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ALPHA JET

The co-operative

trainer/attack aircraft

By MAR K LAMBERT, International Editor

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T HAS ALWAYS been possible to use last year's fighter as this year's trainer. It seems now that tactics and tech-nology have made it possible to produce a new aircraft which effectively combines training and close air support without undue penalties. So it is with Dassault-Breguet and Dornier's Alpha Jet.

For the German air force, Alpha Jet will be a G.91R/3 replacement with a distinct step up in performance. For France, Alpha Jet will provide a much needed replace-ment for T-33 and Mystere IVA in the advanced flying training and operational conversion sectors of the fighter-pilot training course.
In the export market, for which it is most certainly also intended, Alpha Jet competes with Sweden's Saab 105G, a trainer developed with a CAS bias, and Britain's Hawker Siddeley Hawk, a Gnat trainer replacement with CAS pro-pensities. Tables on this page and page 265 indicate how closely the three types resemble each other, how far they will improve, in the 1970s, on the older armed trainers and how well the Alpha Jet will replace the Italian G.91 R/3 in German service.

Alpha Jet had its origins during the mid-1960s, when it became evident both in Germany and France that a new trainer was becoming necessary. During 1967 and 1968 Dornier mooted the P.375 project for a "modular" trainer capable of reproducing a variety of flying characteristics and, by fitting different wings to a basic fuselage, of pro-viding subsonic or supersonic performance. During 1968, the French air force framed a tentative trainer require-ment and the two countries then discussed the possibility of a joint development.
By the end of the year, Germany had issued a first outline requirement for a supersonic trainer, and industry responded by forming two design teams: MBB with Snias and Dornier with Breguet. From this point until summer 1970, the emphasis of leadership shifted gradually from Germany to France, the two national operational require-ments hardened and the engine was chosen. Dornier-Breguet's TA-501 Alpha Jet was in competition with the MBB/Snias E650 Eurotrainer project and the German-onlv VFW T291.

By July 1969, the Governments had agreed to co-operate, the competing designs were narrowed to two and France had issued a preliminary military specification. Dornier had by now examined seven different configurations and chosen No 2, which is still the basic Alpha Jet layout, as the only one showing good behaviour in all conditions, including spin, deep stall, pitch-up, trim change, landing and high speed. Free-model spinning tests had been carried out in a wind tunnel.

During these months the engine was chosen. Two con-tenders had been the 29,0001b-thrust GE J85 and the Snecma/Turbomeca Larzac 02 of lower thrust. The Ger-

man CAS mission called for high thrust and the uprated Larzac 04, giving the same thrust as the GE engine, tipped the scales in favour of a European powerplant.
In July 1970 the two air forces issued their joint defini-tive military characteristics for the new trainer and the

COMPETING/LIGH T ATTACK/TRAININ G AIRCRAF T

Tandem / Weapo n load
side by Max T/ O weight
side empt y weight Guns

Max speed/
altitude/
limiting
Win g area Mach No. Rate of climb Status

Alpha Jet

Hawker Siddeley
HS.1182 Haw k

Saa b 105G

Aermacchi*
MB.326G

BAC1S7
Strikemaster

2XTurbomeca
Larzac 04
2,960lb; 13 4kN
1 xR-R/Turbomeca
Adour 151
5,340lb; 24-2kN

2XG E J85-GE-17B
2,850lb;15-5kN

1XR-R Viper 535
3,4101b; 15-5kN

1xR- R Viper 535
3,4101b; 15-5kN

T

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S

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S

4,850lb
15,4001b
6,9441b
5,0001b
15,6101b
7,0001b

5,1801b
14,3301b
6,8341b
4,0001b
11,5001b
5,6401b
3,0001b
11,5001b
6,1951b

2,200kg
7,000kg
3,150kg
2,270kg
7,080kg
3,175kg

2,350kg
6,500kg
3,100kg
1,814kg
5,216kg
2,558kg
1,360kg
5,216kg
2,810kg

1 X30mm
2x 0 5in
ext
1 x 30 m m
ext

2x30m m
ext

2 x 30mm
ext

2x7-62m m
int

188 4 sq ft

180 sq ft

175 sq ft

208 sq ft

213 sqf t

535kt
S.I.
0-85
516kt
36,000ft
0 9

518kt
S.I.
0 86
468kt

0-82
425kt
S.I.
0-75

8min to
36,000ft

3-2min to
5,000m

11,155ft/min

3min 10sec
to 10,000ft

5,250ft/min

Flew October 1973; deliveries
early 1977; 433 ordered by
France, Germany & Belgium
Flies mid-1974, deliveries late
1976; RAF orders for 175;
programme cost "about £90
million"
105G flew 1972; earlier ver-
sions in service

In production in Italy, Brazil
and South Africa

115 built; in production; unit
cost "about £350,000"

• Also MB.326K light strike aircraft with no training capability (single-seat); proposed uprated MB.326L trainer not yet built.