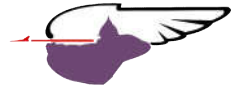


# Sukhoi-57



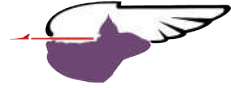
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## **FLIGHT MANUAL**

FOR X-PLANE 10 & 11

# Sukhoi-57

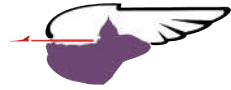


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## Table of content

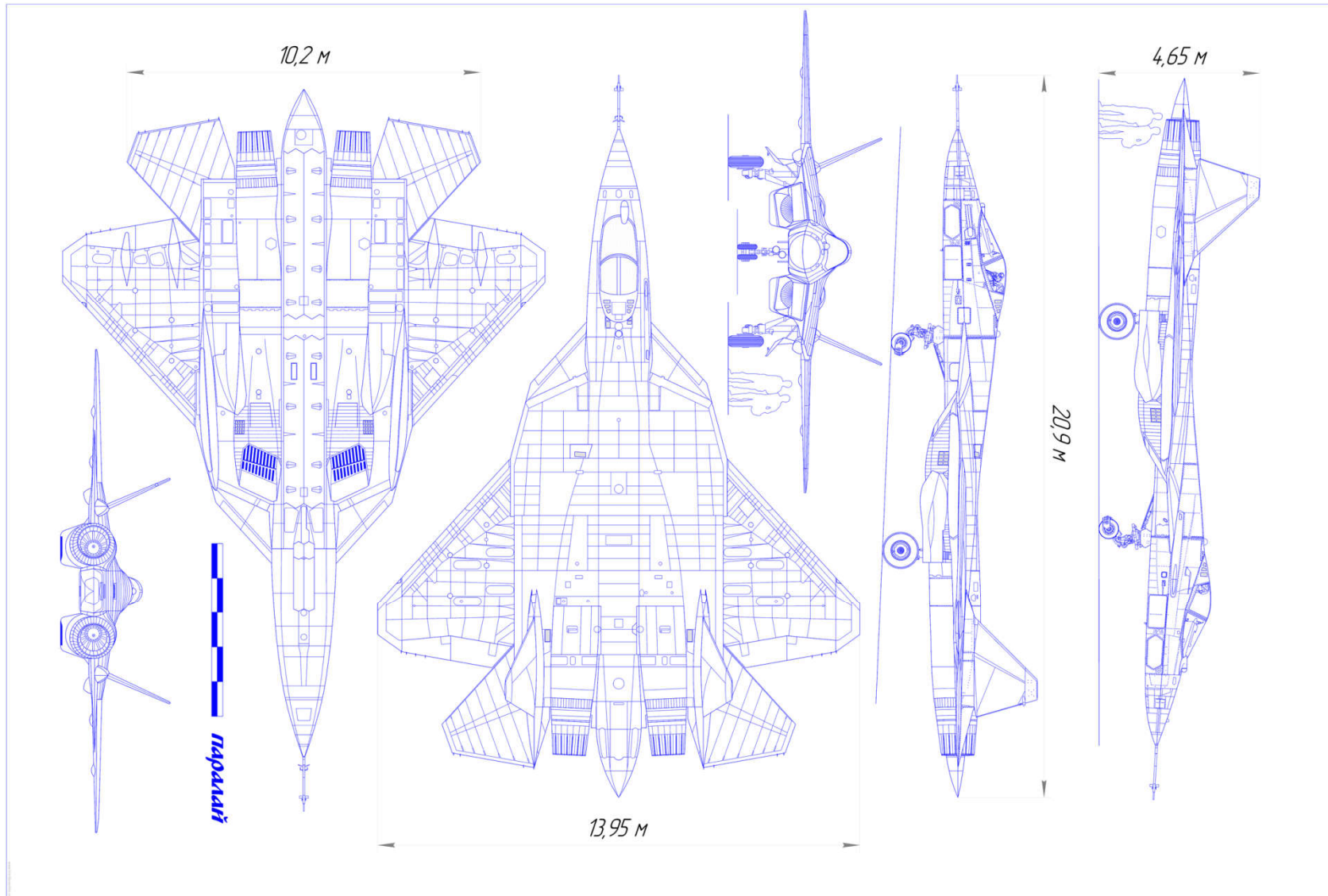
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# Sukhoi-57

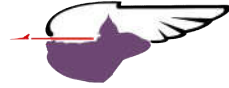


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## Overall dimensions.



# Sukhoi-57



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The **Sukhoi Su-57** (Russian: Сухой Су-57) is the designation for a stealth, single-seat, twin-engine multirole fifth-generation jet fighter being developed for air superiority and attack operations. The aircraft is the product of the **PAK FA** (Russian: ПАК ФА, Russian: Перспективный авиационный комплекс фронтовой авиации, *Perspektivny Aviatsionny Kompleks Frontovoy Aviatsii*, literally "Prospective Aviation Complex of Frontline Aviation"), a fifth-generation fighter programme of the Russian Air Force. Sukhoi's internal name for the aircraft is **T-50**. The Su-57 will be the first aircraft in Russian military service to use stealth technology. The fighter is planned to have supercruise, stealth, supermaneuverability and advanced avionics to overcome the prior generation fighter aircraft as well as ground and maritime defences.

