

MINISTÉRIO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISA E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL

CERTIFICATE DATA SHEET N° EA-9004

CERTIFICATE HOLDER:

FOKKER AIRCRAFT B. V.
P.O. Box 7600
1117 ZJ Schiphol
HOLLAND

EA-9004

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FOKKER
AIRCRAFT B.V.

MODEL F.28 Mk0100

July 1993

I - FOKKER MODEL F.28 Mk0100 (Transport Category Aircraft) approved
September 21, 1990.

ENGINES

Two Rolls-Royce Two Shaft High Bypass Ratio Jet
Engines with Thrust Reversers: TAY 620-15 or TAY
650-15.

FUEL SPECIFICATION

Eligible engine fuels are listed in RLD approved
Brazilian Airplane Flight Manual.

FUEL CAPACITY

Useable fuel (See Note 1 for unuseable fuel)

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+-----+
|Location | Volume/liters (US Gal) | Weight/Kg (lb) | Arm/m (in) |
+-----+-----+-----+-----+
|Wing tanks | 9739 (2573) | 7799 (17190) | 17,07 (672.0) |
+-----+-----+-----+-----+
|Center tank| 3141 (830) | 2513 (5540) | 16,03 (631.2) |
+-----+-----+-----+-----+
| Total | 12880 (3403.0) | 10310 (22730) | 16,82 (662.1) |
+-----+
    
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Total useable fuel by pressure fueling is 12778 liters (3376 US Gal). Fuel weight based upon fuel density of 0,8 Kg/l (6.6 lb/US Gal).

OIL SPECIFICATION

Refer to RLD approved Brazilian Airplane Flight Manual.

OIL CAPACITY

Useable oil (see Note 1 for unuseable oil).

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+-----+
|Location | Volume/liters (US Gal) | Weight/Kg (lb) | Arm/m (in) |
+-----+-----+-----+-----+
|Each Engine| 5.3 (1.4) | 4,94 (10.9) | 24,01 (945.5) |
+-----+-----+-----+-----+
| Total | 10.6 (2.8) | 9,88 (21.8) | 24,01 (945.5) |
+-----+
    
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Oil weight based upon density of 0,938 Kg/l (7.74 lb/US Gal).

OIL PRESSURE LIMITS

Minimum acceptance for flight: Take-off 30 psi.

Minimum to complete flight: Low idle to 78% N2:
 16 psi rising to 25 psi at Max Continuous following a straight line relationship.

OIL TEMPERATURE LIMITS

Minimum for starting : minus 40°C
 Minimum before increasing power : minus 30°C
 Maximum (unrestricted) : plus 105°C
 Maximum (15 minutes) transient : plus 120°C

FUEL TEMPERATURE LIMITS

Minimum : minus 50°C
 Maximum (unrestricted) : plus 95°C
 Maximum (15 minutes) transient : plus 130°C

BLEED AIR.

For maximum bleed air extraction from the engine refer to CTA Engine Type Certificate Data Sheet n^o 9005.

ENGINE POWER

	TAY 650-15	TAY 620-15
	kgf (lbf)	kgf (lbf)
Max.T.O Thrust (5min)	6850 (15100)	6282 (13850)
Max.Continuous Thrust	6350 (14000)	6112 (13475)

ENGINE LIMITS

TAY 620-15

CONDITION	N ₁ %	N ₂ %	MAX TGT °C	TIME LIMIT
During starts and during relights	-	-	700	Momentary (not exceeding 2 seconds)
Max Take-off	95.5	103.5	800	5 minutes
Max Continuous	95.5	100.5	730	Unrestricted
Max Overspeed	98.3	106.6	-	20 seconds
Max Overtemperature	-	-	820	20 seconds
Low idle (Min)	-	47.9	-	Unrestricted
Note: This is a minimum below which N ₂ % should not fail				

