DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A50NM
Dassault Aviation
Falcon 2000

December 19, 1995

TYPE CERTIFICATE DATA SHEET No. A50NM

This data sheet which is part of Type Certificate No. A50NM prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the US Federal Aviation Regulations.

Type Certificate Holder Dassault Aviation
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75008 PARIS
FRANCE

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c).

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country of manufacture (e.g. third party country) is FAR 21.183(d) or 21.185(b).

Notwithstanding that the FAR referenced in the above paragraph does not specifically address or require a foreign civil airworthiness authority certification, such certification is the only practical way for an applicant to show, and the Federal Aviation Administration (FAA) to find conformity to the FAA-approved type design and conditions for safe operation.

Additional guidance is contained in FAA Advisory Circular 21-23, Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products Imported into the United States.

1. **Model FALCON 2000 (Transport Category Airplane) approved February 2, 1994**

Engines	2 engines. CFE Company, Model CFE 738-1-1B *(see NOTE 3b)*		
Engine Limits	Static, Standard, Sea Level		
	Take-off (5 min)	5,725 lb	(2,547 daN)
	Maximum Continuous	5,560 lb	(2,474,daN)
	Maximum Steady State Rotor Speeds		
	Low pressure rotor (N1)		RPM 9,400 (96.7%)
	High pressure rotor (N2)		
	5 minutes		RPM 28,000 (106%)
	Continuous		RPM 27,709 (104.9%)

Engine Limits (cont'd)

Turbine Interstage Temperature Limits

Ground starting	815 °C
Air starting	864 °C
Maximum take-off (5 min)	877 °C
Maximum take-off (2 min)	890 °C
Maximum continuous	861 °C
Airstart transient (10 sec)	890 °C
Airstart transient (2 sec)	1000 °C

Oil Temperature

Maximum continuous	138 °C
Minimum continuous	30 °C
Maximum transient (3 min)	155 °C

Fuel Pump Inlet Pressure

Minimum	5 psi above true vapor pressure
Maximum	50 psig

Oil Pressure

Idle	30-85 psig
Normal operating range	60-85 psig
Maximum transient (3 min)	100 psig (may be exceeded for 2.5 min. in case of a cold start (temp < 0 C))

Thrust Reversers

Thrust reverser use is not approved, unless Dassault Aviation change M3B has been incorporated.

APU

Allied Signal Model GTCP36-150 (F2M)

Limitation

Maximum operating starting altitude	35,000 ft
Maximum N1 (%)	110
Exhaust gas temperature, Steady	746 °C
Exhaust gas temperature, Starting	974 °C
Maximum oil temperature	163 °C
Minimum oil pressure	35 psi

Operation of the APU with passengers in the cabin and without crew member monitoring is not authorized.

Airspeed Limits

Unless otherwise stated, speeds are indicated airspeeds

VMO (Maximum Operating)

350 kt at sea level, 370 kt at 10,000 ft with straight line variation between those points.
370 kt from 10,000 to 25,000 ft

MMO (Maximum Operating)

M = 0.862 from 25,000 to 38,000 ft
0.862 at 38,000 ft, 0.85 at 42,000 ft with straight line variation between those points
0.85 above 42,000 ft

Airspeed Limits (cont'd)

VA (Maneuvering)	198 kt
VFE (Slat and Flap Speeds)	
Slats + Flaps 10°	200 kt
Slats + Flaps 20°	160 kt
Slats + Flaps 40°	160 kt
VLO (Landing Gear Operation)	190 kt
MLO	0.70
VLE (Landing Gear Extended)	245 kt
MLE	0.75
VMC (Minimum Control Speed)	
Flight	90 kt
Windshield Wiper Operation	215 kt
Direct Vision Window	215 kt

CG Range
(Gear Extended)

a. Without Option M57

Weight (lb)	Forward Limit (% MAC)	Rearward Limit (% MAC)
36,000	16.7	26.2
33,000	14	-
28,660 or less	14	32.5

b. With Option M57

Weight (lb)	Forward Limit (% MAC)	Rearward Limit (% MAC)
36,500	17.2	25.8
33,000	14	-
28,660 or less	14	32.5

Straight line variation between points.
Gear retraction has negligible effect on CG range.

Datum

Datum is 25% of mean aerodynamic chord (MAC) which coincides with fuselage station FS + 400.43 in (Fuselage station reference +0 is the foward end of the airplane nose cone).

