

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

A33EU
Revision 4
DASSAULT AVIATION
Falcon 10

March 2, 2010

TYPE CERTIFICATE DATA SHEET NO. A33EU

This data sheet which is a part of Type Certificate No. A33EU prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: DASSAULT AVIATION
(See NOTE 6) 9 Rond Point des Champs Elysees
75008 Paris
France

I - MODEL FALCON 10 (Transport Category Airplane), Approved September 20, 1973

Engines 2 - Airesearch Manufacturing Company of Arizona, Model TPE731-2-1C
(FAA Engine Type Certificate E6WE-1)

Fuel Fuels conforming to Airesearch Manufacturing Company of Arizona specifications:
EMS 53111 (Type JET A)
EMS 53112 (Type JET A 1)
EMS 53113 (Type Jet B and JP4)
EMS 53116 (Type JP5)

Aviation gasoline, MIL-G-5572D, grades 80/87, 100/130 and 115/145, not in excess of 500 gallons per 100 hours of operation, may be used in emergencies.

Shall ASA-3, anti-static additive, or equivalent, in amounts to bring fuel up to 300 conductivity units, is permissible except that in no event shall the additive exceed 1 ppm.

MIL-I-27686E inhibitor, icing, fuel system, or equivalent, is approved for use in fuel in amounts up to 0.15 percent by volume.

If a different type of fuel is used, or a mixture of fuels is used, the engine computer must be adjusted (to adapt the computer to the density of the fuel used) in order to preserve both the starting characteristics and the acceleration and deceleration characteristics of the engine.

Oil Oils conforming to Airesearch Manufacturing Company of Arizona Specification EMS 53110, Class B.

(Service Information letters of the Airesearch Manufacturing Company of Arizona give brand names of oils conforming to the above specification).

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Engine Limits

Maximum takeoff static thrust, up to 86°F		
Sea level conditions (5 minutes)	lb.	3,230
Maximum continuous static thrust, up to 86°F		
Sea level conditions	lb.	2,966
Maximum permissible engine operating speeds (Takeoff and maximum continuous)		
Low pressure rotor (N ₁) RPM	20,688	Percent 100%
High pressure rotor (N ₂) RPM	29,692	Percent 100%
Maximum permissible interstage turbine temperature (ITT)		
During starting	860°C (1,580°F)	
Takeoff (5 minutes)	860°C (1,580°F)	
Maximum continuous	832°C (1,530°F)	
Oil pressure limits		
At idle, psig	25 to 46	
Takeoff and maximum continuous psig	38 to 46	
Oil temperature		
Maximum from sea level up to 30,000 ft.	113°C (235°F)	
Maximum above 30,000 ft.	132°C (270°F)	
Minimum	-40°C (-40°F)	
Fuel pressure		
Minimum fuel pressure warning, psi	4.5	

Airspeed Limits

V _{MO} (Maximum Operating)	
350 kts at sea level; 370 kts at 10,000 ft., with straight line variation between those points.	
370 kts from 10,000 ft. to 25,000 ft.	
M _{MO} (Maximum Operating)	
M = 0.87 above 25,000 ft.	
V _A (Maneuvering)	220 kts
V _{FE} (Slat and Flap Speed)	
Slats	200 kts
Slats + Flaps 15°	190 kts
Slats + Flaps 30°	165 kts
Slats + Flaps 52°	165 kts
V _{LO} (Landing Gear Operation)	190 kts
V _{LE} (Landing Gear Extended)	220 kts
Windshield Wiper Operation	190 kts
V _{MC} (Minimum Control Speed)	
In flight	97 kts
On ground	100 kts

C.G.Range (Gear Extended)

Weight(lb)	Forward limit % MAC			Aft limit % MAC
	Takeoff	En Route	Landing	
18,300	25	25	--	31
17,200	21.2	21.2	21.2	31
15,720	16	16	16	31
13,230	16	14	14	31
9,920	16	14	14	31

Straight-line variation between points shown.

Gear retraction moment is + 1750 in.lb.