ENGINE LIMITS

TAY 650-15

CONDITION	N ₁ %	N ₂ %	MAX TGT °C	TIME LIMIT
During starts and during relights	-	-	700	Momentary (not exceeding 2 seconds)
Max Take-off	95.5	103.5	850	5 minutes
Max Continuous	95.5	100.5	795	Unrestricted
Max Overspeed	98.3	106.6	-	20 seconds
Max Overtemperature	-	-	870	20 seconds
Low idle (Min)	-	47.9	-	Unrestricted
Note: This is a minimum below which N ₂ % should not fail				

NOTE 1.: 100 per cent N₁ = 8.393 rpm
100 per cent N₂ = 12.136 rpm

NOTE 2.: To avoid high fan blade stresses, stabilized ground operation in the N_1 rpm range of 60 to 80 per cent is not permitted with a static airplane and wind velocities in excess of 15 kts.

THRUST REVERSER LIMITS See RLD approved Brazilian Airplane Flight Manual.

APU TYPE Garrett GTCP 36/150 (R)

APU LIMITS

CONDITION	MAX.RPM %	MAX.T.G.T. °C
Starting	---	976
Continuous	105	719

APU FUELS

Eligible APU fuels are listed in the RLD approved Brazilian Airplane Flight Manual.

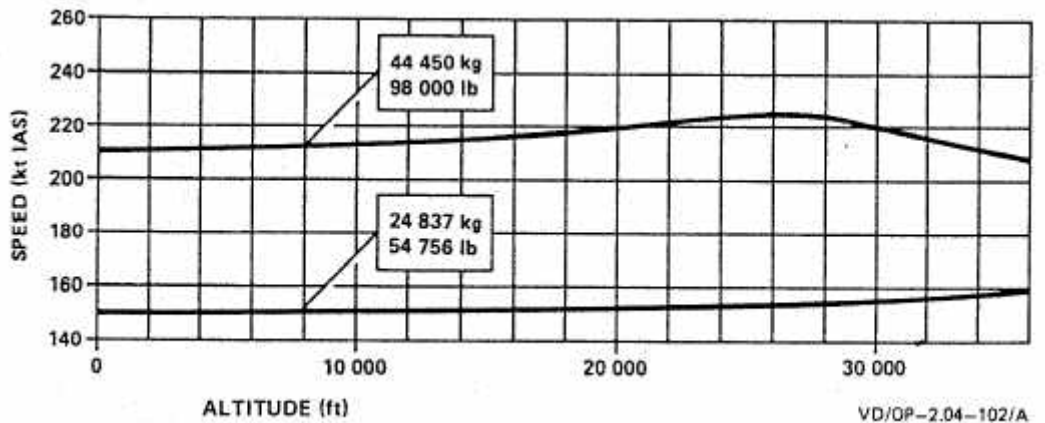
AIRSPEED LIMITS
(IAS)

V_{mo}/M_{mo}

Maximum operating limit speed 320 kts/M 0.77 For s/n 11276 and up.

V_A

Maximum design maneuvering speed:



V_{RA}/M_{RA}

Rough air speed: 250 kt (sea level)/M 0,65.

V_{FE}

Maximum flap extended speed:

flaps at 8° : 250 kts/M 0.50

15° and 25°: 220 kts/M 0.45

42°: 180 kts/M 0.36

Maximum flap extended altitude: 20,000 ft.

V_{LO}/V_{LE}

Maximum landing gear extended and operating speeds: 200 kts.

Maximum landing gear extended altitude: 25,000 ft.

Liftdumper extension speed: 170 kts.

MAXIMUM OPERATING ALTITUDE

35,000 ft.

