

P-30

NORTHROP
GRUMMAN

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FLIGHT MANUAL FOR X-PLANE 11

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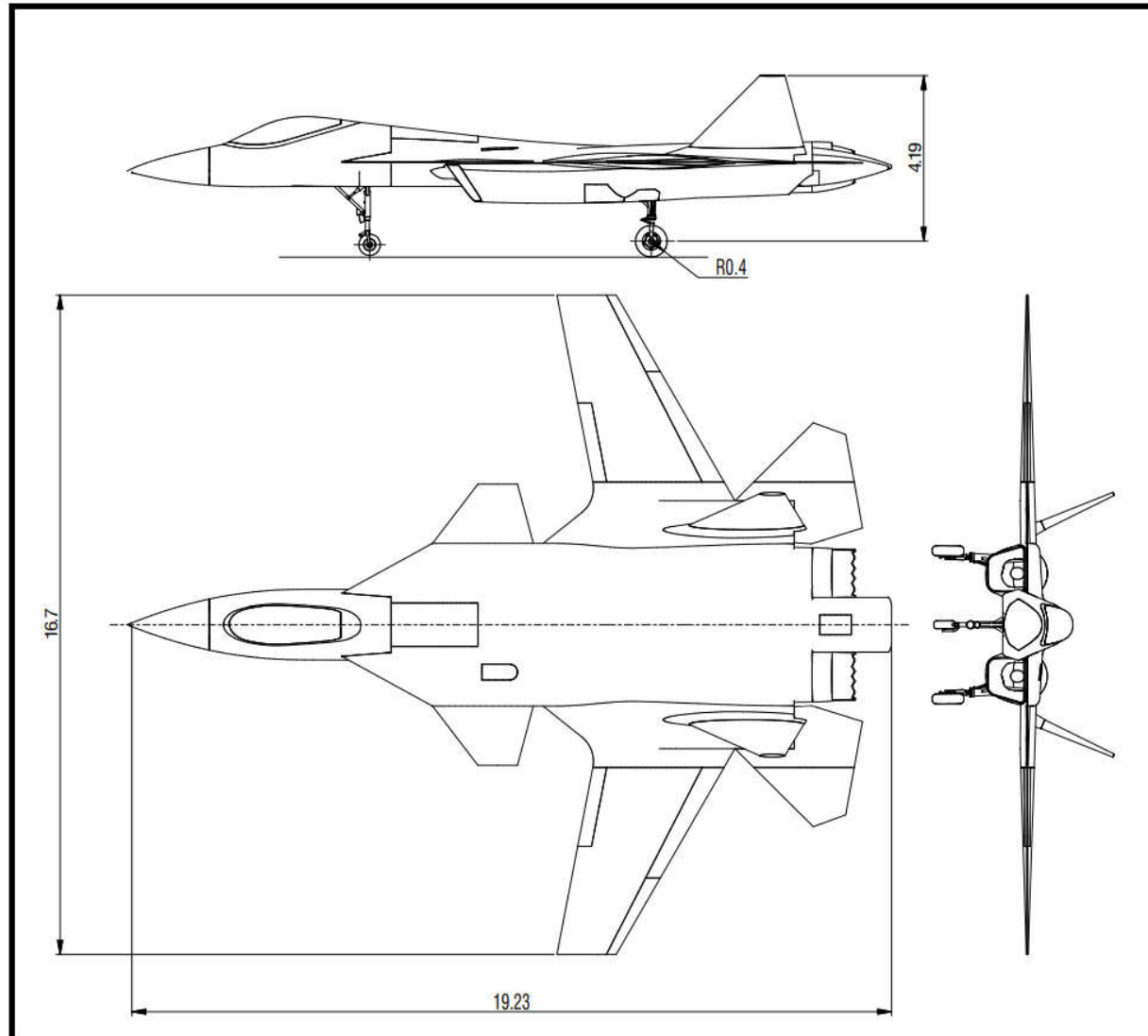
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Overall dimensions.



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The story of P30

P-30 is a new project different from what currently exists.

The plane has the wings reversed in the direction of advance, technique very difficult to carry out, because of the enormous stresses on the wings in supersonic mode.

