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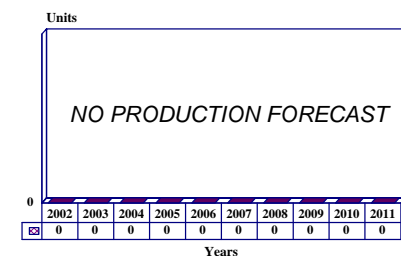
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Fokker 50 – Archived 2/2003

Outlook

- Fokker 50/60 production ceased in 1997
- Forward Aircraft has been attempting to restart Fokker 50/60 production

10 Year Unit Production Forecast
2002 - 2011



Orientation

Description. Pressurized, twin turboprop, 46-58 passenger regional/commuter and special purpose military aircraft.

Sponsor. The Fokker 50 was privately sponsored by Fokker.

Contractors. NV Koninklijke Nederlandse Vliegtuigenfabriek Fokker; Amsterdam-Zuidoost, the Netherlands. The Fokker 50 was produced at Schiphol-Oost Works, Amsterdam.

Status. Fokker 50 production was terminated in 1997.

Total Produced. Fokker produced 208 Model 50 aircraft. Four Fokker 60 Utility aircraft were produced.

Application. Civil applications included short-range regional/commuter passenger transportation, and small package and general freight transportation. Military applications included cargo/troop transport, medevac, maritime patrol, anti-submarine warfare, anti-ship warfare, and border patrol.

Price Range. Fokker 50, \$13.2-\$14.0 million, in 1998 US dollars.

Technical Data

(Fokker 50 Basic)

Design Features. Cantilever high-wing monoplane with conventional cantilever tail section and retractable tricycle-type landing gear. The aircraft was designed for rough-field capability and employed mostly standard aircraft light alloys in the airframe primary structure. Kevlar, carbon, and glass fiber reinforced plastics accounted for 8 percent of empty weight.

	<u>Metric</u>	<u>US</u>
Dimensions		
Length overall	25.25 m	82.84 ft
Height overall	8.32 m	27.30 ft
Wingspan	29.0 m	95.14 ft
Wing area, gross	70.0 sq m	753.5 sq ft
Cabin ^(a)		

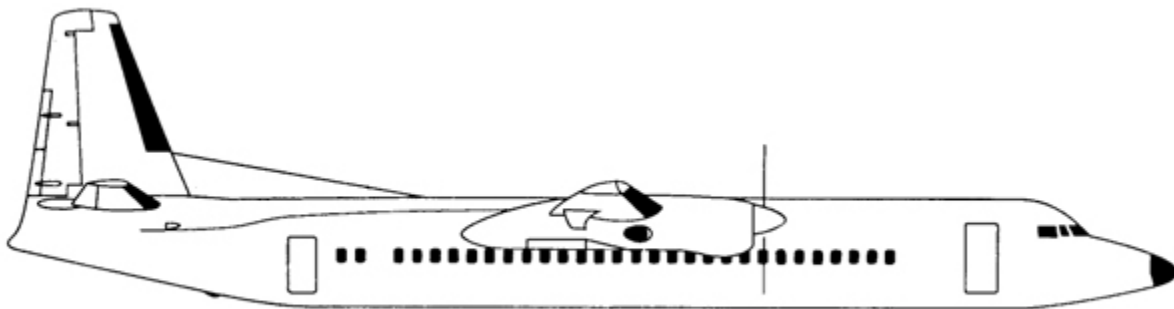
	<u>Metric</u>	<u>US</u>
length	15.96 m	52.36 ft
width	2.50 m	8.20 ft
height	1.96 m	6.43 ft
Weight		
Operating weight empty (typical)	12,520 kg	27,602 lb
Max T-O weight		
standard	19,950 kg	43,980 lb
optional	20,820 kg	45,900 lb
Capacities		
Standard fuel	5,136 liters	1,357 gal
Max payload	6,080 kg	13,404 lb
Performance		
Typical cruise speed	522 kmph	282 kt
Range with 50 passengers, baggage, and fuel reserves ^(b)	2,055 km	1,109 nm
Propulsion		
Fokker 50	(2)	UTC Pratt & Whitney Canada PW125B three-shaft centrifugal-flow turboprop engines flat-rated at 1,864 kW (2,500 shp) each. The engines drive Dowty six-bladed propellers.
Fokker 50 High Performance	(2)	Pratt & Whitney Canada PW127B turboprop engines flat-rated at 2,050 kW (2,750 shp) each.
Fokker 60 Utility	(2)	Pratt & Whitney Canada PW127B turboprop engines flat-rated at 2,050 kW (2,750 shp) each.

