

Eurofighter

AFS-design



Andreas Meyer

Summary

AFS-design brings an excellent rendition of Eurofighter Typhoon. The Eurofighter is a single-seat, twin-engine, agile combat aircraft which will be used in the air-to-air, air-to-ground and tactical reconnaissance roles.

Developed by Europe's leading aerospace companies, Eurofighter Typhoon is now in service with the Air Forces of Germany, Spain, Italy and the United Kingdom and will fulfil Air Force requirements well into the 21st Century. Aircraft production is ongoing and with 638 aircraft under contract to the four Partner Nations and Austria, as the first export customer.

The design of Eurofighter Typhoon is optimised for air dominance performance with high instantaneous and sustained turn rates, and specific excess power. Special emphasis has been placed on low wing loading, high thrust to weight ratio, excellent all round vision and carefree handling.



Contents

- Summary..... 1

- 1. The Eurofighter of AFS-design..... 3
 - 1.1. Performance of the AFS-design Eurofighters 3
 - 1.2. System..... 5
 - 1.3. Installation 5
 - 1.4. Keyboard..... 7
 - 1.5. The panel 8

- 2. Informations of Eurofighter..... 9
 - 2.1. Flightperformance 9
 - 2.2. Nations 10
 - 2.3. Configuration..... 11
 - 2.4. Fly-By-Wire system 14
 - 2.5. Autopilot..... 15

- Right 16

1. The Eurofighter of AFS-design



1.1. Performance of the AFS-design Eurofighters

17 different visual models covering the Germany Bundeswehr (name: 30+11,30+16,30+14,30+20), RAF United Kingdom (name: AE,BH,QO-L), Spain airforce (name: 11-03 ,11-71), Italy airforce (name: 318,IT001), Development Aircraft (name: DA2,DA4,DA5), Saudi Arabia and Austria.

5 different weapons loads model variations: the model with IRIS-T and Meteor, the model with AGM 64/84 and Paveway.3, the trainerversion, the model with 3 tanks and the formationsmodel with 3 different visual Eurofighter models.

Single seat and tandem seat trainerversion

New Model of authentic Eurofighter - EADS support

New Sound of real Eurofighter with authentic start engine sound

New panel with new XML gauges: the radar (MFD 1), dass (MFD 2), weather radar (MFD 3), engines (MFD 4), fuel (MFD 5), multifunctionsgauge (MFD 6), autopilot (MFD 7), radios (MFD 8), new GPS HSI (MFD 9),,, exitgauge, statusgauges and signature of: Eurofighter, A380, Eurocopoter Tiger, Sukhoi 35, F-22 and tank.



High detail textures with realistic effects, reflective areas, specular shine and accurate external lighting.

A new 3D virtual cockpit featuring animated control surfaces, custom gauges, night lighting, high textures, fully interactive and more...

New animations feature in external model and virtual cockpit are: detailed landing gear, rolling wheels, steerable nosegear, opening radome, canopy, pilot ladder, strobe lights, tail hook, folding wings, Night Lighting, authentic afterburner , boarding steps, flight-refuelling, realistic reheat effect on full power, brake parachute AND formation fly in external model and virtual cockpit and more...

Detailed and easy to fly flight model with auto-trim and real animations feature of flaps and canard wings for aerodynamically unstable.

1.2. System

File Size	10 MB
File Size of hard drive	226 MB
Installation	Execute Setup
Versions of Flight Simulator	FS2004 and FS_X



1.3. Installation

1. For FSX download the EurafsX.exe to a temporary directory of your choice.
2. Please start the Eurafs.exe and install the new AFS-design Eurofighter Typhoon.
3. Then you start the Flight Simulator
4. Choice a flight with AFS-design Eurofighter

This are the paints of Eurofighter airforce:

- Germany Bundeswehr (30+11,30+16,30+14,30+20),
- RAF (AE,BH,QO-L),
- Spain (11-03 ,11-71),
- Italy (318,IT001),
- Prototypen und Vorserienmaschinen (DA2,DA4,DA5)
- Saudi Arabien und Österreich.

This are in 5 equipments:

- (IRIS-T, Meteor),
- (AGM 64/84, Pavew.3),
- (trainer),
- (3 tank),
- (formation flight)

Every equipment has different Animations:

By the „IRIS-T, Meteor“ is for open the radoms. By „AGM 64/84, Pavew.3“ is open the brake parachute (touchdown only). By „trainer“ give it the boarding steps.

1.4. Keyboard

open gear	G
open brake parachute (touchdown only)	#
open airbrake	#
air-refuel-hose open / close: (FSX)	strg W
air-refuel-hose open / close: (FS2004)	shift W
canoby open / close	shift E
boarding steps	shift E
open the radoms	shift E



1.5. The panel

The panel is the interface between human and machine. By the AFS - Eurofighter is the panel the interface between human and computersimulation.