But today with composite materials, this has become possible.

The 1980s Grumman X-29 (1984 to 1991 for the last flight) was designed to explore this promising technique.

It's been 40 years already.

The plane was a success, but I do not know the reasons for its abandonment.

The X-29 clearly inspired this P30. This is the reason why its name is:

Northrop Grumman P30.

The sukhoi su-47 uses the same principles, but later, in 1997.

Airplane also abandoned.

For the pleasure of making and flying this **P-30** aircraft, it is also vertical takeoff, with orientable thrust vectors.

Link wikipedia source

https://en.wikipedia.org/wiki/Grumman_X-29

https://en.wikipedia.org/wiki/Sukhoi_Su-47

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General characteristics

Crew: 1

Length: 19.23 m (62,3 ft)

Wingspan: 16.7 m (52,5 ft)

Height: 4.59 m (13.1 ft)

Empty weight: 17,690 kg (39,768 lb)

Max takeoff weight: 35,000 kg (78,683 lb)

Fuel capacity: 10,300 kg (23,155 lb)

Powerplant: 2 * Pratt & Whitney, horizontal flight ----- 2 * Pratt & Whitney, vertical take off

- **Dry thrust:** 77.8 kN (17,500 lbf) each
- **Afterburner:** 27 kN (6,000 lbf) each

Performance

Maximum speed: Mach 2,5

Cruise speed: Mach 1.6

Endurance: 1 hours with 7,000 lb fuel

Service ceiling: 25,000 m (80,000 ft)