MAXIMUM WEIGHTS

Max Taxi	Weight: 44,680 kg (98,500 lbs)
Max Take-off	Weight: 44,450 kg (98,000 lbs)
Max Landing	Weight: 39,915 kg (88,000 lbs)
Max Zero Fuel	Weight: 36,740 kg (81,000 lbs)

C.G. LIMITS (MAC %)

Take-off and Landing

(11,47) to (35,00) at 44,680 kg (98,500 lb)
 (11,51) to (35,00) at 44,450 kg (98,000 lb)
 (8,06) to (35,00) at 39,915 kg (88,000 lb)
 (7,00) to (35,00) at 36,740 kg (81,000 lb)

En route

(9,85) to (37,00) at 44,450 kg (98,000 lb)
 (6,22) to (37,00) at 39,915 kg (88,000 lb)
 (5,00) to (37,00) at 36,740 kg (81,000 lb)

Linear variation between points given.

DATUM

The datum referred to is defined as the Fuselage Datum (Station Zero), which is 2434 mm (95.8 inch) forward of the front leveling pin. (Tip of the aircraft nose section).

M.A.C. The Mean Aerodynamic Cord is 3832.6 mm (12 ft 6.9 inch).

LEVELING MEANS Two leveling pins are installed on RH side of the nose gear bay for checking the longitudinal level of the aircraft.
Two brackets are installed on the aft wall of the APU compartment for checking the lateral level of the aircraft.

MINIMUM FLIGHT CREW 2 (Pilot and Co-pilot).

MAXIMUM PASSENGERS 109 Passengers in the Basic Configuration
122 Passengers in aircraft equipped with optional tipe I rear left exit door.

MAXIMUM BAGGAGE Refer to the appropriate document "Basic Weight and Balance Information".

CONTROL SURFACE MOVEMENTS (MAX)

Elevator	Up	25°	Down	15°
Rudder	Left	33°	Right	33°
Aileron	Up	20°	Down	20°
Flaps single slotted		18°		
double slotted		42°		
Liftdumpers		60°		
Horz. Stabilizers	+ 2°	(A/C nose down)		
	- 10°	(A/C nose up)		
Speed brakes		60°		

EQUIPMENT The basic required equipment as prescribed in the applicable airworthiness regulations must be installed in the aircraft for certification, and, in addition, those equipments established in the Report no H.10-1140-03.

- The RLD approved Brazilian Airplane Flight Manual issued for the applicable aircraft serial number.

**SERIAL NUMBERS
ELIGIBLE**

1157 and subsequent or aircraft modified according S.B. n° F.100 51/001. The Netherlands Certificate of Airworthiness endorsed as noted under "Import Requirements" below must be submitted for each individual aircraft for which application for certification is made.

REQUIREMENTS FOR IMPORT

A Brazilian Airworthiness Certificate must be issued in the basis of the Airworthiness Certificate for Exportation issued by the RLD, including the following statement: "The aircraft covered by this certificate has been inspected, tested and found to comply with the Brazilian approved type design as defined by the CTA Type Certificate n° 9004 and is in condition for safe operation". See Note 7.

CERTIFICATION BASIS

1. Part 25 of the FAR dated February 1, 1965 as amended by Amendments 25-1 through 25-56, 25-58, 25-59 and 25-60 except for the following paragraphs which will be limited to showing compliance with the earlier amendments as noted.

25.109	25-41
25.631	Not applicable, par. 25.631 added at Amendment 25-23
25.783	25-53 for paxdoor with integral stair
25.1309	25-22 For unmodified systems.

2. Part 36 stage 3, Amendment 36-16.
3. SFAR 27 -6.
4. Special condition 25-ANM-14 issued on October 19, 1987 for Lightning Protection Requirements for Electronic Devices.
5. Findings of Equivalent Safety.

25.729 (e) (2) b (3)	Landing Gear Warning System Throttles
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25.811 (e) (3)	Emergency Exit Marking
25.901 (d)	APU Installation -
	Instruments
25.1307 (d)	Total loss of all cockpit communication

6. Exemptions: none.
7. Certification with the ditching provisions of FAR 25.801 has not been requested by Fokker, BV. If overwater operation is to be approved, compliance with FAR 25.801 must be demonstrated.
Compliance with the optional requirements of FAR 25.1419, Icing Protection has been established.
8. Brazilian special conditions listed in the CTA Fax/letter no 309/HAT/90.
9. Any additional Brazilian requirements for Fokker model F.28 Mk-0100 listed in the Report H.10-1040-03-."Brazilian Requeriments for Acceptance of the Fokker B.V. F.28 Mk0100 Aircraft."