Datum	Datum is 25% of mean aerodynamic chord (MAC) which is marked on aircraft and coincides with Fuselage Station (FS) + 268.28 inches. (Fuselage station +0 is the forward end of the aircraft nose cone.)	
Mean Aerodynamic Chord.	Length	80.54 in.
	Zero % MAC is at FS	+248.15 in.
Leveling Means	A bubble-type level, when placed on the top of bolt heads (with locknuts) on the floor of the fuselage rear compartment, facilitates leveling of the airplane in the longitudinal and lateral directions.	
Weight Limitations	Maximum Weights Maximum ramp 18,300 lb. Maximum takeoff (brake release) 18,300 lb.(See NOTE 3 and 4) Maximum landing 17,200 lb. Maximum zero fuel 12,460 lb (See NOTE 3) Minimum weight 9,920 lb	
Minimum Crew	2 - Pilot and co-pilot	
Maximum Passengers	9 with appropriate approved passenger provisions for cabin interior and approved seating arrangement. (AMD Production Memo No. 1908 identifies approved passenger provisions and seating arrangement for a maximum of 7 passengers). 0 - without passenger provisions for cabin interior but incorporating AMD Ferry Kit per Production Memo No. 751.	

Maximum Baggage

Compartment	Weight (lb)	Arm*(in)
In the coat rack		
- without galley, with retainer	180	-110.0
- with galley	90	-102.5
On the rear tank	500	+44.5
On the folded back of the three-people divan	500	+ 9.5

* Arm is taken from 25% MAC.

Fuel Capacity

(Average - Refer to weight and balance report of each individual airplane for exact capacity).

	U.S. Gallons	Pounds	Arm (in)
USABLE FUEL			
in both wings	470.0	3,150	-7
in both fuselage tanks	<u>412.0</u>	<u>2,762</u>	<u>+47</u>
TOTAL USABLE	882.0	5,912	+18
UNUSABLE FUEL			
- Drainable unusable fuel			
in both wings	1.0	7	-7
in both fuselage tanks	3.5	24	-47
- Tank trapped fuel			
in both wings	1.0	7	-7
in both fuselage tanks	-	-	-
- Line trapped fuel	0.5	4	+50
- Engine trapped fuel	1.5	10	+55
TOTAL FUEL			
in both wings	472	3,164	-7
in both fuselage tanks	415.5	2,786	+47
in lines and engines	<u>2.0</u>	<u>14</u>	<u>+54</u>
TOTAL	889.5	5,964	+18

Pressure Fueling

Maximum pressure for pressure fueling is 50 psi.

Oil Capacity (each engine)	Usable, 0.5 U.S. gallon (at Arm + 75 in.) Unusable, 2.25 U.S. gallon (at Arm + 75 in.)			
Maximum Operating Altitude	45,000 feet			
Control Surface Movements (Control Stops)	Elevator	Up	18°30' (±10')	Down 12° (± 10')
	Rudder	Right	35° (± 10')	Left 35° (± 10')
	Aileron	Up	15°30' (+0°10' -0°30')	Down 13°30' (+0°10' -0°30')
	Flaps	Down	52° (±30')	
	Airbrakes	Up	50°	
	Wing slats	Internal	20° (+30' -0)	
		External	31°10' (+30' -0)	
	Stabilizer:			
	Electrical stops:	Nose down 0°14' (±10')	Nose up 12°16' (±10')	
	Mechanical stops:	Nose down (max) 0°35'	Nose up (max) 12°55'	
	Structural stops:	Nose down (min) 1°	Nose up (min) 13°15'	
Serial Numbers Eligible	A French “Certificat de navigabilite pour Exportation” endorsed as noted under “Import Requirements”, must be submitted for each individual aircraft for which application for U.S. Certification is made.			
Import Requirements	The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Direction Générale de l'Aviation Civile (DGAC) of France on behalf of the European Community. The Export C of A should contain the following statement: ‘The aircraft covered by this certificate has been examined, tested, and found to conform with Type Design approved under U.S. Type Certificate No. A33EU and to be in a condition for safe operation.’			
Certification Basis	FAR Part 25 dated February 1, 1964, including Amendment Nos. 25-1 through 25-20. FAR Part 36, including Amendment 36-1. FAA Special Conditions No. 25-49-EU-14, dated April 16, 1973. Type Certificate A33EU issued September 20, 1973. Date of Application for Type Certificate: June 18, 1969. The Direction Générale de l'Aviation Civile (DGAC) of France originally type certificated this aircraft under its type certificate Number 142. The FAA validated this product under U.S. Type Certificate Number A33EU. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Direction Générale de l'Aviation Civile (DGAC) of France.			
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed on the aircraft for Certification. The equipment list for Falcon 10 contains lists of all equipment as well as optional equipment approved by Secretariat General a l’Aviation Civile (SGAC) of France. In addition, the following is required: (a) SGAC or FAA-approved Falcon 10 Airplane Flight Manual, approved October 17, 1973 (b) Nose wheel must be equipped with a chined tire.			
Service Information	Each of the documents listed below that contain a statement that it is approved by the European Aviation Safety Agency (EASA) - or for approvals made before September 28, 2003 - by the Direction Générale de l'Aviation Civile (DGAC) of France, are accepted by the FAA and are considered FAA approved. Additionally, approvals issued by Dassault Aviation under the authority of EASA approved Design Organization EASA.21J.051 - or for approvals made before September 28, 2003 - under the authority of DGAC Design Organization Approval No. F.JA.03 are considered FAA approved. These approvals pertain to the type design only. • Dassault Aviation Service Bulletins, except as noted below,			