Mean Aerodynamic chord (MAC)

Length 113.69 in
Zero percent MAC is at FS +372.01 in

Leveling Means

Standard bubble type level to be installed on the passenger seat tracks

Weight Limitations

	Without Option M57	With Option M57
Maximum ramp	36,000 lb	36,500 lb
Maximum take-off	35,800 lb	36,500 lb
Maximum landing	33,000 lb	33,000 lb
Maximum zero fuel	28,660 lb	28,660 lb
Minimum flight		
at 14% CG	23,075 lb	23,075 lb
at 32.5% CG	20,100 lb	20,100 lb

Minimum Crew

2 - Pilot and copilot

Maximum Passenger Seats

19 - limited by emergency exit requirements of Federal Aviation Regulations § 25.807(c)

Maximum Baggage

Baggage compartment 1,600 lb
(not to exceed 61.4 lb per sq ft)

Fuel Capacity

Nominal - Refer to weight and balance report of each airplane for exact capacity
Refer to NOTE 1(b) for data on unusable system fuel and oil

Usable Fuel	**US Gallons**	**Pounds**	**Arm (in)**
LH outboard wing	348.4	2,334	22.64
LH inboard wing	213.7	1,432	-27.68
LH center wing box	216.9	1,453	-37.76
LH Feeder tank	127	851	-16.34
RH outboard	349.2	2,340	22.64
RH inboard wing	214.1	1,435	-27.68
RH center wing box	217.4	1,457	-37.76
RH feeder tank	127.3	853	-57.87
Total Usable	1,814.0	12,155	
Total Fuel	1830.3	12,259	

Pressure Fueling

Maximum 50 psi

Oil Capacity
(each engine)

Refer to NOTE 1(b) for data on unusable system fuel and oil
Usable 0.55 US gallon
Total 1.25 US gallon

Maximum Operating Altitude

47,000 ft

Control Surface Movements

Elevator	Down 16°	Up 20°	
Rudder	Right 29°	Left 29°	
Aileron	Up 25°20´	Down 24°50´	
Flaps	Down 40°		
Airbrakes	Inboard up 68°		
	Center up 50°		
	Outboards up 37°		
Wing slats	Down 30°		
Stabilizer	Electrical stops	AND 2°	ANU 10°
	Mechanical stops	AND Max 2°30´	ANU Max 10°30´
	Structural stops	AND Min 2°40´	ANU Min 11°

Rigging tolerances are included in Maintenance Manual

Data Pertinent to all Models

Fuels

Fuels conforming to General Electric specification No. D50TF2, current revision
See NOTE 4
The above mentioned fuels and additives are also suitable for the APU

Oils

Oil conforming to General Electric Specification No. D50TR1, or Allied Signal oil Specification EMS 53110, current revision
See NOTE 5

Manufacturer Serial Number Eligible

A French "Certificat de Navigabilité pour Exportation" endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for US certification is made.

Import Requirements

An FAA standard Airworthiness Certificate may be issued on the basis of a French "Certificat de Navigabilité pour Exportation" signed by representative of the Direction Générale de l'Aviation Civile (DGAC) of France, containing the following statement: "The airplane covered by this certificate has been examined, tested and found to conform to the type design approved under Type Certificate No. A50NM, and to be in a condition for safe operation."

Certification Basis (FALCON 2000)

1. FAR, Part 25 as amended by Amendment 25-1 through 25-69.
In addition, Dassault Aviation has elected to comply with amendments 25-71 for § 25.365(e), 25-72 for §§ 25.783(g) and 25.177; 25-75 for § 25.729(e); 25-79 for § 25.811(e)(2) and 25-80 for § 25.1316

2. FAR Part 34, original issue (Fuel Venting and Exhaust Emissions)

3. FAA, Part 36 as amended by amendment 36-1 through 36-20

4. FAA, Special Conditions:
   25-ANM-90 - High Altitude Operation
   25-ANM-91 - High -Intensity Radiated Fields
   25-ANM-94 - Automatic Takeoff Thrust Control System

5. FAA Exemption No. 5991 (for side facing sofa)

For precision approach and landings, the applicable technical requirements are complemented by FAA Advisory Circulars (AC) 120-29 and AC 120-28(c)

For the automatic flight control system, the applicable technical requirements are complemented by AC 25.1329-1A for cruise.