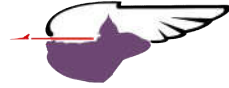
The fighter is intended to succeed the MiG-29 and Su-27 in the Russian Air Force and serve as the basis for the Fifth Generation Fighter Aircraft (FGFA) being co-developed by Sukhoi and Hindustan Aeronautics Limited (HAL) for the Indian Air Force. The prototypes and initial production batch are to be delivered with a highly upgraded variant of the Lyulka AL-31 engine used by the Su-27 family as interim powerplant while a new clean-sheet design engine is currently under development. The aircraft is expected to have a service life of up to 35 years.

The prototype first flew on 29 January 2010 and deliveries of production aircraft to the Russian Air Force are to begin in 2019.

Link wikipedia source

[https://en.wikipedia.org/wiki/Sukhoi\\_Su-57/](https://en.wikipedia.org/wiki/Sukhoi_Su-57/)

# Sukhoi-57



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## General characteristics

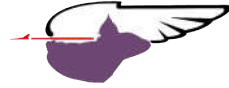
### General characteristics

- **Crew:** 1
- **Length:** 19.8 m (65 ft)
- **Wingspan:** 13.95 m (45 ft 10 in)
- **Height:** 4.74 m (15 ft 7 in)
- **Wing area:** 78.8 m<sup>2</sup> (848.1 ft<sup>2</sup>)
- **Empty weight:** 18,000 kg (39,680 lb)
- **Loaded weight:** 25,000 kg (55,115 lb) typical mission weight, 29,270 kg (64,530 lb) at full load
- **Max. takeoff weight:** 35,000 kg (77,160 lb)
- **Fuel capacity:** 10,300 kg (22,700 lb)
- **Powerplant:** 2 × Saturn AL-41F1 for initial production, *izdeliye* 30 for later production turbofans
  - **Dry thrust:** 93.1 kN / 107 kN (21,000 lbf / 24,054 lbf) each
  - **Thrust with afterburner:** 147 kN / 176 kN (33,067 lbf / 39,566 lbf) each

### Performance

- **Maximum speed:**
  - **At altitude:** Mach 2 (2,140 km/h; 1,320 mph)
  - **Supercruise:** Mach 1.6 (1,700 km/h; 1,060 mph)
- **Range:** 3,500 km (2,175 mi; 1,890 nmi) subsonic
  - 1,500 km (930 mi; 810 nmi) supersonic
- **Service ceiling:** 20,000 m (65,000 ft)
- **Wing loading:** 317–444 kg/m<sup>2</sup> (65–91 lb/ft<sup>2</sup>)
- **Thrust/weight:**
  - **AL-41F1:** 1.02 (1.19 at typical mission weight)
  - ***izdeliye* 30:** 1.16 (1.36 at typical mission weight)
- **Maximum g-load:** +9 g

# Sukhoi-57



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## Armament

- **Guns:** 1 × 30 mm Gryazev-Shipunov GSh-301 autocannon in right LEVCON root
- **Hardpoints:** 12 hardpoints (6 × internal, 6 × external) and provisions to carry combinations of:
  - **Missiles:**
    - Air-to-air missiles:
      - 4 × RVV-MD
      - 2 × R-73
    - Air-to-surface missiles:
      - 4 × Kh-38ME
    - Anti-ship missiles:
      - 2 × Kh-35E
    - Anti-radiation missiles:
      - 4 × Kh-58UShKE

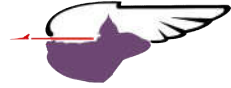
## Avionics

- Sh121 multifunctional integrated radio electronic system (MIREs)
  - Byelka radar
    - N036-1-01: Frontal X-band active electronically scanned array (AESA) radar
    - N036B-1-01: Cheek X-band AESA radars for increased angular coverage
    - N036L-1-01: Slat L-band arrays for IFF
  - L402 Himalayas electronic countermeasure suite
- 101KS Atoll electro-optical targeting system<sup>[86]</sup>
  - 101KS-O: Laser Directional Infrared Counter Measures
  - 101KS-V: Infra-red search and track
  - 101KS-U: Ultraviolet missile approach warning system
  - 101KS-N: Targeting pod