- Structural repair manuals,
- Vendor manuals referenced in Dassault Aviation service bulletins
- Aircraft flight manuals,
- Repair Instructions.

Note: Design changes that are contained in Dassault Aviation Service Bulletins and that are classified as Level 1 Major in accordance with either the US/France or US/EASA Bilateral Aviation Safety Agreement Implementation Procedures for Airworthiness must be approved by the FAA.

NOTES

- NOTE 1. Weight and Balance.
- Current weight and balance report, including list of equipment in certificated empty weight and loading instructions must be provided for each aircraft at delivery.
 - The airplane must be loaded so that the CG is within the specified limits at all times with the effect of fuel used and a movement of crew and passengers from their assigned position being considered.
 - The following must be included in the airplane empty weight:
The total Unusable Fuel (52 lb.) listed under Fuel Capacity, plus unusable oil (36 lb. at +75 inches), plus hydraulic fluid (77 lb. at +45 inches).
- NOTE 2. Service Life Limits.
Service life limits for airframe structural components which are fatigue critical, if any, are listed in the FAA-approved Airplane Flight Manual for Falcon 10.
- NOTE 3. Airplane S/N 55 and subsequent, and prior serial numbers incorporating AMD/BA Modification No. 150 or Service Bulletin No. F10-0052, are eligible for operation at a maximum takeoff weight of 18,743 lbs. (8500 kg) in accordance with SGAC-approved Falcon 10 Airplane Flight Manual Revision No. 7 and at maximum zero fuel weight of 13,560 lbs (6150 kg) in accordance with DGAC-approved Falcon 10 Airplane Flight Manual Revision 10 on behalf of FAA.
- NOTE 4. Airplane S/N 212 and subsequent, and prior serial numbers incorporating AMD-BA Modification M151 or Service Bulletin No. F10-238, are eligible for operation with the following maximum weights, in accordance with DGAC-approved Falcon 10 Airplane Flight Manual Revision 23 on behalf of FAA.
- | | |
|---------------------------------|-----------|
| Maximum ramp | 19,405 lb |
| Maximum takeoff (brake release) | 19,305 lb |
| Maximum landing | 17,640 lb |
| Maximum zero fuel | 14,420 lb |
| Minimum flight weight | 9,920 lb |

The associate CG range (gear extended) is then as follows:

Weight(lb)	Forward limit % MAC			Aft limit % MAC
	Takeoff	En Route	Landing	
9,920	16	14	14	31
13,230	16	14	14	31
15,720	16	16	16	31
17,640	21.8	21.8	21.8	31
19,305	26.6	26.6		31
19,405	27			31

- NOTE 5. Airplanes incorporating AMD-BA Service Bulletin No. F10-0082 are eligible for operation on unpaved runways in accordance with DGAC approved Falcon 10 Airplane Flight Manual Supplement No 1 and F10 Flight Manual Revision 9, on behalf of FAA.
- NOTE 6. Effective June 19, 1990 the name of AVIONS MARCEL DASSAULT-BREGUET AVIATION changed to DASSAULT AVIATION. The new name will appear as of this date on all documents and nameplates. However, documents bearing the old name remain valid and will be updated when and where necessary.

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