g limits: +9, -3

Armament

1× 20 mm **GM61A2** gun

5× **AIM-9** air-to-air missile

2× **AIM-7** air-to-air missile

2× **AIM-120** air-to-air missile

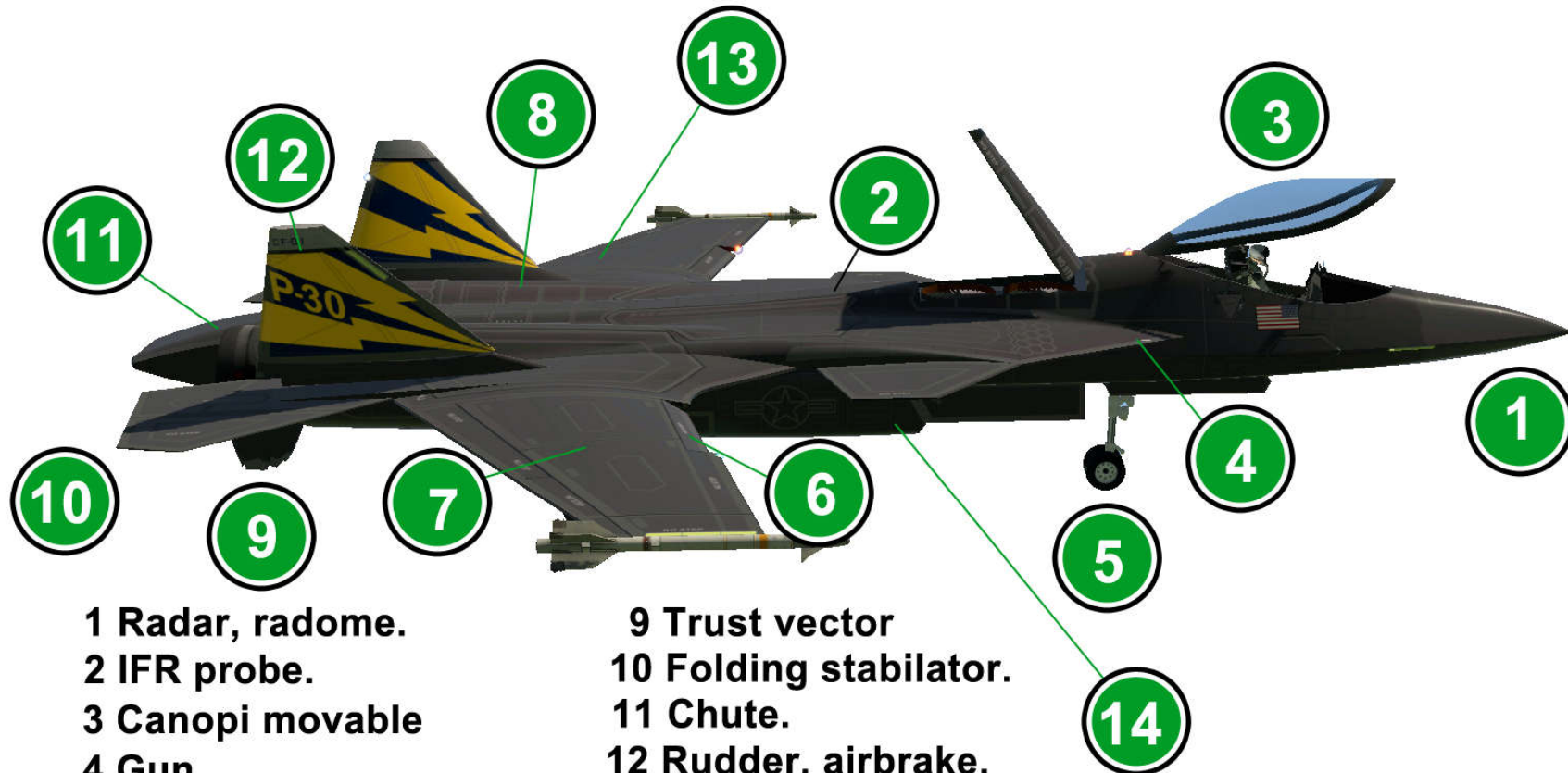
2× **AGM** air-to-gnd missile

Electronic countermeasure

Chaff

Flares

• Presentation xplane model



- 1 Radar, radome.
- 2 IFR probe.
- 3 Canopi movable
- 4 Gun
- 5 Landing gear.
- 6 Slats.
- 7 Folding wings.
- 8 Engine.

- 9 Thrust vector
- 10 Folding stabilator.
- 11 Chute.
- 12 Rudder, airbrake.
- 13 Flaps.
- 14 Internal weapon.

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Liveries



Link for liveries :

https://forums.x-plane.org/index.php?/profile/478765-pizzagalli/content/&type=downloads_file