Partial datas source: wikipedia

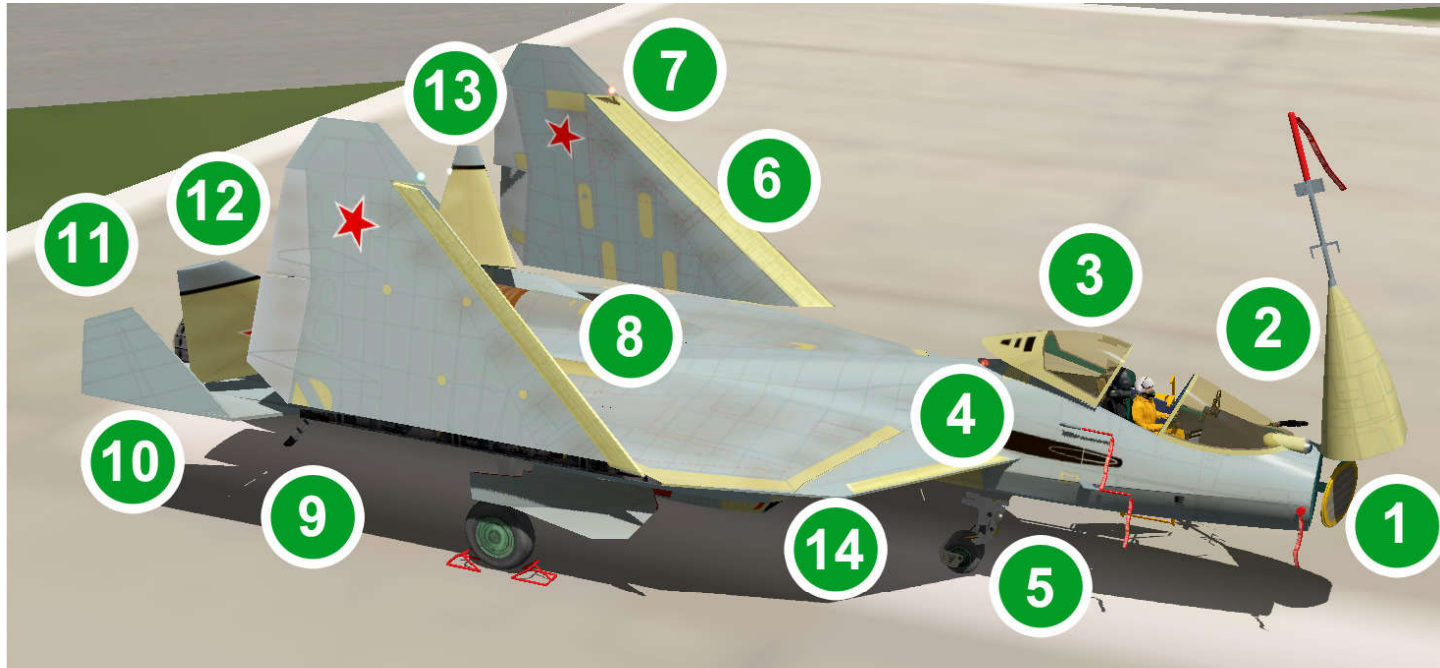


# Sukhoi-57



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Presentation x-plane model.



1 Radar, radome.

2 IFR probe.

3 Canopi movable

4 Gun

5 Landing gear.

6 Slats.

7 Folding wings.

8 Engine.

9 Hook.

10 Folding stabilator.

11 Chute.

12 Rudder, airbrake.

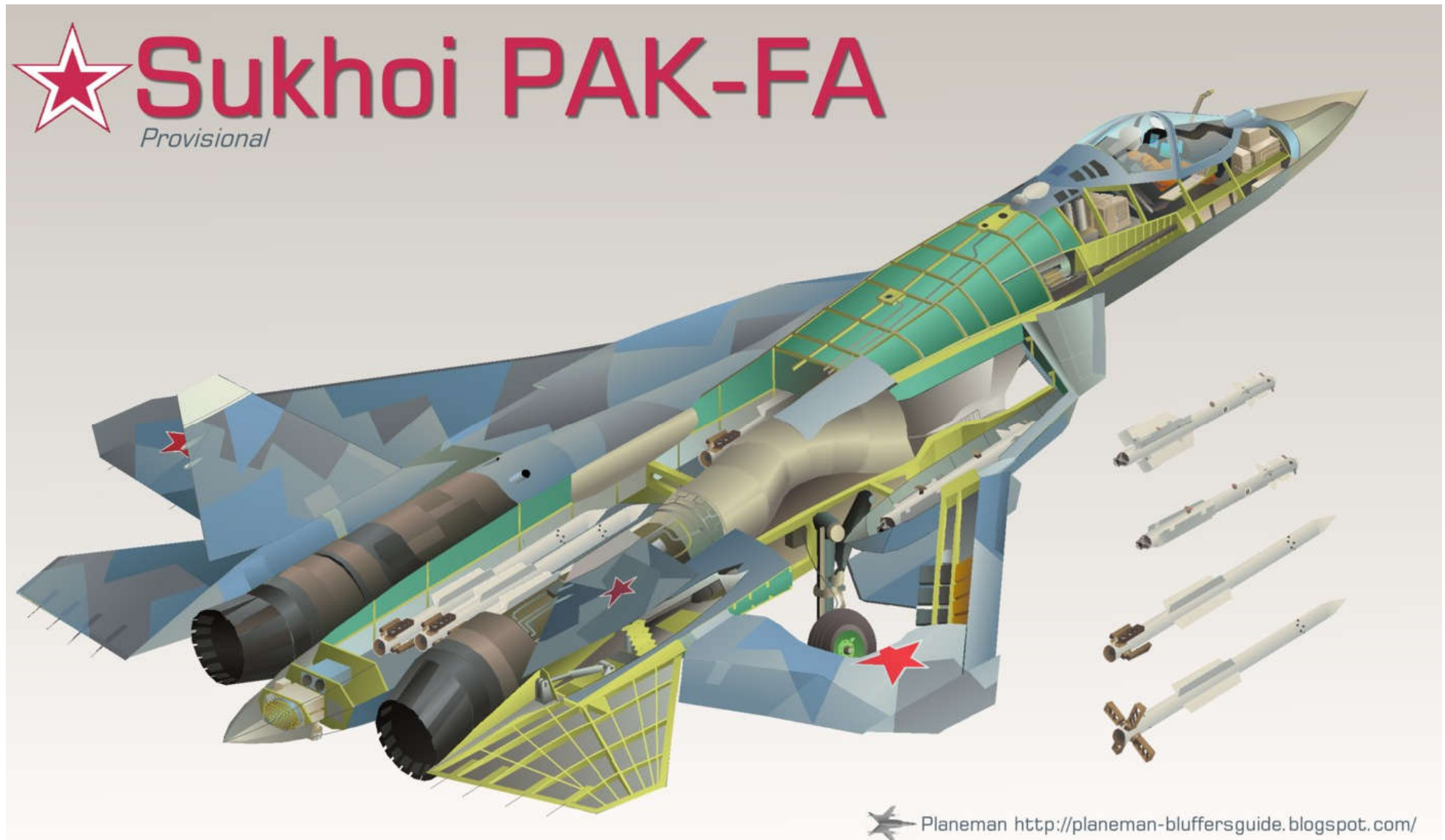
13 Flaps.

