COMPARATIVE DATA AND PERFORMANCE

%

*Cabin
Width (ft)
Height
Length
Passengers
Weights (lb)
Typical empty
operating
Max payload
Max fuel
Ramp
Max take-off
Max landing
Performance
Normal max
cruise (kt)
Long-range
cruise (kt)
Balanced field
length (ft)
Max range.
NBAA VFR, n.m.
(45 min reserve)
Max range.
NBAA IFR, n.m.

Challenger
601

8-2ft
6 1
28 3
9/19

23,925
4,125
16,725
41,800
41,650
36,000

432

402

5,100

3,815
(est.)

3,600
(200 n.m. divert & hold)

Falcon
50

6-1
5-9
23-4
9/10

20,460
3,790
15,520
38,800
38,800
35,715

430

410

4,750

3,700

3,400

Gulfstream
III

7 0
6-1
24 3
14/19

38,300
4,200
28,300
68,700
68.200
58,500

459

445

5,850

4,150

3,650

each climb, so choice of climb schedule is important; anticipated excess time to be taken at low level with reduced thrust.

North of Quimper we cleared under ra-dar to FL450, the maximum operating al-titude. (Then, at 30,0001b, the aircraft should be at its lOOft/min ceiling.) The autopilot was engaged at FL300. The auto-pilot controller is at the rear of the ped-estal, with one heading and two course selectors aft. My flight director mode en-gage buttons were also in this area, while the copilot had a separate set in a more sensible position near the flap lever. Mode annunciation is at the top of the flight displays, in three adjacent 2x 5 arrays: each shows pilot left, copilot right, and marker, etc, between. It takes a little get-ting used to.

I was able to adjust the selected pitch mode datum, keeping the synchroni-sation button on the control wheel pressed and altering the pitch angle. At PL350 the climb rate was still about l,500ft/min. One VOR/DME controller shares a box

Falcon 50 in final assembly; more than 100 are in worldwide service, with 18 in Europe

with VHF1, the other with ATC 1 and 2.
VHF 2 only, in a separate box, has fre-
quency pre-select; this is the preferred
unit for routine communications, an odd
but not inconvenient layout. In this air-
craft Global Nav was fitted top right and INS top left of the pedestal; INS mode selection is from the left console, below the audio selector panel.
Brief turbulence marked the tropopause at FL400, passed at nearly l,000ft/min. Here, as previously, the reaction was a quick reponse—more like vibration or judder. We levelled off from nearly 500ft/min—27min from take-off, against 33min calculated. The 1,6601b fuel burn was spot-on, in spite of excursions in the climb.

Mach -715, IAS 189kt, would be the long-range cruise speed at 30,0001b—just above the 1 • 3g low-speed buffet margin for FL450. Thrust was retained for accel-eration to Mach -75; I reckoned it took

Total baggage capacity is 115ft3

; the wing has two separate slot sections

ADDITIONAL FALCON 5 0 LEADING DATA

length 60-8ft, 18-5m,

Dimensions
Wingspan 61-9ft, 18 9m;
height 229ft, 6 9m.
Performance
Max altitude 45,000ft; VMO 350kt, 650km/hr, at s.l., 370kt, 680km/hr at 10,000ft, 3,000m; MMO Mach 0-86; Stall (at 30,000lb, 13,600kg in landing config-uration) 84kt, 155km/hr; Vmca 825kt, 152km/hr; bal-anced field length (ISA, s.l., max take-off weight) 4,750ft, 1,450m; FAR 121 landing distance 4,900ft, 1,500m.

nearly 5min to add 20kt TAS—more in tune with a lOOft/min ceiling.
Cockpit bleed air was removed to assess airflow noise—not really noise, but a hiss over the well-profiled nose and screen; bleed restored, and discreet lower pitch was added. Ventilation was good. I briefly visited the cabin and found it quiet, too; conversation was easy against the light hum of the Garretts.

Systems redundancy

Back in the cockpit the conversation turned to systems' redundancy. Herve Rinquet, as senior Dassault test pilot, was better acquainted with the limits—or lack of them. My "copilot" for the day wanted to switch off a booster pump.
Fuel is fed by three transfer pumps from the wing and centre tanks to the fuselage triple tank (between the cabin and hold). This is both a main and feeder tank; it can be loaded to 5,2701b (2,390kg)—about a third of the 15,5201b capacity—and oper-ates to a minimum float level of about

6001b. Boosters deliver from the fuselage tank sections to the engines.
At 45,000ft number 3 booster was
switched off. A pause, and the hand con-
tinued rapidly to switch off all boosters
and transfer pumps! We did not glide. The
fuselage tank is independently bleed-air
pressurised, and the wing to fuselage lines

FLIGHT International, 1 January 1983 n