Cockpit 3D

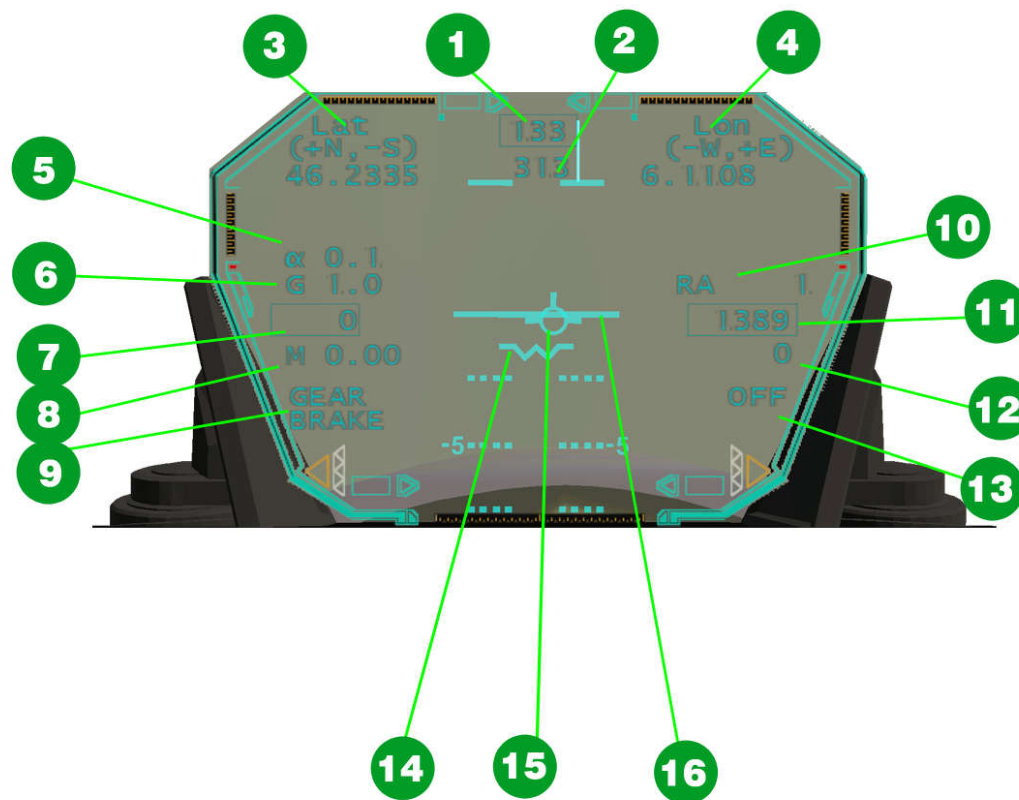
Front panel



- 1 Autopilot
- 2 Screen left: PFD.
- 3 Screen right: MFD.
- 4 Fuel indicator.
- 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.
- 15 Fine adjustment vector

HUD

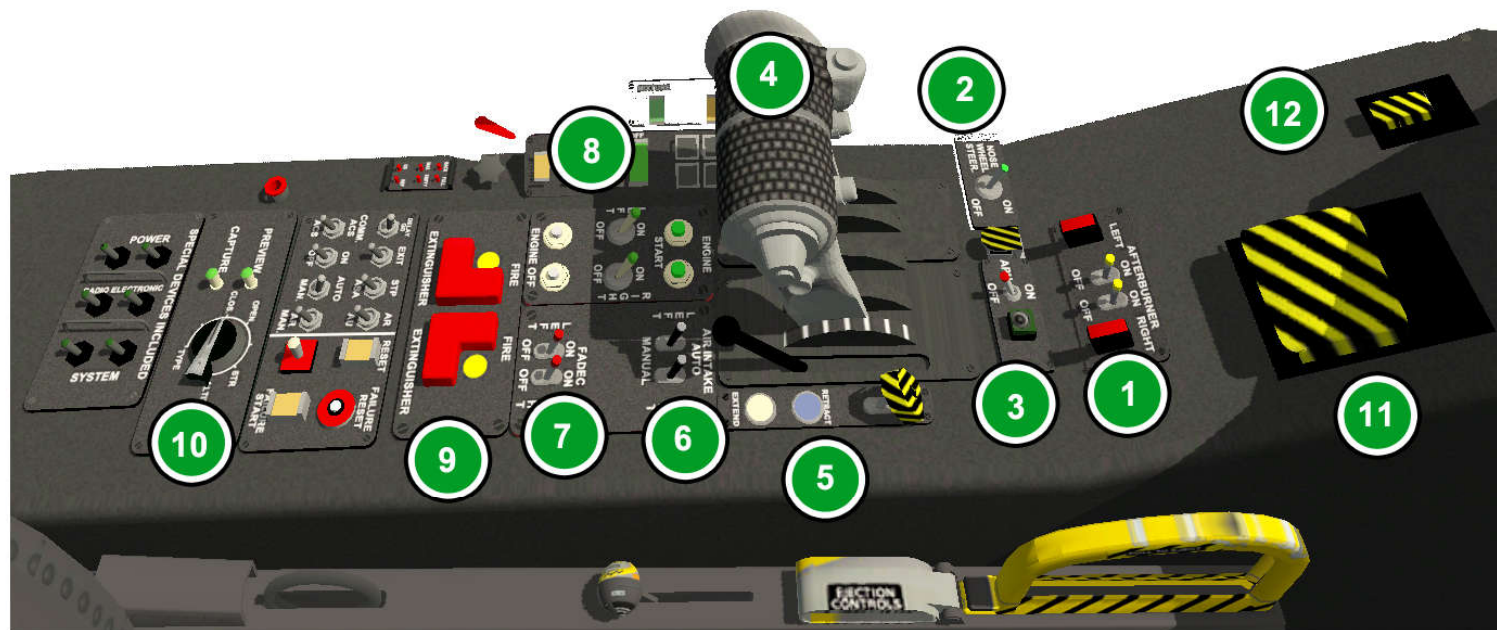


- 1. Heading, (magnetic)
- 2. Heading, opposite
- 3. Latitude
- 4. Longitude
- 5. AoA, angle of attack
- 6. G meter