A – mirror

B – HUD - display

C – autopilot

D – 3 MFD's.

E – switch

F – infraredsystem

2. Informations of Eurofighter



2.1. *Flightperformance*

Eurofighter is a single-seat, twin-engine, agile combat aircraft which will be used in the air-to-air, air-to-ground and tactical reconnaissance roles. The design of Eurofighter Typhoon is optimised for air dominance performance with high instantaneous and sustained turn rates, and specific excess power. Special emphasis has been placed on low wing loading, high thrust to weight ratio, excellent all round vision and carefree handling. The use of Stealth technology is incorporated throughout the aircraft's basic design.

2.2. Nations

The collective military requirements of the four Partner Nations are the foundation of the Eurofighter Typhoon Weapon System. Eurofighter Typhoon is a highly agile Air Superiority and Air-to-Surface, multi-role/swing-role weapon system, making it the most capable front line fighter available. Swing-role means that one aircraft can perform a number of different roles, all carried out with ease and precision.

Symbol of European co-operation

Eurofighter Typhoon is shining example of European co-operation between four European countries, Germany, Italy, Spain and the UK. Production is on a workshare basis, according to the number of aircraft each has ordered and is carried out by EADS, Alenia Aeronautica and BAE SYSTEMS.

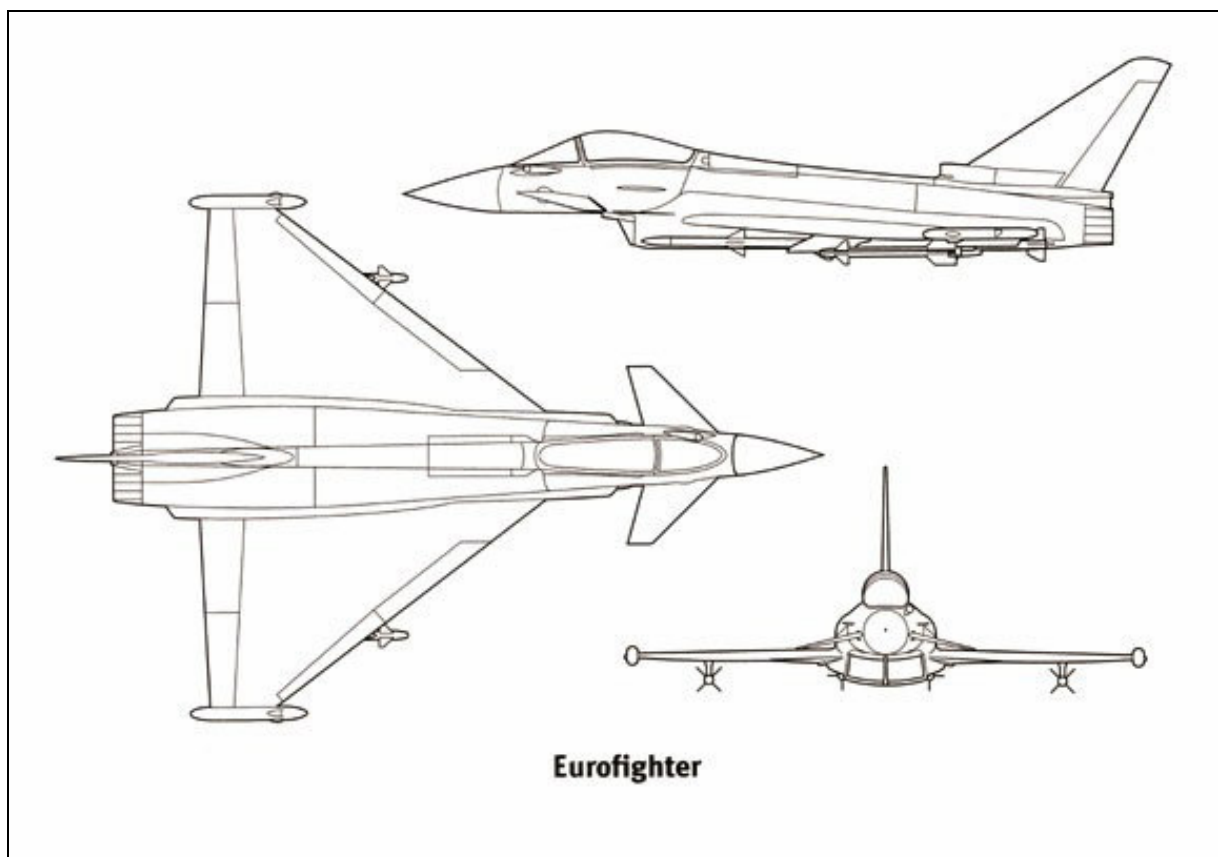
Export sales with reach

Eurofighter Typhoon is in full production and Entry in to Service was achieved with the Four Partner Air Forces in Spring 2004. Between them, the Partner Nations have ordered 620 aircraft while Austria have signed a contract for the purchase of 18 Eurofighters. The Norwegian Ministry of Defence has signed an Industrial Participation package with the Eurofighter Consortium for the future development of the aircraft. Other Export opportunities are being pursued throughout the world.

