be lost if research funding was to be restricted to a limited number of universities."

But shortly after the results were published, the heads of four of Britain's top-rated universities published an article in *The Observer* newspaper calling for a move in that direction: the creation of a "superleague" of universities. The article was accompanied by a photomontage showing the four in the garb of soccer supporters. They argued that a new league of about 12 institutions should be given enough cash to bid for the world's best researchers and to buy top-quality equipment. Vice chancellors Alec Broers of Cambridge, Brian Follet of Warwick, Derek Roberts of University College London, and Stewart Sutherland of Edinburgh rejected the notion that standards were comparable across universities. "To pretend that Oxbridge is no different from our recently created 'new' universities is ludicrous," they wrote. "No one [in the U.S.] would dream of asking whether the output measures of Massachusetts Institute of Technology and the University of Paducah were the same."

Their proposal is not new. For the past 2 years, the heads of these universities and about 15 others, called the Russell group after the hotel in London in which they meet, have informally discussed the creation of an American-style "Ivy League." But such a fundamental change in British higher education will have to await the results of a government-sponsored inquiry led by Sir Ron Dearing into the future of the whole issue which is due to report later this year.

While the universities jostle to make the best advantage of their new ratings, the funding councils are keen to play down the sparring caused by the league tables. Fender believes the assessment exercise shows that: "The real winner is the United Kingdom, which is benefiting from a huge range of high-quality work." But researchers are more equivocal. Paul Isherwood, assistant director of the department of mechanical engineering at London's Imperial College, which was rated 5 in 1992 and the top 5* this time, says: "We haven't changed our policies. We get good people; we stretch them and try to fund them adequately. Getting a 5* ranking has a positive effect, but I just wonder if the country is getting better research overall from the flurry of transfers." Peter Ashworth of the learning and teaching research institute at Sheffield Hallam, who helped organize the university's submission, says: "Some people take the view that the exercise is a disastrous imposition and waste of resources. But I think it helps shake things up and can reveal unexpected areas of research strength. It can counter entrenched opinions."

–Nigel Williams

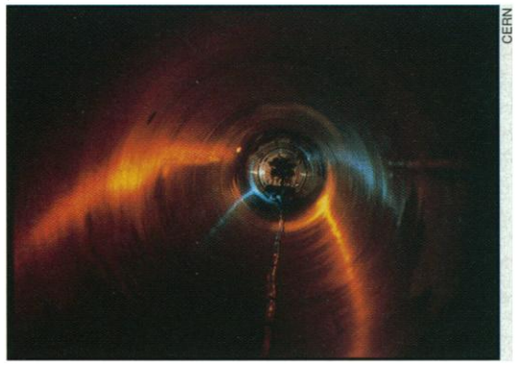
PARTICLE PHYSICS

CERN Sets Sights on an Early LHC

CERN, the European particle physics center near Geneva, got a decidedly mixed message from its governing council last month. Delegates from the organization's 19 member countries voted unanimously to put CERN's next grand project, the Large Hadron Collider (LHC), on a "fast track." It should now be completed in a single stage by 2005—3 years ahead of the original schedule. "This is superb news for particle physics," says CERN Director-General Christopher Llewellyn Smith. But the council also agreed to a series of cuts in the rest of CERN's budget that could badly squeeze other experiments.

The LHC, with a price tag of $2 billion, will be the most powerful accelerator ever built. Scientists hope that its ability to smash together protons with a combined energy of 14 teraelectron volts will finally prove the existence of the elusive Higgs boson and—perhaps—twins of known particles predicted by supersymmetry theory. The council gave the project the go-ahead in 1994 and put it on a two-stage timetable: Low-power operations would begin in 2005 and full power in 2008. But the council said that if nonmember countries such as the United States and Japan made significant contributions, the project could be moved onto a fast track, with completion in 2005.

Those contributions have now come through. It was announced at last month's council meeting that Japan will add $35 million to a contribution it promised in 1995 of about $45 million. "We really hadn't hoped for this," says council member Jean Perez y Jorba of the University of Paris at Orsay. The council also approved a cooperation agreement with the United States, due to be signed in April or May. This would provide about $530 million, both for the LHC and detectors in which U.S. researchers are involved, reports Llewellyn Smith. "We also have agreements with Canada, Russia, India, and Israel. Everyone in the world says this is the next major step we have to take," he says.



Fast track. The Large Electron-Positron collider tunnel, which will house the Large Hadron Collider.

But prospects for the rest of CERN's operations are not so bright. Last July, Germany announced that it wanted to reduce its annual contributions to CERN by almost 10%—a move that could precipitate similar cuts from all members because each country pays a share of CERN's budget based on its relative national income. After months of tense negotiations, Germany said it was prepared to be flexible, says council member Risto Nieminen of the Helsinki University of Technology in Finland. But the outcome will still be painful: The council agreed to reduce all members' contributions by 7.5% in 1997, 8.5% in 1998 to 2000, and 9.3% in 2001 and following years, compared to the 1994 funding level.

Keeping the LHC on track while cutting CERN's core budget will require a balancing act of extraordinary dexterity by CERN managers. "We had already cut our programs to the bone in our long-term proposal put forward 3 years ago," says Llewellyn Smith. "Now we are going to have to go further: We will have to cut some running experiments, and we are going to have to delay maintenance."

The threat to CERN's current research program was a subject of intense debate at the council meeting, reports council member Bernard de Wit of the University of Utrecht in the Netherlands. Especially worrisome is the possibility that CERN's current mainstay, the Large Electron-Positron collider, will not be fully exploited before its planned shutdown at the end of 1999. Llewellyn Smith says he will try to maintain some flexibility. "If there is some major discovery, then we might have to consider changing the timetable of the LHC. ... If the physics case is strong enough, we will have to."

Last month's council meeting was the last one chaired by Hubert Curien, France's former science minister, who is ending a 3-year term as CERN's president. Luciano Maiani, a theoretical physicist from Italy's National Institute of Nuclear Physics in Rome, took over at the beginning of this month. Curien says his fondest memory was "the meeting of December 1994 where we obtained unanimity to construct the LHC. ... This unanimity has been again confirmed this week."

–Alexander Hellemans

Alexander Hellemans is a writer in Paris.