- 7. Airspeed
- 8. Mach meter
- 9. Landing gear & speedbrake indicator
- 10. Radio altimeter
- 11. Altitude

- 12. Vertical speed
- 13. Weapon indicator
- 14. Waterline symbol
- 15. Velocity vector
- 16. Horizon line

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
- 11 Select thrust vector 0° or 89°.
- 12 Chute.

Right panel



1 Bleedair.

2 Pressurization unit.

3 Anti-ice.

4 Exterior lifgts.

5 Transponder.

6 Electric power unit.

7 Radionav.

8 Cockpit internal lights.

Pilot automatic



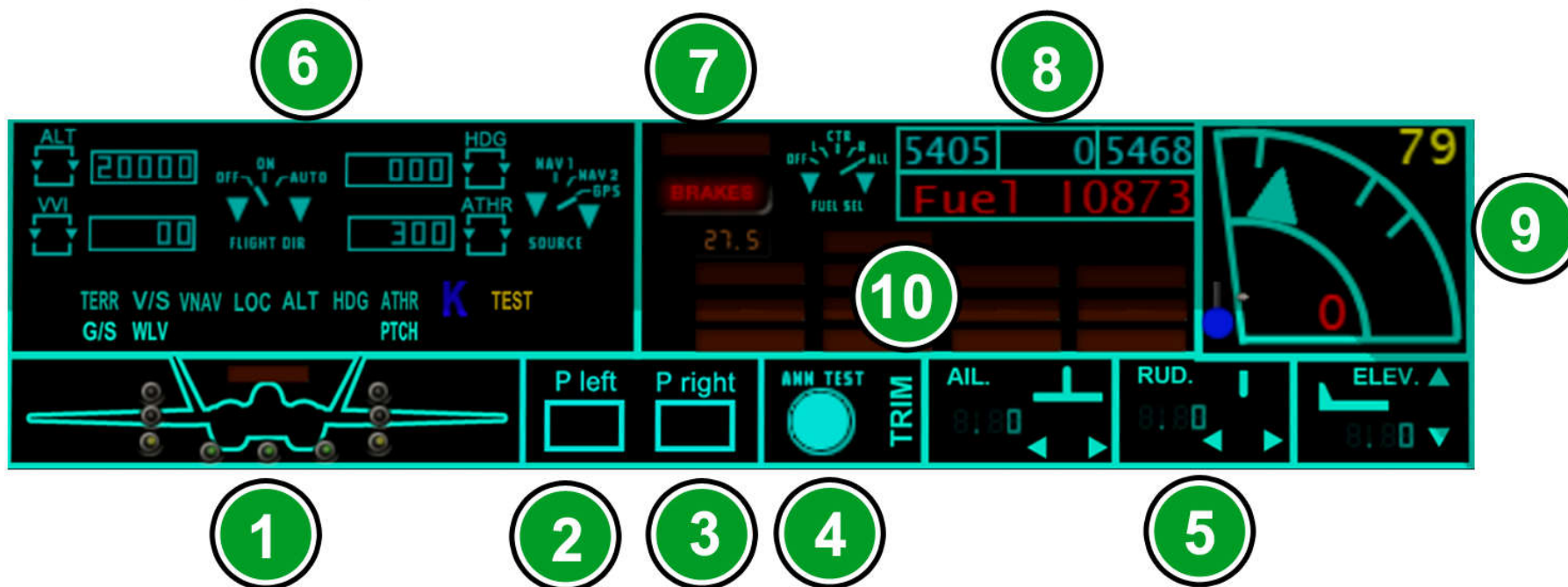
<https://forums.x-plane.org/index.php?/files/file/1799-austins-auto-pilot-how-to-pdf/>

The maximum speed advised for PA is mach 0,8

Basic instruments.