Seating

Fokker 50: Seating range is 46-58.

^(a)Excluding flight deck.

^(b)At standard maximum take-off weight.

FOKKER 50

Source: Forecast International

Variants/Upgrades

Fokker 50. First flown in 1985 in prototype form. Two prototypes were built, both converted F.27s. The Fokker 50 was certified in 1987 and entered service in August of that year. Full FAR Part 25 approval was received in February 1989. The basic version was powered by two Pratt & Whitney Canada PW125B turboprop engines. Also marketed was a Fokker 50 High Performance variant. This version was powered by the PW127B, which provided 10 percent more mechanical power and an even greater increase in thermal power than the PW125B. The High Performance variant provided improved take-off performance under all temperature or elevation conditions. The Colombian carrier Avianca placed the initial order for the High Performance variant, purchasing six of the aircraft. The first was delivered in May 1993.

Fokker 50 Utility. For use in corporate, government, and military operations. It featured a heavy-duty floor and a 1.3 x 1.65 meter (4.3 x 5.4 foot) multipurpose door. The Fokker 50 Utility was also available in the High Performance version.

Fokker 50-200. In 1989, Fokker was considering a stretched variant called the Fokker 50-200, which would accommodate 68 passengers. The -200 was to have two fuselage plugs installed: a 3.0-meter plug forward and a 1.5-meter plug aft of the wing. It was to be powered by two PW130 turboprops. However, in 1991, the -200 was dropped, and Fokker began studying a Fokker 50-400, a new 68-passenger stretched variant powered by the PW127B. The -400 would have had a 2.4 meter longer fuselage than the basic Fokker 50. The -400 was also subsequently dropped.

Fokker 60 Utility. Stretched version of the Fokker 50 Utility. It featured a 1.62-meter (5.31-foot) stretch, a large cargo door at front starboard, PW127B engines, and a maximum payload capacity of 7,816 kilograms

(17,231 lb). The launch customer was the Royal Netherlands Air Force, which ordered four in early 1994. Deliveries occurred in 1996.

Fokker 60. Fokker studied the Fokker 60, a 1.62-meter (5.31-foot) stretched version of the Fokker 50. The Fokker 60, which would have been powered by the PW127B, would have provided a standard capacity of 60 passengers and a maximum capacity of 68.

Maritime Mk 2. Long-range maritime surveillance and search-and-rescue variant based on the Fokker 50.

Maritime Enforcer Mk 2. Anti-submarine and anti-surface unit warfare maritime patrol variant based on the Fokker 50. Fitted with Texas Instruments APS-134(V)7 search radar. First flight of a prototype Maritime Enforcer Mk 2 occurred in December 1992; the prototype was a converted Fokker 50.

Kingbird Mk 2. Fokker 50 variant for airborne early warning and control missions and airborne command and control missions. Fitted with Ericsson Erieye airborne early warning radar.

Black Crow Mk 2. Fokker 50 variant designed for signal intelligence operations. The Black Crow Mk 2 was based on a configuration similar to the ARGOSystems AR7000 communications/electronic intelligence suite. One Black Crow Mk 2 was sold.

Sentinel Mk 2. Border surveillance and reconnaissance variant of Fokker 50. Fitted with Motorola side-looking airborne radar.

Program Review

Background. The Fokker 50 was based, in part, on Fokker's earlier F.27 Friendship, a high-wing turboprop with short-field capability. The F.27 was designed in the late 1950s as one of many replacements for the ageless Douglas DC-3/C-47 transport.

During the F.27's early development and production stage, Fokker concluded a licensed-production agreement with Fairchild Industries in an effort to broaden potential US sales. In fact, the first F.27 delivered to an airline was a Fairchild-built unit. This was also the first turboprop-powered commuter aircraft of US manufacture to enter airline service. Fairchild units were known by several designations, including F-227 and

FH-227. When Fairchild finally terminated its F.27 participation, it had built 205 units.