Equivalent safety findings exist with respect to the following requirements:
- Design gust criteria, (refer to Issue Paper (IP) A-5)
- Use of the 1-g stall speeds instead of minimum speed in the stall as a basis for determining compliance (refer to IP F-1)
- Rejected take-off and landing performance (refer to IP F-3)
- N2 Digital Indication (refer to IP P-10)
- Flight Critical Thrust Reverser Certification (refer to IP P-7)

Compliance has been shown to the following optional requirement:
- Ditching, FAR § 25.801
- Ice Protection FAR § 25.1419

Type Certificate A50NM issued February 2, 1995
Reference date for type certification: November 30, 1989

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed on the aircraft for certification. The lists of all equipment as well as optional equipment approved by Direction Générale de l'Aviation Civile (DGAC) of France are contained in the documents:

- DTM 38-2000/90 (01-940) - Equipment list of the basic airplane
- DTM 38-0735/91 (01-941) - Equipment list of the standard option and other options

In addition, the aircraft must be operated in accordance with the DGAC approved FALCON 2000 Airplane Flight Manual, document DTM 537 approved February 2, 1995

Service Information

Service bulletins and repair instructions (bulletins, letters, etc), structural repair manuals, aircraft flight manuals, overhaul manuals and maintenance manuals, published in the English language, that indicate applicability to the U.S. approved Model Falcon 2000 type design and that contain a statement that the document is "Approved by DGAC.", are accepted by the FAA and are considered FAA approved. These approvals pertain to the type design only.

All Mandatory Service bulletins will be have an authorized signature of the DGAC approval authority.

Other available service documents include:
Structural Repair Manual
Illustrated Parts Catalog
Wiring Diagram Manual
Maintenance Manual

NOTES

NOTE 1 - Weight and Balance

(a) Current weight and balance report including a list of equipment included in certificated empty weight, and loading instructions when necessary must be provided for each aircraft at its delivery.

(b) The following must be included in the airplane empty weight:
- The total unusable fuel, 109 lb, list as follows, plus
- The unusable engine oil, 4.1 US gallons, 34 lb, (drainable and trapped oil) at arm + 150 in, and
- The hydraulic fluid 83 lb at are + 127 in

Unusable Fuel	**US Gallons**	**Pounds**	**Arm (in)**
Drainable	5.3	35	-37
Trapped (tanks and lines)	11	74	+14
Total unusable fuel	16.3	109	

(c) The airplane must be loaded in accordance with the FALCON 20000 Loading Manual (DTM 541) and the CG must be within the specified limits at all times.

NOTE 2 - Reserved

NOTE 3 - Service Life Limits and required Maintenance/Inspections

(a) Airframe components which are life limited, and associated retirement times, are presented in DGAC approved chapter 5.40.00 of the FALCON 2000 Maintenance Manual, and must be replaced as indicated therein.

(b) Engine life limits, established for critical rotating components, are published in the approved Engine Light Maintenance Manual, Report Number 72.08.03, Airworthiness Limitation Section.

(c) Required maintenance and inspections to maintain airworthiness based on involving reliability are presented in DGAC approved chapter 5.40.00 of the FALCON 2000 Maintenance Manual.

NOTE 4 - Fuel Specifications and Additives

(a) For information concerning equivalent fuel specifications, see Airplane Flight Manual

(b) Additives

For the CFE 738 engines and GTCP 36-150 auxiliary power unit, the following additive limitations are approved.

- Anti-icing additives, conforming to AIR 3652 of MIL-I 27686 D or E (JP-4/JP-8) or to MIL-I 85470 (JP-5) or equivalent are approved for use in the fuel in amounts up to 0.15 per cent by volume.
- SOHIO BIOBOR JF biocide additive, or equivalent, is approved for use in fuel at a concentration not exceeding 270 PPM
- Anti-static additive is approved for use in fuel at a concentration not exceeding 1 PPM for SHELL ASA 3 and 3 PPM for STADIS 450

NOTE 5 - Qualified Oils

(a) Engine: See CFE 738 Engine Installation Manual IM 75 550 for specific oils approved per the subject specification.

(b) APU: Brand names of oils approved for use in the APU are listed in the GTCP36-150 Maintenance Manual

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