NOTE 1

- (a) Current Weight and Balance Report, with List of Equipment included in the certificated empty weight, interior arrangement and loading instructions must be provided for each aircraft at the time of the original certification.
- (b) The undrainable fuel is that amount of fuel after drainage in accordance with the procedures described in the AFM. The total amount and distribution of unuseable fuel is listed in the following table. The highest level of the unuseable fuel is the level prescribed by the critical flight conditions as defined in RBHA 25.959 and must be included in the aircraft empty weight.

The total unuseable fuel is distributed as follows:

Unuseable Undrainable			
Fuel	Volume/liters (US Gal)	Weight/Kg (lb)	Arm/m (in)
-----	-----	-----	-----
Fuel Lines	39,00 (10.3)	30,71 (67.7)	
Collector tanks	3,00 (0.8)	2,40 (5.3)	
Main tanks	7,20 (1.9)	5,58 (12.3)	
Center wing tanks	14,00 (3.7)	11,07 (24.4)	
TOTAL	63,20 (16.7)	49,76 (109.7)	18,41 (725.0)

Unuseable Drainable

Fuel	Volume/liters (US Gal)	Weight/Kg (lb)	Arm/m (in)
-----	-----	-----	-----
Fuel Lines	4,92 (1.3)	4,00 (8.8)	
Collector tanks	29,14 (7.7)	23,00 (50.7)	
Main tanks	2,65 (0.7)	2,22 (4.9)	
Center wing tanks	20,06 (5.3)	15,78 (34.8)	
TOTAL	56,77 (15.0)	45,00 (99.2)	16,15 (635.8)

Engine oil system is the total engine oil less the quantity drainable from the tank which is 13,29 kg (29.3 lb). and must be included in the aircraft empty weight.

The total undrainable oil is distributed as follows

	Volume/liters (US Gal)	Weight/Kg (lb)	Arm/m (in)
	-----	-----	-----
Each Engine	6,81 (1.8)	6,58 (14.5)	24,01 (945.5)
TOTAL	13,62 (3.6)	13,16 (29.0)	24,01 (945.5)

NOTE 2.

Airplane operation must be in accordance with the RLD approved Brazilian Airplane Flight Manual. All placards required in either the RLD approved Brazilian Airplane Flight Manual or the Certification Basis must be installed in the airplane in accordance with the following documents:

- Interior placards: drawing n^o D 93226
- Exterior placards: drawing n^o D 85528
- Cockpit placards : T.N. F28-61-037
- Report H.10-1140-03 item 8

NOTE 3.

For the F28 Mk0100 the required structural inspections for damage-tolerance and the retirement times for safe-life parts are listed in the RLD approved Chapter 05-10 Airworthiness Limitations Section of the Maintenance Manual.

The airworthiness limitations section includes the Certification Maintenance Requirements (CMR"s).

NOTE 4.

Reserved for optional doors approval.

NOTE 5.

All replacement seats (crew, passenger, lounge), although they may comply with TSO C39, must also be demonstrated to comply with RBHA 25.785 and RBHA 25.561.

Other installations such as berths, buffets, compartments, or items of mass which could create a hazard to the safety of passengers and crew must also be demonstrated to meet the same requirements.

NOTE 6.

The type design which was submitted for CTA evaluation and which is considered for CTA approval is defined by the "Standard Systems and Component List" Doc. n^o SSCL Y17 Issue 16 complemented by the "Aircraft Customer Requirements" Doc. n^o ACR 284 and "Installation of Customer Requirements (TAM)" Report n^o AV/W/N303.

NOTE 7.

Brazilian Requeriments for Acceptance Report H.10-1140-03, issued Feb 18, 1993.

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