All told, F.27 deliveries totaled 786 when the line closed in early 1987. The aircraft was available in commercial configurations (ranging from 44- to 60-seat configurations), in freighter versions, and in military configurations (accommodating up to 46 troops). The F.27 Maritime was a basic unarmed maritime patrol variant.

Fokker 50 Genesis. In November 1983, Fokker announced F.27 and F.28 follow-ons, designated the Fokker 50 and the Fokker 100, respectively. The Fokker 50 closely resembled its F.27 predecessor and

had nearly identical dimensions, but the similarities ended there. Power was provided by a pair of Pratt & Whitney Canada PW125B turboprop engines, and the literally all-new aircraft featured new nacelles, a passenger door on the forward fuselage, a cargo door aft, more (but smaller) windows, and new six-blade advanced composite Dowty propellers with spinners, which resulted in noise levels lower than that of the Boeing/McDonnell Douglas MD-80. All aircraft sub-systems (including hydraulics, auxiliary power, electric power generation, flight controls, landing gear, and avionics) were entirely new when compared with the older F.27.

Suppliers included UTC Hamilton Standard – air conditioning system; Smiths Industries – fuel quantity indicating system; Fuji Heavy Industries – tail rudders and elevators; Messier-Dowty – main and nose landing gears; Dowty – door actuation systems, hydraulic equipment, and flap drive units; Gravinier Ltd – fire detection systems; Sundstrand – 30/40 kVA integrated drive generators; and Rockwell Collins – RDMI-743 Radio Distance Magnetic Indicator and RMI-733 Radio Magnetic Indicator.

Still others included Honeywell – autopilot and EFIS; AlliedSignal – nav/comm systems; Aircraft Braking Systems – carbon brakes; Daimler-Benz Aerospace Airbus – wing trailing edge and control surfaces, tail cone, and dorsal fin; SABCA – outer wings; and Dassault Aviation – center and aft fuselage. Space existed for provision of an AlliedSignal KNS 660 navigation system. An Auxiliary Power International Corp APS 1000 auxiliary power unit (APU) was optional. Aircraft delivered from 1993 were equipped with a Litef LCR-88 AHRS as standard.

DASA Acquisition. In 1993, the German company DASA acquired majority control of Fokker. DASA established a subsidiary, Fokker Holding, which owned a 51 percent share of Fokker.

Bankruptcy. DASA halted financial support to Fokker in January 1996, after negotiations with the Dutch government concerning a rescue plan failed. DASA said that it would only fulfill obligations that it guaranteed or that Fokker assumed with its authorization.

A Dutch bankruptcy court subsequently granted Fokker a 30-day suspension of payments to creditors. Also, in late January 1996, the Dutch government granted a 365

million guilder (\$237 million) rescue package to Fokker that enabled it to temporarily continue operations while it searched for possible solutions.

One potential solution would have been the purchase of Fokker by an outside company. Companies in Asia, Europe, and North America had shown some interest in saving Fokker. In all, approximately 30 interested parties approached Fokker, but only six or seven of these were interested in purchasing the entire company or a majority of it. Among the parties interested in purchasing at least part of Fokker were Samsung of South Korea and the (now-defunct) British-French-Italian consortium Aero International (Regional), or AI(R). The Dutch industrial conglomerate Stork said that it might participate in a rescue of Fokker Aircraft, but did not want to become a leading aircraft producer itself.

In March 1996, unable to find a purchaser, Fokker declared bankruptcy. A number of Fokker subsidiaries, though not the aircraft manufacturing unit, continued to operate under the name Fokker Aviation. In mid-1996, Stork acquired Fokker Aviation, which will continue to provide maintenance and repair for all existing Fokker aircraft. Meanwhile, the separate aircraft manufacturing portion of Fokker (called Fokker Aircraft) continued to build a small number of aircraft.

When Fokker declared bankruptcy in March 1996, it had 15 aircraft under assembly, including eight turboprops. The company asked 350 employees to keep working for three months in order to complete the 15 aircraft. Plans called for production of Fokker aircraft to then cease. However, Fokker subsequently decided to produce a further 15 aircraft (including six turboprops), which extended production until mid-1997.