14 Internal weapon.

# Sukhoi-57

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Cutaway





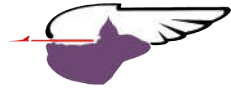
# Sukhoi-57



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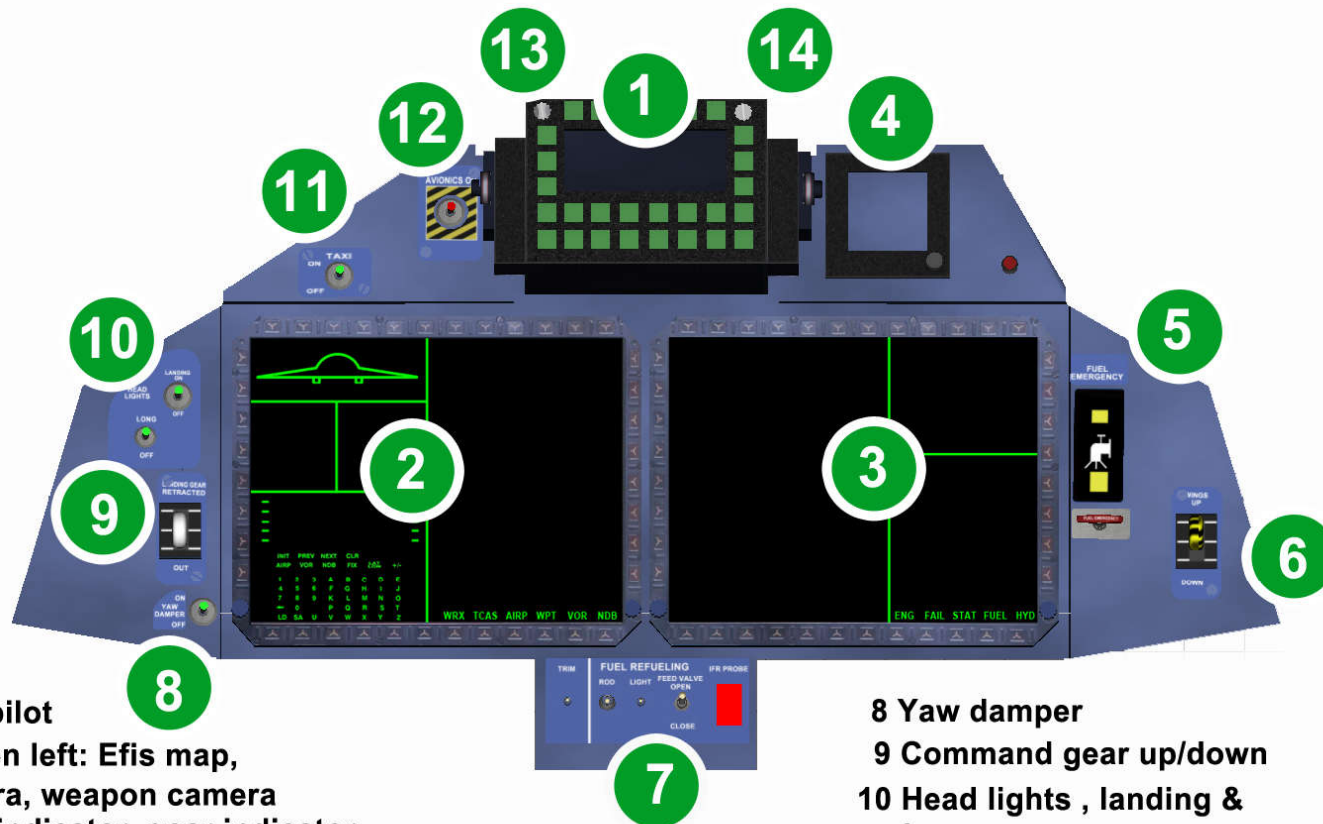
# Sukhoi-57