2.3. Configuration

Eurofighter Typhoon has a foreplane/delta wing configuration that is aerodynamically unstable in the subsonic range. The "delta canard" design shape of the aircraft is driven by a need for:

- Subsonic/supersonic instantaneous and sustained turn rate performance
- Agility
- Lift and STOL (Short take-off and landing)
- Exceptional acceleration
- Reduced drag



Combining this with a low wing loading, high thrust-to-weight ratio, excellent all-round vision and carefree handling results in a truly exceptional aircraft.

Stealth technology is incorporated in the basic design. Features include low frontal Radar Cross Section (RCS), passive sensors and supercruise capability.

The airframe is constructed mainly from Carbon Fibre Composites (CFCs), lightweight alloys, titanium and Glass Reinforced Plastics (GRP).

Eurofighter Typhoon has a foreplane/delta configuration which is, by nature, aerodynamically unstable.

The instability of the aircraft is derived from the position of a theoretical “pressure point” on the longitudinal axis of the aircraft. This is calculated from the contribution to lift from each of the aircraft components (the wings, the canards, fuselage etc). If the pressure point is in front of the centre of gravity on the longitudinal axis, the aircraft is aerodynamically unstable and it is impossible for a human to control it.



With the Eurofighter Typhoon, in subsonic flight the pressure point lies in front of the centre of gravity, therefore making the aircraft aerodynamically unstable, and is why Eurofighter Typhoon has such a complex Flight Control System – computers react quicker than a pilot.

When Eurofighter Typhoon crosses into supersonic flight, the pressure point moves behind the centre of gravity, giving a stable aircraft.

The advantages of an intentionally unstable design over that of a stable arrangement include greater agility – particularly at subsonic speeds - reduced drag, and an overall increase in lift (also enhancing STOL performance).



2.4. Fly-By-Wire system

The FCS is a full-authority, quadruplex digital Fly-By-Wire system providing:

- Stability and control augmentation
- High agility
- Full carefree handling and manoeuvring

It is designed to enable the pilot to concentrate on the tactical tasks and to fly the aircraft 'head-up' in combination with the HOTAS (Hand-on-Throttle-and-Stick) concept applied to cockpit design. Emergency features have also been embodied in the system design to ensure maximum safety of operation. These include:

Low speed auto recovery

Emergency 'g' override

'g' onset limitation

Dis-Orientation Recovery Capability (DORC)

Automatic reversion

The system is designed to provide the necessary measurement (Air Data System) computation and surface actuation needed to perform all required manoeuvres ensuring carefree handling and manoeuvring capabilities. The system is also designed to provide higher mode functionalities including:

- Autopilot
- Auto-throttle
- Flight Director Modes

The system is controlled by four Flight Control Computers and features primary and secondary actuation to ensure control along all axis (pitch, roll and yaw).

The aerodynamic configuration is automatically trimmed to achieve an optimum compromise between performance and manoeuvrability.

Pitch control is provided by symmetric operation of foreplanes and wing flaperons, while roll control is primarily achieved through differential operation of wing flaperons. Yaw control is primarily provided by the fin mounted rudder. Cross feeds among the various actuation systems are also implemented to optimise aircraft performance and handling qualities. The slats and flaperons automatically optimise the wing camber at all Angles of Attack (AOA).

The FCS also features automatic reversion through various back-up modes. It is integrated with other systems through the avionics (STANAG 3910) and utility control (STANAG 3838) data buses.

2.5. Autopilot

The Eurofighter Typhoon autopilot is designed for both long range cruising and to assist the pilot in tactical situations.

The autopilot provides basic track, heading, altitude and airspeed modes, and allows the pilot to fly optimum attack profiles automatically.

Advanced modes such as auto-climb, auto-attack, and auto-approach are available. The autopilot is an integrated part of the pilot's tactical control.

In the unlikely event of pilot disorientation, Eurofighter Typhoon's FCS allows for rapid and automatic recovery by the simple press of a button.

On selection of this auto-recovery facility the FCS takes full charge of the engines and flying controls, and automatically stabilises the aircraft in a wings level, gentle climbing attitude at 300 knots, until the pilot is ready to re-take control.

[to source: www.eurofighter.com]



Right

This product is a Add-On for the Microsoft Flight Simulator. It is build with FS-Design Studio 3, PHP and XML. Please use a licenceversion of the Flight Simulator only.

You may the addition use private only. Every dissemination or publication is forbid.

Andreas Meyer

AFS-design

<http://www.afs-design.de/>

info@afs-design.de

Copyright: Andreas Meyer