account for the millions of Americans—primarily ethnic minorities and the poor—the census is expected to miss this year.

In considering whether to strike down a Commerce Department guideline that casts the constitutionality of adjustment into doubt, McLaughlin wrote: "The concept of statistical adjustment is wholly valid, and may well be long overdue." But McLaughlin let the guideline stand, reasoning that "it does not follow that any and all forms of statistical adjustments will be sanctioned."

Cold Fusion Claims a Victim

Cold fusion continues to sink in the laboratory (see *Science*, 15 June, p. 1299), but in academic politics it is becoming a force to be reckoned with. University of Utah president Chase N. Peterson, an ardent supporter of the disputed phenomenon, last week announced that he would retire at the end of the 1990–1991 academic year. Peterson has been in hot water with the faculty's academic senate ever since that body learned a purportedly anonymous $500,000 grant to the university-affiliated National Cold Fusion Institute was actually a Peterson-approved transfer from the school's own research fund. On 1 June he admitted that hiding the source of the money had been a mistake, but was unable to preempt a senate resolution questioning his fitness to lead the university.

Peterson, who was unavailable for comment, denied in a statement that he was resigning under pressure. He stated only that "the period of time I can effectively provide leadership is nearing an end."

Peterson's retirement casts a shadow over the future of the Cold Fusion Institute. "There is no question that Dr. Peterson was and is a very strong supporter of cold fusion at the university," said institute director Fritz G. Will. "His leaving cannot help the institute." Will blamed the faculty for "forcing" Peterson's resignation and suggested that its action was a manifestation of hostility to cold fusion research in general.

One of Peterson's most effective acts was his successful solicitation last fall of a $5-million state grant for establishing the institute. Only $1.6 million of that grant remains, however. A state oversight panel has ordered a scientific review and a financial audit to determine how the money was spent.

Doisneau/Photo Researchers, Inc.

Redundant? *French sow searching for truffles.*

Le Nez Knows

Pigs of Perigord, look to your laurels. An artificial nose threatens to make you redundant. The nose can detect the scent of that rarest of delicacies—the truffle—as accurately as a trained pig, but, unlike the porker, it never eats the overpriced fungus before the handler can get to it. And unlike the dogs also used to hunt truffles, it is tireless and undistracted by more interesting smells.

Krishna Persaud, a biochemist at the University of Manchester Institute of Science and Technology, has spent the past 6 years developing artificial noses and tongues to replace human detectors in such industries as food and brewing.

The truffle hunter was made to order for a team at the University of Toulouse in southwestern France, which is anxious to help farmers find the 50% of the truffles that pigs and dogs miss. It consists of 20 tiny sensors based on organic semiconductors, whose characteristics change when a particular gas is adsorbed onto the sensor's surface. A microprocessor reads the sensors and decides whether they smell truffle.

A couple of months ago, the Toulouse researchers staged a field test in which the bionic sniffer was pitted against a truffle hound in locating six truffles that had been buried about 20 centimeters deep. "I found them very easily," says Persaud, but after the first four he began to get false readings. "The earth had been turned over and smelled of truffles. Also, the machine sometimes reacts to humus in the soil." The dog eventually found a fifth truffle.

Back in the lab, the team is tinkering with the nose to help it discriminate more accurately. When the next season starts in November, an improved version will be working alongside the dogs and pigs. Persaud is convinced his device will beat them and find a ready market among French farmers.

Animal Activists Repudiate the Center

With an attendance estimated by U.S. Park Police at 24,000, the 10 June March for Animals didn't set any Washington records. But it was large enough to challenge the image of animal rights activists as "cranks, extremists . . . a part of the lunatic fringe," Peter Linck, director of the National Alliance for Animal Legislation, told the *Washington Post*.

If crafting a new, moderate face for the movement was the aim, however, nobody informed the assembled demonstrators. When actor Christopher Reeve told the crowd he supported the properly regulated use of animals in medical studies such as AIDS research, he was met with a chorus of boos. Reeve added: "If you want to get things done, the worst thing that can happen to you is to be identified as the fringe." He was booed again, and he left the podium.

Donald Barnes, Washington director of the National Anti-Vivisection Society, explained that Reeve chose an unfortunate time to extemporize. "I guess we're all appalled that we didn't realize his lack of commitment to our ideals."

David P. Hamilton

Bloody labs. *An activist protests animal research.*