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## Cockpit 3D

## Front panel



1 Autopilot

2 Screen left: Efi map,  
camera, weapon camera  
flaps indicator, gear indicator.

3 Screen right: Artificial horizon  
Efi indicator, fuel indicator  
Hsi, altitude, machmeter.

4 Artificial horizon

5 Fuel emergency

6 Folding wings

7 IFR refueling

8 Yaw damper

9 Command gear up/down

10 Head lights , landing &  
long range.

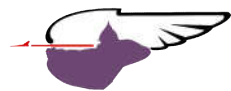
11 Lights taxi.

12 Avionics on/off

13 Hud brightness

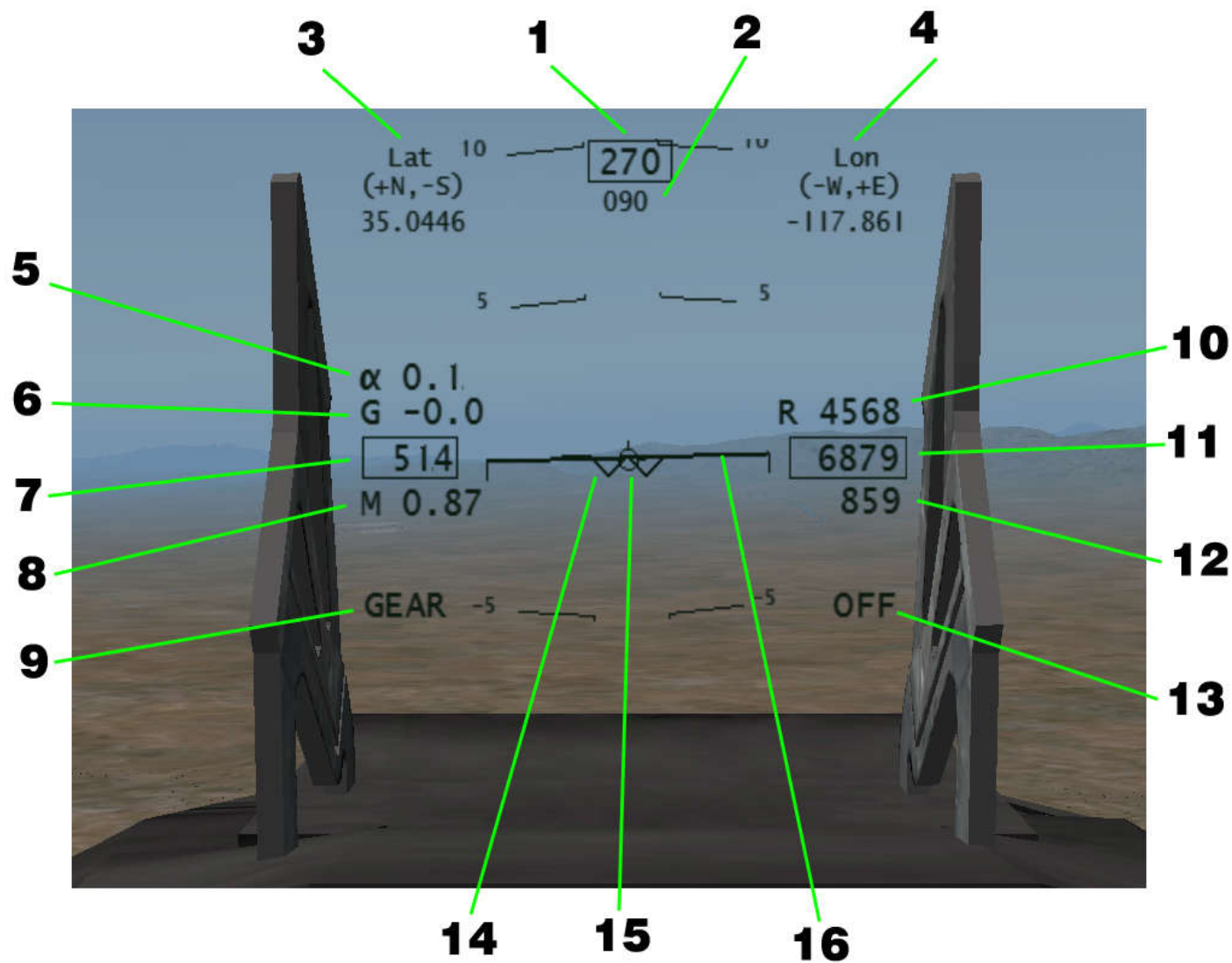
14 Power Hud.

