

tives when asked were in agreement that Spain must make its own mind up on how to frame its science policy. There was plenty of food for thought for Spanish scientists and science policy makers at this meeting. It now remains to be seen whether it is digestible.

#### LINEAR MOTORS

## We Shall Overcome

A NATIONAL centre to study electrically propelled surface transport is to be established by Imperial College, University of London. This is the reply of Professor Eric Laithwaite and his colleagues at Imperial College to the recent government decision to cancel the tracked hovercraft project (see *Nature*, **241**, 492; 1973).

Professor Laithwaite, appearing before the Select Committee on Science and Technology last week, ridiculed the government's plans to continue research on linear motors through a joint programme of work between the National Research Development Corporation (NRDC) and Hawker Siddeley, with British Rail studying the problems of magnetic suspension.

Hawker Siddeley, said Professor Laithwaite "will be starting from scratch" in this type of work and he cannot understand why the government chose this company in preference to others, in particular GEC or Linear Motors Ltd of Loughborough, which already have expertise in linear motors.

Professor Hugh Ford, also of Imperial College, outlined to the select committee the reasons why it is essential to set up a national centre for this type of work. Britain must maintain its lead in linear motor technology and for this to be done the efforts of the universities and industry must be coordinated. Professor Ford was adamant, however, that the present scheme is not an effort to resuscitate Tracked Hovercraft Limited although an essential part of the plan is to use the test centre which THL has constructed in Earith.

Both Professor Laithwaite and Professor Ford stressed that research into surface transport using linear motors has to be done with a full scale track. As this is already available at Earith it is the natural place to site the proposed centre.

The plan is to fund the proposed centre with money from the research councils, universities and industry. Money will be sought both in Britain and abroad. A permanent staff at Earith of about 30 people is envisaged (Tracked Hovercraft Limited employed more than a hundred). Imperial College will play a large part in running the centre simply because it is recognized that the expertise that the college has in transverse flux motor design and electromagnetic levitation is far more

advanced than that found anywhere else. The centre will be a contract research organization that will, according to Professor Ford, assist the British linear motor and magnetic suspension programmes.

But the select committee could not allow this opportunity to pass without delving further into the government's decision to stop supporting THL. Professor Laithwaite admitted that he was not formally consulted on the closure of Tracked Hovercraft Limited although he modestly admitted that he is the world's leading expert on linear motors. Neither the Department of Trade and Industry, the Department of the Environment or British Rail had asked his advice on this matter although he



Professor Eric Laithwaite.

had discussed it with a representative of the National Research Development Corporation. British Rail, said Professor Laithwaite "does not want to know me", as it is firmly wedded to the idea of steel wheels on steel rails.

British Rail is committed to the Advanced Passenger Train moving along existing track at 150 mph but Professor Elliot of the City University, who also appeared before the select committee, expressed severe reservations about the APT. There are two chief problems, said Professor Elliot. First, it is doubtful whether the track can be maintained to the standard necessary to carry trains at such speeds and, second, it is questionable whether the train will make efficient electrical contact with the live rails at 150 mph.

But Professors Elliot and Laithwaite cast a more serious doubt on British Rail's plans by challenging the basis of BR's decision to base the future of high speed transport in Britain on trains running on existing track, thus avoiding an expensive track building programme. How can the present intensity of slower

speed rail traffic be compatible with the APT, they asked? A train intended to run from Manchester to London in an hour will need a clear run, so where will the freight and other traffic go? The only solution, according to Professors Laithwaite and Elliott, is to build new track for the high speed trains. This removes the chief argument for persisting with British Rail's steel wheel on steel rail policy.

In a carefully phrased set of questions Mr Ted Leadbitter got Professor Laithwaite to relate details of a conversation he had had with Dr Ieuan Maddock, chief scientist at the Department of Trade and Industry, after Dr Maddock had been shown a demonstration of the work of the Imperial College group. At the end of what had obviously been an impressive demonstration Professor Laithwaite said that Dr Maddock "clenched his fist and said I wish that I had known all this sooner". The demonstration took place on February 5 of this year. The decision to cancel the Tracked Hovercraft work was reportedly taken in January although it was not made public until February 14.

#### NUCLEAR STRUCTURE FACILITY

## Enquiry Holds Up Work

THE Department of the Environment has called in the scheme to build a nuclear structure facility at Daresbury and a planning enquiry is to be held. This unexpected move by Mr Geoffrey Rippon's department could hold up construction for several months.

Professor Alick Ashmore, Director of Daresbury, the Science Research Council's nuclear physics laboratory, said this week that he was surprised by the department's decision, particularly as Cheshire County Council, within whose area Daresbury falls, had willingly supported the planning application in February. "If the plans had been called in before then," Ashmore said, "I would not have been surprised, but at this stage it is rather unexpected."

Assuming the enquiry allows the SRC's plans to go ahead, Daresbury will have a 20 to 30 million volt electrostatic accelerator by about 1978. The project, which the SRC approved in January, will cost £5 million over four and a half years, and will provide Britain's nuclear structure physicists with a low energy accelerator that they have waited ten years for already (see *Nature*, **237**, 192; 1973).

Professor Ashmore said that having the plans called in is bound to produce a delay. "We can carry on with general research and development on higher voltages," he said, "but we can't start to build." Work is also being held up by the Department of Education and Science, which has still to give the SRC permission to spend the £5 million.