

France prepared to "go it alone" on ACX

PARIS

France is pursuing development of a 1990s combat aircraft, starting with construction of an ACX (Avion de Combat Experimental) technology demonstrator. France wants to build ACX together with Britain and Germany, "but we can go it alone and have the means to do so", said Defence Minister Charles Hernu during a visit to Dassault-Breguet's Toulouse factory.

Hernu has told the French National Assembly that the ACX programme could be launched during the first quarter of this year, leading to a demonstrator first flight in 1985-86. Preliminary design is already under way at Dassault, and several ACX characteristics have been defined:

- design emphasis on manoeuvrability, stability at high angles of attack, and low-speed handling for short take-off and landing.

- cranked-delta wing planform, with large-area canard control surfaces and a single fin.

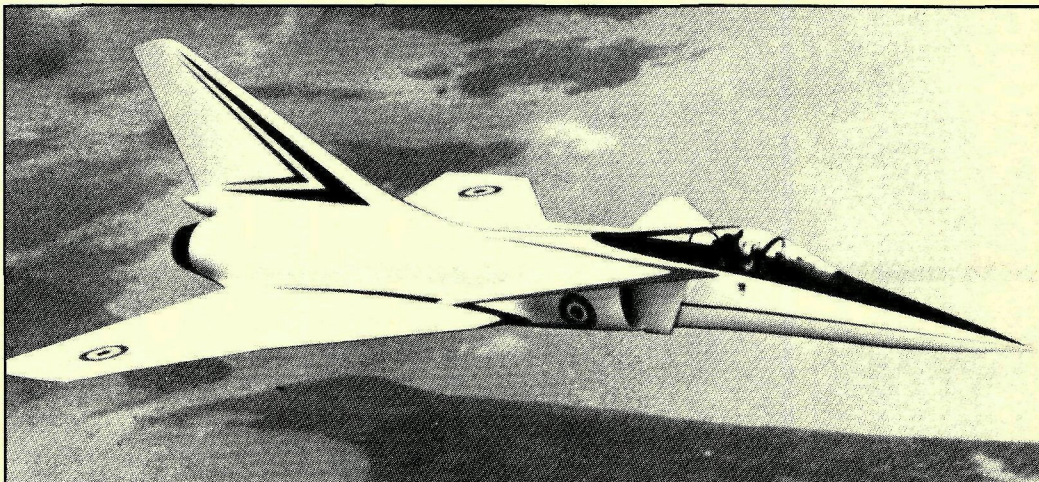
- twin engines (preferably) with intakes optimised for high angles of attack.

- active control, with gust alleviation, and generalised automatic control to reduce pilot workload. Fibre-optic digital data transmission, multifunction cockpit displays, and voice control.

- extensive use of new materials and manufacturing processes, including boron, carbon, Kevlar, and hybrid composites and superplastic forming and diffusion bonding of titanium.

ACX will provide much-needed employment for Dassault's design office and prototype workshops. Development of the Mirage 2000 is almost complete, and programmes such as the Mirage III New Generation are only applications of existing technology and design techniques.

Dassault is applying new computer-aided design methods to ACX, enabling engineers to work directly with the computer for conceptual and detail design and machine-tool preparation. Computer-aided design has already been used to optimise



ACX will bear close resemblance to Dassault's ACT 92 studies for the ill-fated European Combat Aircraft

the intakes for high angles of attack and to refine aircraft subsonic and supersonic aerodynamics. Computer-designed, digitally controlled machine tools allow wind-tunnel models to be produced in shorter times.

Lacking Government support for the development of a new fighter, Dassault has sought more limited backing for a demonstrator programme that would reduce some of the technical risks and keep its design team intact until development of a new fighter can begin in earnest in the second half of this decade.

"We consider it to be even more important to keep our workforce intact than to develop technology," says one Dassault official. "No doubt, the ACX will prove a vital force for the engineering department and prototype workshops. It is essential that the creative fund be maintained," he concludes.

Design definition and wind-tunnel testing continue to provide employment for several Dassault departments, and real experience for young engineers and technicians joining Dassault. This ensures a continuity of design expertise, and problems overcome in the development of ACX will reduce both the time and cost of a 1995 fighter for the French Air Force or Navy.

Dassault has sufficient production work at present, but is facing a down-turn in output from the mid-1980s, when a new aircraft would be reaching the manufacturing stages.

The Mirage III and its derivatives continue to be built at a rate of two a month to complete orders for some 1,400 aircraft. The current backlog will be fulfilled by 1984, however, and Dassault has launched the Mirage IIING as a low-cost alternative to the F.1 and 2000.

Manufacture of the Mirage F.1 is running at five a month to meet orders for some 700 aircraft, and is expected to continue at least until 1986, but at a slower rate once French Air Force orders have been fulfilled.

Dassault's major production programme for the 1980s is the Mirage 2000. Over the past year the first export orders have been secured, from Egypt (20 aircraft), India (40), and Peru (26). Abu Dhabi is said to be close to buying the aircraft.

The first Mirage 2000 for the French Air Force flew late last year, and although the planned total has not changed, the rate at which the Service is buying aircraft has been slowed drastically.

On the international market the Mirage 2000 has encountered stiff competition, losing to the McDonnell Douglas F-18 in Australia and Spain, both already Mirage operators. In Greece the 2000 is again facing the F-18, while Mirage operators such as Pakistan and Venezuela have bought General Dynamics F-16s.

Faced with this reduction in potential business for the late 1980s, Dassault needs a new fighter programme. Meanwhile the French Air Force needs a Jaguar replacement, about 200 aircraft, but not until 1995. Development money will not be available before 1985, and ACX will keep Dassault ticking over until then.

The Mirage IIING uses technology developed for the Mirage 2000 including fly-by-wire flight controls and digital avionics