- 1 Flaps, traingear indicator
- 2 Change screen left
- 3 Change screen right
- 4 Test annunciator
- 5 Trim position (degrees)

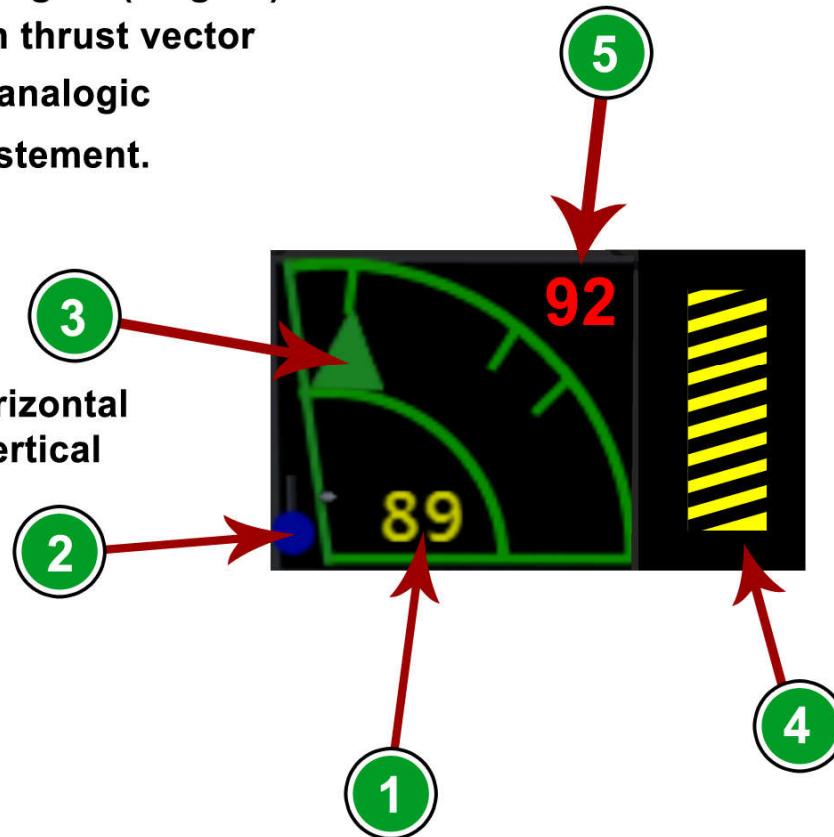
- 6 PA management.
- 7 Brakes indicator, click for activate on/off
- 8 Fuel indicator.
- 9 Thrust vector management.
- 10 Fault annunciator



Thrust vector position indicator.