In December 1996, Fokker's bankruptcy trustees ended negotiations with Samsung regarding a possible takeover of the aircraft manufacturer. The trustees concluded that it was no longer feasible to continue aircraft production beyond May 1997 since Short Brothers and other component suppliers were not prepared to continue to produce parts for Fokker aircraft.

In early 1997, a deal to rescue Fokker Aircraft collapsed. The deal would have involved Stork and Khazanah Nasional Berhad, the investment arm of the Malaysian government.

Funding

Not available.

Recent Contracts

None

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Nov	1955	F.27 prototype first flight
Nov	1958	Initial F.27 deliveries
Oct	1961	Mk 400 first flight
Apr	1965	Mk 400M first flight
Nov	1967	Mk 500 first flight
Nov	1968	Mk 600 first flight
Early	1984	Rolls-Royce began testing of Dart Mk 552 engine
Jun	1985	UK CAA certification of Dart Mk 552-powered F.27
Late	1985	First Mk 552-powered F.27s delivered
Dec	1985	Prototype Fokker 50 first flight
May	1987	Fokker 50 certification; final F.27 deliveries
Aug	1987	Initial Fokker 50 delivery
Feb	1989	US FAA certificated the Model 50
Sep	1990	Fokker 50 hot/high variant launched
Early	1994	Royal Netherlands Air Force ordered four Fokker 60 Utility aircraft
Nov	1995	First flight of Fokker 60 Utility

Worldwide Distribution

Refer to World Airline Inventories in the Appendices.

Forecast Rationale

Fokker's problems stemmed from a number of factors. These included a decline in demand for aircraft which resulted in expensive overcapacity at Fokker, a decrease in achievable aircraft prices due to market conditions of low demand and high supply, and high finance charges resulting from previous reorganizations of the company. Added to these factors was a 25 percent drop in the value of the US dollar compared to the Dutch guilder. Since several components of Fokker aircraft were produced in Germany, the strength of the Deutsche mark against the dollar had also been a factor. The company was thus caught in a squeeze: often its aircraft had been sold in weaker dollars while its production costs had been covered by stronger currencies.

The basic inability to sell its aircraft at an economic price led to Fokker's problems. Fokker's financial difficulties had not been due to any technical deficiencies in its aircraft nor to a lack of sales. The Fokker 50, while not enjoying the sales success of the ATR series turboprops (its direct competition),

nevertheless generally proved that it was capable of maintaining significant market share. The program appeared to have lots of sales life left. In particular, as the market moves toward higher capacity transports in the 65-90 passenger range, the Fokker 60 stretched version might have been a logical and profitable extension of the Fokker turboprop line.

A Dutch company called Forward Aircraft NV has been attempting to restart production of the Fokker 50 and the Fokker 60. The aircraft would be renamed the Friendship 50 and the Friendship 60, respectively.

In early 2000, Forward Aircraft was in advanced negotiations concerning a potential acquisition by the Royal Netherlands Air Force of three Friendship 50 aircraft. If the program goes ahead, a production facility would be built at Groningen airport in Eelde in the Netherlands.

Currently, a production restart is not forecast. Further developments are awaited.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 01	High Confidence Level				Good Confidence Level				Speculative		Total 02-11
			02	03	04	05	06	07	08	09	10	11	
FOKKER													
F.27	DART RDa.7	581	0	0	0	0	0	0	0	0	0	0	0
FOKKER 50(a)	PW125B/127	208	0	0	0	0	0	0	0	0	0	0	0
FOKKER 60	PW127	4	0	0	0	0	0	0	0	0	0	0	0
Subtotal - FOKKER		793	0	0	0	0	0	0	0	0	0	0	0
FAIRCHILD (Licensee)													
FH-27/FH.227	DART MK 532	205	0	0	0	0	0	0	0	0	0	0	0
Subtotal - FAIRCHILD (Licensee)		205	0	0	0	0	0	0	0	0	0	0	0
Total Production		998	0	0	0	0	0	0	0	0	0	0	0

(a) Does not include two prototypes modified from F.27 airframes.