# Sukhoi-57



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## HUD



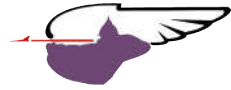
# Sukhoi-57



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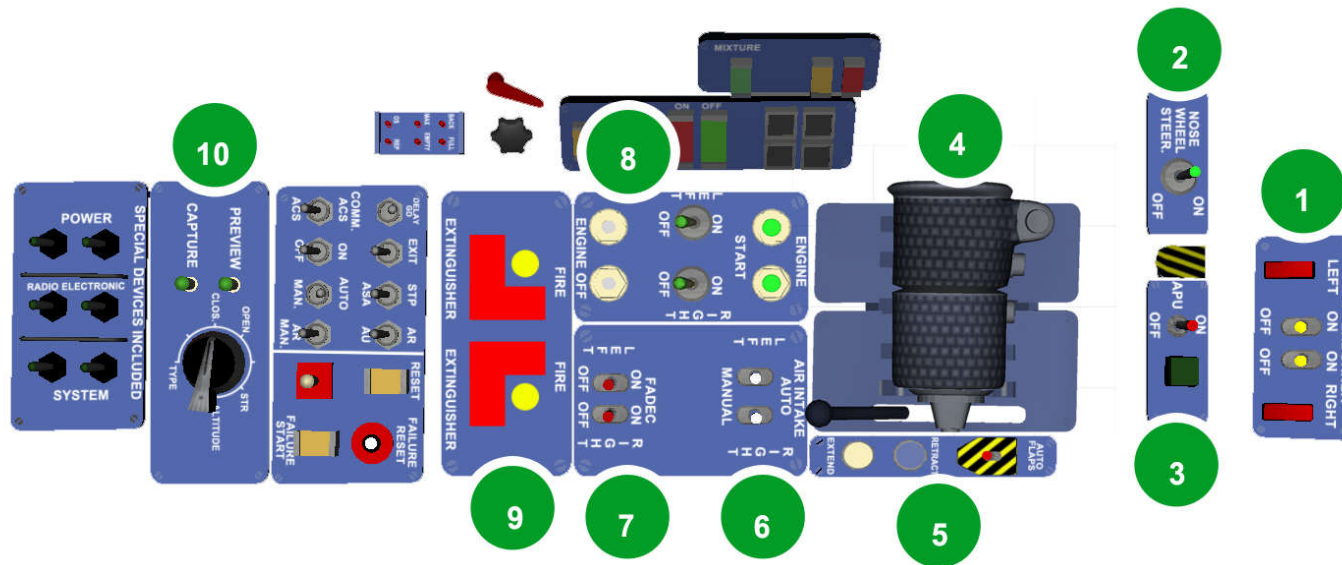
1. Heading, (magnetic)
2. Heading, opposite
3. Latitude
4. Longitude
5. AoA, angle of attack
6. G meter
7. Airspeed
8. Mach meter
9. Landing gear indicator
- Speedbrake indicator
10. Radio altimeter
11. Altitude
12. Vertical speed
13. Weapon indicator
14. Waterline symbol
15. Velocity vector
16. Horizon line

# Sukhoi-57



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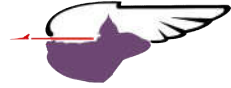
## Left panel



- 1 Afterburner on/off
- 2 Nose wheel steering
- 3 APU power
- 4 Throttle
- 5 Flaps, auto/ manual.
- 6 Air intake, auto/manual
- 7 Fadec.
- 8 Engine power, start
- 9 Fire extinguisher
- 10 Open radome