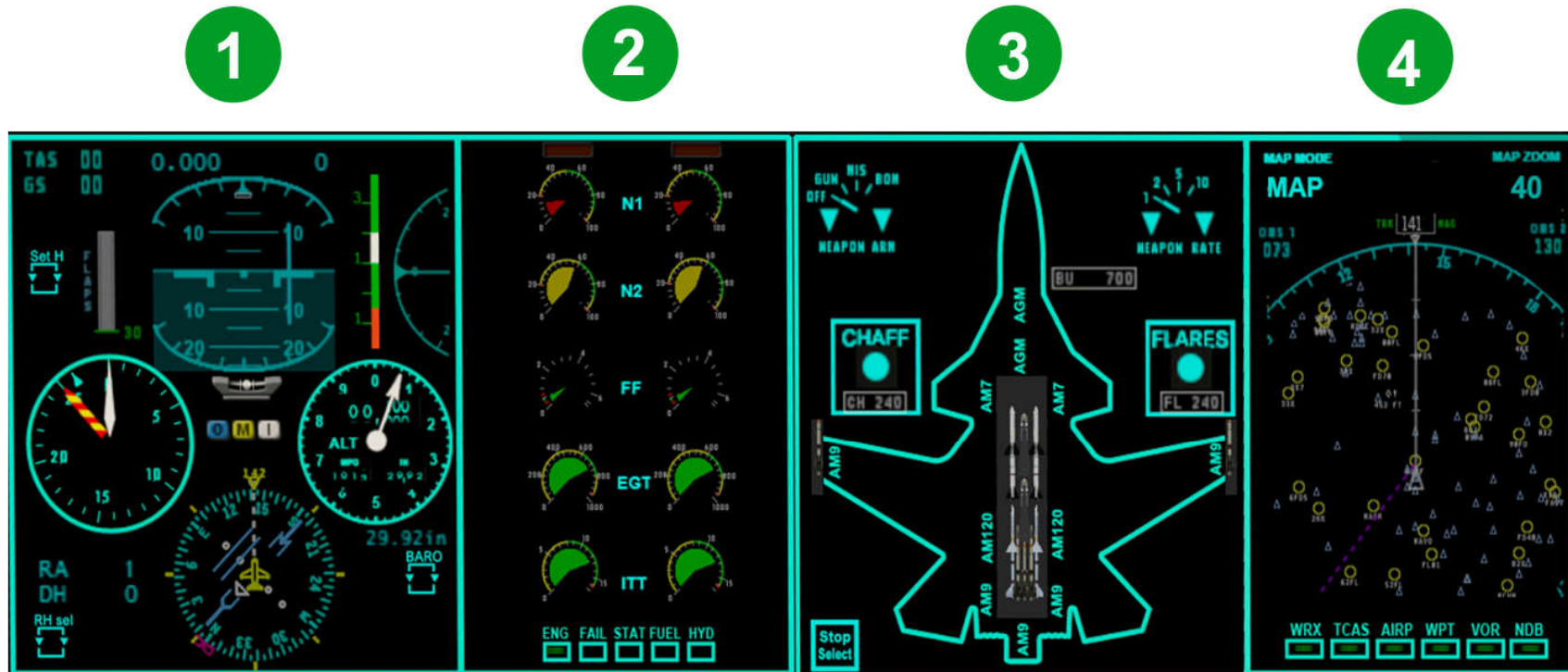
- 1 Thrust vector position digital (degrees)
- 2 Button change position thrust vector
- 3 Thrust vector position analogic
- 4 Thrust vector fine adjustment.
- 5 Throttle position (%)

0 degree, rotor position horizontal
90 degree, rotor position vertical



Moving the blue point (2) your change the angular position of the rotor

Front panel, second panell



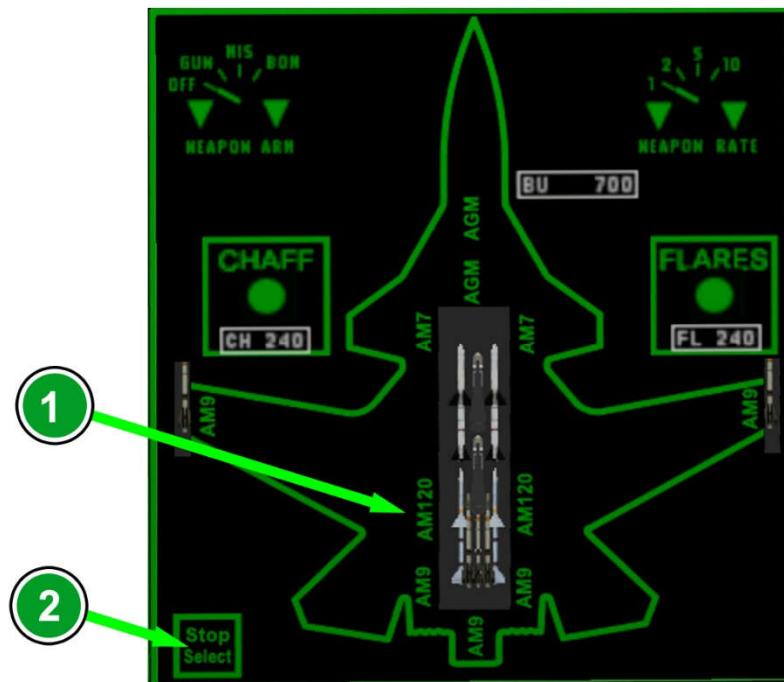
1 Screen left: Artificial horizon
Linear Gmeter, VVI indicator.
Hsi, altitude, machmeter.
flaps indicator, airspeed trend.

