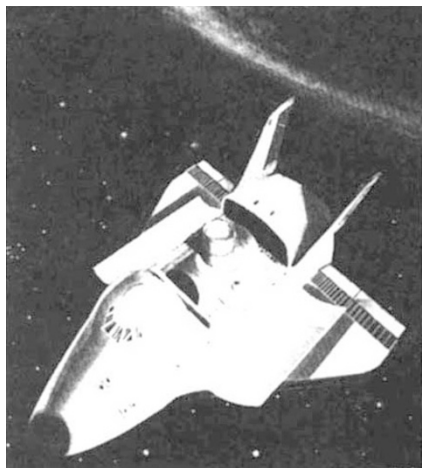


Europe's shuttle

France forced to go it alone?

A DECISION which may upset the European partners of France is expected soon from the French government on who will be the prime contractor for the first European space shuttle. This "manned space plane" is Hermes, a miniature version of the US space shuttle, capable of carrying two to four astronauts into space and back again.

Hermes has been long in the planning by the French space agency CNES, and would fulfil a strategic need in Europe to have an independent, European means of placing and retrieving people in orbit, French space officials argue. Hermes would be launched by an up-graded, all-cryogenic version of the Ariane space launcher now under development at CNES (Ariane-5), and would have a payload varying from 1 ton and two men



Hermes — still only an artist's impression.

to 4.5 tons and four men according to orbit. Unlike the US space shuttle, Hermes will be designed to go into polar orbit at relatively high altitudes (800 km) as well as in low equatorial orbit; the fuel costs of reaching high polar orbit would minimize Hermes' payload. The shuttle should carry 4.5 tons and 4 people around the Equator — but only 1 ton and two people around the poles.

Full-scale development costs have been estimated at some FF 1,400 million (around £ 140 million). Frederic d'Allest CNES director-general (and president of Arianespace, Ariane's commercial wing), has been touring Europe attempting to raise enthusiasm and cash for the project, but the French government now seems so committed to the project that France may continue alone if full backing is not forthcoming. Last January, the European Space Agency in its first full ministerial meeting for years "noted with interest the French decision to undertake the Hermes programme" and asked to be "kept informed" of progress. And if all goes well, the European Space Agency (ESA) may adopt Hermes as one of its "optional" commercial programmes (like Ariane)

sometime next spring, at about the time when the agency also has to make a decision on full participation in the US space station project (now in the detailed definition phase).

Meanwhile, France is pushing ahead fast in an attempt to define the French commercial structure behind Hermes. At present the battle is fittingly between aircraft manufacturer — Dassault — and Aérospatiale, which assembles Ariane and the French nuclear missiles the SSBS and MSBS. Dassault has the expertise in flying; Aérospatiale in re-entry technology (for nuclear warheads), rocket assembly and space data systems. Either could take the prime contractorship for Hermes and both are competing for it; and both, in principle, should be involved in its construction.

However, there appears to be some delay in announcing the choice of prime contractor — and this may not be unconnected with the way Dassault just a few weeks ago scotched French participation in the next-generation European fighter-

plane project, the EFA. After years of negotiation, France dropped out of the collaboration — which will now take place between Britain, West Germany, Italy and Spain — arguably because Dassault sought the lion's share of the work. (Another reason was that Dassault also had an eye on the export market, and wanted a lighter plane than would have suited the North Atlantic Treaty Organization's European theatre, for which the EFA was primarily destined.) But whatever the cause, Dassault effectively wrecked its European credentials over the EFA. There is therefore some doubt among European partners about participation with the company on another, even more adventurous, European project.

As with the EFA, France seems likely to make her own, and independent, choice irrespective of outside pressures. As Roger Lesgards, president of the Société Européenne de Propulsion (SEP) that constructs Ariane's motors, wrote recently: "It is evidently indispensable in the European space effort that France should take the first rank". If that rank means Dassault, then the feeling in Paris seems likely to be: so be it. **Robert Walgate**

Genetic engineering

Restrictions on industry eased

Hamburg

THE safety regulations for gene technology, which were adopted in West Germany in 1978, are now being revised, with the intention of relaxing the tight restrictions which are hampering companies trying to scale-up biotechnology to the industrial level. The new regulations should be published early in 1986. The Federal Minister for Research, Dr Heinz Riesenhuber, hopes that these relaxations will help the German biotechnology industry to become more competitive internationally. In June of this year, he promised the industry DM 1,000 million as support for the years 1985 to 1989 (*Nature* **316**, 287; 1985).

Until the new regulations become effective, West German companies are allowed to conduct large-scale fermentations of transformed organisms (in vessels larger than 10 litres) only after obtaining special permission from the *Bundesgesundheitsamt* (Federal Health Office). The new guidelines will define general criteria and conditions under which large-scale fermentations are to be permitted, and thus prevent the unfairly harsh treatment of companies eager to move on to commercial production. The use of gene-manipulated organisms in field research will still only be allowed after the issue of a special licence, however.

The 1978 regulations applied only to research projects which were financially supported by the Federal Research Ministry, and this will remain the case for the

new regulations. Riesenhuber, however, expects that all industrial concerns will adopt the new rules, and indeed, he has already received promises of cooperation from industrial representatives. In his opinion the revisions are needed urgently because two applications for industrial production capacities (Hoechst for insulin, and Bioveron for interferon) have already been submitted to the Federal Health Office.

The new regulations have met with some opposition, however, and Riesenhuber has been criticized for not waiting for the report of the Enquête Commission on gene technology, established by the *Bundestag* in autumn 1984. The social-democratic chairman of this commission, Wolf-Michael Catenhusen, agrees that there is a need for new regulations, but says that the investigation of his commission on safety risks should be given adequate consideration. A first hearing took place at the end of September, a second hearing on questions of safety in the licensing of genetically modified organisms will take place on 21 October, but the Commission will decide the matter only at the end of 1986.

The Ministry for Research has stressed that the revised safety recommendations are not intended to subvert those from the Enquete Commission. Similar, but internationally applicable recommendations are being formulated by the Organization for Economic Cooperation and Development. **Jürgen Neffe**