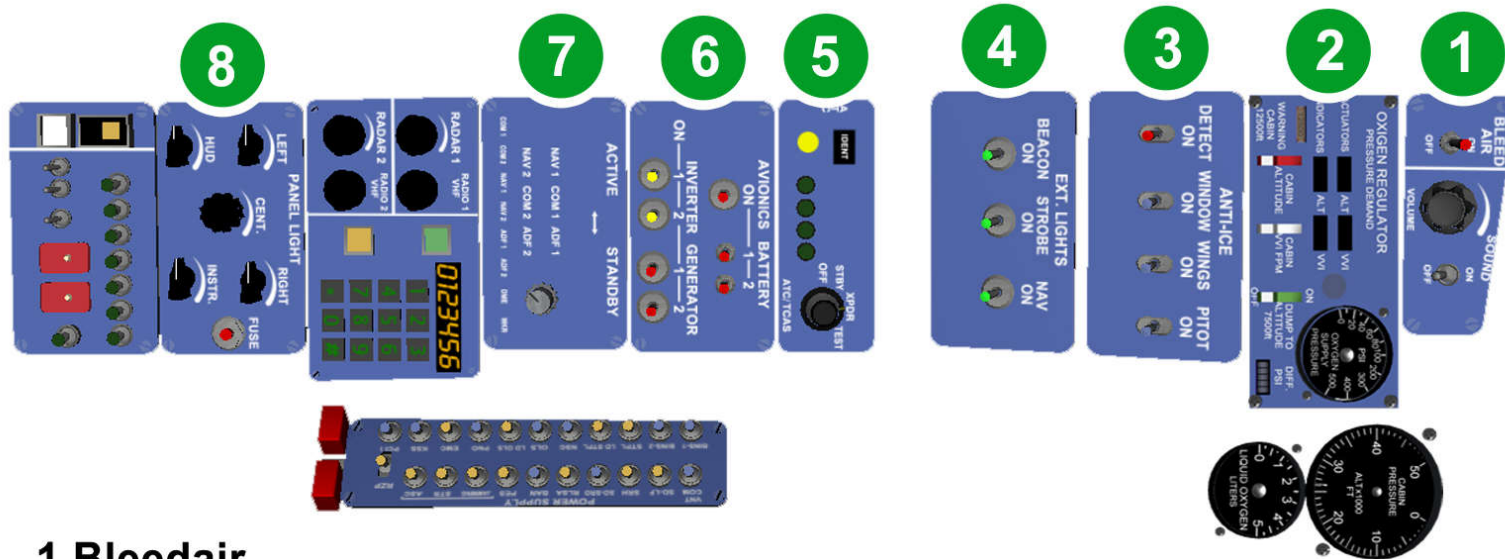


# Sukhoi-57



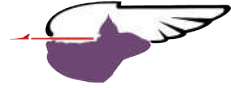
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## Right panel



- 1 Bleedair.
- 2 Pressurization unit.
- 3 Anti-ice.
- 4 Exterior ligfts.
- 5 Transponder.
- 6 Electric power unit.
- 7 Radionav.
- 8 Cockpit internal lights.

# Sukhoi-57



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## Fly your Sukhoi-57

### Keyboard setup.

For a user-friendly controls your Su-57 we recommend adding the following lines in the file "X-plane Keys.prf" with text editor.

Or replace the file with the one attached in the documentation

Make this operation when you are not in x-plane.

Save your original file.

For Landing gear :

Y <none> sim/flight\_controls/landing\_gear\_down

X <none> sim/flight\_controls/landing\_gear\_up

For dogfight :

N <none> sim/weapons/weapon\_target\_down

M <none> sim/weapons/weapon\_target\_up

K <none> sim/weapons/deploy\_chaff

L <none> sim/weapons/deploy\_flares

For utility :

Z <none> sim/flight\_controls/eject

V <none> sim/flight\_controls/canopy\_toggle

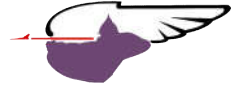
C <none> sim/flight\_controls/tailhook\_toggle

For folding wings :

PageUp <none> sim/flight\_controls/vector\_sweep\_forward

PageDown <none> sim/flight\_controls/vector\_sweep\_aft

# Sukhoi-57



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## Engine start

1. Main battery On
  2. Avionic On
  3. Starter Left position start, 3 sec
  4. Starter right position start, 3 sec.
- It is the minimum for start the engine.  
After you can start APU, generators and inverters.

## Takeoff

1. Engage wheel brakes.
2. Move throttle to full.
3. Check engines values
4. Release wheel brakes.
5. At ~140 Kt pull back the stick gently.
6. Retract the landing gear.
7. Climb freely, the engines have extreme power.

## Landing.

1. Adjust engine power 70%, reach the landing speed ~150 Kt
2. Out the airbrake to 430 kt and continue slowing down slowly
3. Lower the landing gear.
4. Pay attention to the vertical speed, smaller than value 2000.
5. Maintain landing speed.
6. After touchdown use wheel brakes and chute.

# Sukhoi-57



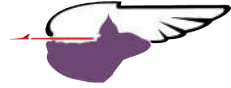
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## Takeoff carrier

1. Down the wings.
2. Engage wheel brakes.
2. Move throttle to full.
3. Check engines values
4. Release wheel brakes.
5. At the uoutput off he carrier pull back the stick gently.
6. Retract the landing gear.
7. Climb freely, the engines have extreme power.



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## Carrier landing

1. Adjust engine power 70%, reach the landing speed~150 Kt
2. Out the airbrake to 430 kt and continue slowing down slowly
3. Lower the landing gear.
4. Lower the tailhook.
5. Pay attention to the vertical speed, smaller than value 2000.
6. Maintain landing speed.
7. At the beginning of the carrier, move throttle to minus power, and wait.....





# Sukhoi-57

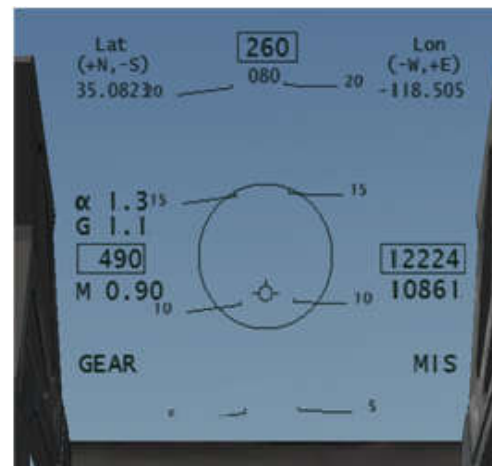


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## Weapon.



