FLIGHT International. 28 February 1974

Dornier/Breguet Alpha Jet design proposal was selected. Each country was committed to buy 200 aircraft. The original German schedule had called for first flight in 1972 and first delivery in 1975.
Now began the project definition phase, which saw the formation of a joint committee, the appointment of the French Armed Forces Ministry's Direction Technique de la Construction Aeronautique as management authority, the appointment of the merged Dassault-Breguet as prime con-tractor, with Dornier as "co-contractor", the determination of a fixed-price contracting policy, the principle of equal work sharing between the countries and the fixing of a target fly-away cost (an operable aircraft with necessary accessories) of Fr4-5 million (then about £340,000). Project definition, jointly between Dassault-Breguet and Dornier, took until February 1971, when the integrated Franco-German design team, which has been so successful,

Good visibility, uncomplicated structure and systems and good handling
have been design aims for the Alpha jet. This is prototype 01 at the
Istres test base in Southern France

was set up at Dassault's St Cloud factory on the outskirts of Paris, ft was at this stage that the two countries diverged on the project. France pressed for the utmost simplification of the design while, in April, Germany spelled out its firm requirement that the Alpha Jet was to be a full-time CAS aircraft intended to replace the licence-built Fiat G.91R/3 single-seater. While discussions continued, Dassault-Breguet and Dornier continued development on a private venture basis.

The end of uncertainty came with the signing in Feb-ruary 1971 of the Franco-German protocol launching the construction of four prototypes and the appointment of M Soissons, director of the French DTCA, and Dr Engel-mann of the Bundesamt fur Wehr und Beschaffung, Ger-many's weapon procurement executive, as co-directors of the programme. Dr Engelmann was subsequently succeeded by Dr Trienes. There was to be no duplication in airframe fabrication, but final assembly would take place in both countries for the respective air forces. Dornier would make wings, rear fuselage and tail: Dassault-Breguet the centre and forward fuselage. The engine programme now estab-lished is detailed on page 268.

A basically simple French version of Alpha Jet was to be retained, with Germany paying for the additions necessary for its CAS role. May 1972 saw the first programme meet-ing at Bordeaux and the placing of the order for the proto-types (Phase 1 of the programme).
Alpha Jet prototype 01 was to be assembled in France and flown at Istres; 02 assembled by Dornier in Germany, flown from Oberpfaffenhofen near Munich and equipped to cover the full French and German flight envelopes; 03 was again French, with the French training equipment fit and 04 was the German CAS equivalent. By November 1972 the first mock-up review had been successfully completed at Dassault's St Cloud experimental shops and equipment choice was completed in December. Equipment orders were to be shared between French and German suppliers.

Construction of the prototypes was rapidly achieved and the first flight was completed with due panache by Das-

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sault's Jean-Marie Saget from Istres on October 26 last year. On January 9, Dornier chief test pilot Dieter Thomas took the German-built 02 into the air from Oberpfaffen-hofen. Days later he ferried 02 to Istres for further tests and has since returned it to Germany for vibration trials with external loads. During the first ferry flight, the G.91 chase aircraft is said to have consumed twice as much fuel as the Alpha Jet.
At the time of writing, 02 was still undergoing resonance tests in Germany, having flown 14hr 40min in 12 flights. Prototype 01 was undergoing inspection at Istres after 63hr 40min flying in 53 flights. Flight test gear has been removed from the rear seat and 01 has flown with two occupants. Dassault-Breguet claims that the full flight en-velope has been explored.
So good has progress been that both 01 and 02 are ex-pected to fly at the Hannover air show in April, one with external stores. The first official demonstration at Istres on November 23 included a polished aerobatic display. Further sales have already begun. On September 13, 1973, the Belgian defence minister announced an order for 33 Alpha Jets in two batches of 16 and 17, in consideration of a certain amount of offset manufacture. Price was re-ported as BFr69 million each (about £650,000). Ultimate export market is estimated at something like 1,000 aircraft. While Alpha Jet's first flight was made six months ahead of the schedule laid down in mid-1972, first service de-liveries are now expected to be a few months late, at the beginning of 1977. Only 17 of the 88 Alpha Jet orders plan-ned by France for 1973-74 have actually been placed. Intended production rate is to be 15 per month from 1978. In the French training mission, Alpha Jet's low-level en-durance with internal fuel is an excellent lhr 40min and two pylons can accommodate weapons or external fuel. A ventral pack is to be designed to carry a 30mm Defa cannon and 150 rounds. Avionics will be simple, including UHF/ VHF communications, IFF, Tacan and VOR/ILS. Sydac might later be added Martin-Baker Mk 4 ejection seats with 90kt, zero-height capability are specified.

ALPHA JET vs G.91 R 3 IN CAS ROLE

Power

Basic weight
Useful load
T/ O weight

Win g loading

Power loading

T/ O run

Max speed
Touchdown speed
Endurance
(defined load)
Radius of action
External load

Alph
27kN

3,475kg
3,400kg
5,000kg-
7,000kg
270kg/m2-
400kg/m2

la Jet
5,960lb
7,660lb
7,4901b
11,0251b-
15,3401b
31-3lb/sq ft-
57-2lb/sq ft
1-85lb/lb-
2-6lb/lb
480m-
1,150m
1,000km/hr
189km/hr

1,580ft-
3,800ft
535kt
102kt
1hr 30min

300km
2,000kg

186 miles
4,400lb

G.91 R/3
22-7kN

3,600kg
2,300kg
4,900kg-
5,900kg
300kg/m2-
360kg/m2

4,050lb
7,930lb
2,540lb
10,7801b-
13,0001b
70-9lb/sq ft-
85 4lb/sq ft
2-15lb/lb-
2-6lb/lb
750m-
1,150m
1,000km/hr
240km/hr
35m i

130km
1,000kg

2,640ft-
3,800ft
535kt
129kt
n

81 miles
2,200lb

For the German requirement for close air support, the main additions are two inner pylons for weapon loads, the port pylon also adaptable for a reconnaissance pod. Being intended only for runway operation, the CAS aircraft has non-skid brake control, hydraulic nosewheel steering, arrester hook and Martin-Baker Mk 10 zero-zero ejection seats. The German gun pack may contain the new 27mm Mauser cannon selected also for the MRCA. Avionics include different intercom and IFF systems, pitot head and angle of attack sensor, Tacan/Setac plus computer for navigation and approach and UHF-only communications, all serviced by increased inverter capacity. The German features weigh 150kg, 3301b.

Dassault-Breguet and Dornier may well prove to have been ideal European partners for the Alpha Jet pro-gramme, being relatively small, close-knit companies with aggressive private ownership and a proven record of tech-nical expertise and sales energy. In fact, the partners appear to be satisfied with each other's outlook and techniques.
It seems clear, too, that the inter-government manage-