2 Ecam.

3 Weapons management.
weapon camera

4 Screen right: Efis map

Weapons panel



When you select a desired weapon by clicking on it, n°1 for example.

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

To stop the selection, press button 2.

You can also use the conventional method by selecting WEAPON ARM. in this case the weapons are launched according to the storage made by plane maker.

ECAM panel

- 1 Engine first stage compressor speed
- 2 Engine second stage compressor speed
- 3 Fuel flow
- 4 Temperature of exhaust gases.
- 5 Temperature of inlet gases.

1

2

3

4

5



Screen buttons

There are 4 click buttons. TW = thrust vector

1 Position of the TW 89°.

White color : you can move the TW manually

Green color : TW move 89° automatically.

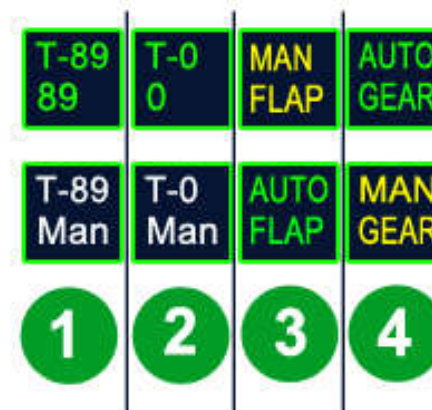
2 Position of the rotor, 0°.

White color : you can move the TW manually

Green color : TW move 0° automatically.

3 AutoFlap, green color Flap move automatically.

4 Autogear, green color Gear move automatically.



Logic of points 1 and 2:

When these buttons are set on green, the rotors rotate as setup, 0 ° or 89 °.

If you push on the button and set the light in white position, it is then possible to manually control the inclination of the rotors. (with the small blue button on the front panel, or with page up or page down on the keyboard.)

Fly your P-30

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.

Vertical takeoff

TV = thrust vector.

1. To takeoff, you need to set the TV at 87-88 degrees, check the TV angle indicator, which is done by using on the wheel. Otherwise you can move the blue point of the TV indicator.
2. The brakes can be kept locked as this will prevent the aircraft from drifting.
3. The throttle should be around 90%.
4. Gently pull on the handle to keep P30 horizontal.
5. Climb to a minimum altitude of 130 feet (radar altitude), higher is better.

At this point, you can click on the **TO man** button which will become green and the transition to 0 ° pods will be automatic.

6. The P-30 must be kept horizontal.

There are many ways to take off that you will discover with practise. One of the advantage of this plane is its great stability.

The secret to landing or taking off is using the TV by selecting the TV's angle. Both horizontal and vertical speeds should be maintain to keep the power that allow you to pilot in various flying conditions.

Normal takeoff (horizontal)

1. To takeoff, the TV should be set at 0° to 45°, check with the TVs' angle indicator. Otherwise you can move the blue point of the TV indicator.
2. The brakes are not activated,
3. The throttle should be around 80% or high.
4. Gently pull on the handle to keep P-30 horizontal
5. In summary it's like a normal plane.

Normal landing (horizontal)

It's like a normal plane.

Vertical landing

For a vertical landing from 1000 feet:

1. Reduce totally the throttle, 80%
2. autoflaps engaged
3. airbrakes on
4. Wait until the speed is about 140 knot
5. TV at 87 °
6. Locked the wheel brakes
7. Slightly throttle to support the vertical descent
8. Adjust the throttle to maintain a descent of 1500 ft / min, 2000 ft / min.
The landing gear will automatically exit at 300 feet
9. Use the throttle with care and maintain a low speed of about 40-100 KIAS
The landing gear automatically comes out at 300 feet.
10. Control the descent while maintaining P-30 horizontal.
11. Once hit the ground, reduce the throttle as much as possible.

There are many ways to landing, discover them with practice.

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

Support

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

<https://forums.x-plane.org/index.php?/forums/topic/204908-p-30-northrop-grumman-support-and-questions/>

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Enhancement for VR enthusiasts.

As I said before, I do not provide any warranty on the VR mode.

The aircraft operates partially in VR mode.