Gun mode

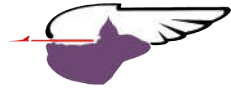


Missile mode



Bomb mode

# Sukhoi-57

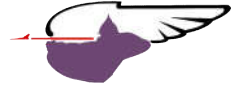


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1. Select a weapon on the front panel.
2. Find an enemy plane on the radar display
3. With the target arrow on the HUD, you maneuver the plane until the enemy aircraft is in the rectangular
4. Fire.



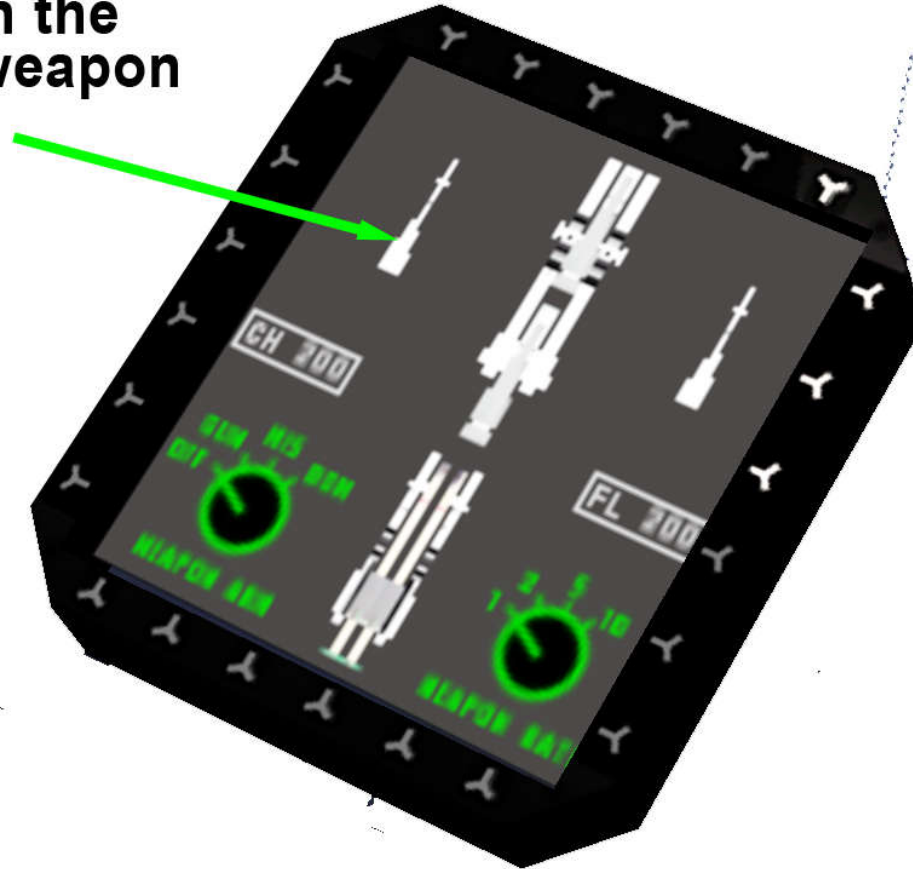
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Weapons panel

Click on the  
desired weapon



This is valid for xplane-10 cockpit 2d or 3d and **only** for **xplane-11 plane-2d with cockpit-2d**.

(bug in xplane-11)

When you select a desired weapon by clicking on it,

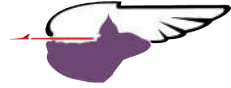
it will flash and is ready to be launched when you give the order.



## Keyboard shortcut.

1. Shift + F2: IFR refueling system returning or leaving the fuselage.
2. Shift + F5: Open/close intake left.
3. Shift + F6: Open/close intake right.
4. Shift + F9: Open/close the radome.
5. Shift + F10: Show or hide the pitot protection, as well as the ladder with the stoppers.
6. Shift + F11: Active /desactive autoflap.

# Sukhoi-57



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## Links :

<http://www.x-plane.com/manuals/desktop/>

<http://wiki.x-plane.fr/index.php?title=Sommaire>

[http://wiki.x-plane.fr/index.php?title=Le FMS](http://wiki.x-plane.fr/index.php?title=Le_FMS)

for automatic pilot

[http://wiki.x-plane.fr/index.php?title=Le pilote automatique : D%C3%A9butants](http://wiki.x-plane.fr/index.php?title=Le_pilote_automatique:_D%C3%A9butants)

for automatic landing

<https://defuse.ca/x-plane-combat.htm>

combat in x-plane 10.

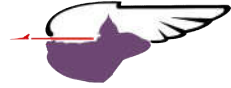
## Support

The support and question-answer are on the site x-plane.org forum.

<https://forums.x-plane.org/index.php?/forums/topic/147400-sukhoi-su-57/>



# Sukhoi-57



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**This add-on aircraft is a game, it is not exactly the real avionics, we found very little accurate documentation of this plane, it is still surrounded by secrets.**

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