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INNOVATIVE THINKING 2

SP2 / ADVANCED



T-6A TEXAN II

PILOT HANDBOOK

Introduction

It doesn't seem that long ago that the T-6/A Texan II, our first in the Pro Series line of products was released to an eager public, yet in the last two years since its release, the T-6/A Texan II has become so popular that it has received positive feedback from such avenues as Raytheon Australia & various aircrew of the United States Navy and United States Air Force.

It is from this feedback and from the feedback of our customers that we have developed the final rendition of the T-6/A Texan II product.

The IRIS T-6/A Texan II Advanced takes what we have learned from the last two years and packages it in a high fidelity simulation platform designed and developed with military classroom training in mind.

The IRIS Pro Series T-6/A Texan II Advanced has been developed in partnership with Virtual Flight Academy as a key component in their upcoming training package being presented to the United States Air Force Academy. We are proud to be part of this endeavor, and from the feedback thus far, this latest rendition of the T-6/A Texan II is a significant step to making the VFA's plans a reality.

In fact, we're so confident in the fidelity of this aircraft, that we've provided you with the USAF operations manual for the T-6/A Texan II, which contains a wide variety of useful information relating to the operation and performance of the aircraft. All associated documentation can be located within the following folder;
Microsoft Flight Simulator X/IRIS Pro Series/T-6A Texan II/Manuals & References

For those reading this manual who have obtained the free SP2 update, many of the systems features in this manual are not applicable to you. Whilst the gauges and flight model in the Advanced product are key components in SP2, many of the systems are in the advanced product only.

As such when reading through this manual you may find sections labeled '***(Advanced Product ONLY)***. Those sections only apply to the advanced version of the aircraft.

If you are a legitimate purchaser of the IRIS T-6/A Texan II and have downloaded the free SP2 update and wish to purchase the Advanced version for a discounted price, please forward your proof of purchase to support@irissimualtions.com and we will forward you a discount code to use on our store.

Finally I hope you all enjoy this new lease of life breathed into the IRIS T-6/A Texan II as it has provided us with many hours of joy testing and developing this product for you.

David Brice
Founder & Product Manager
IRIS Flight Simulation Software

Dedication



Photo © USAF website

I would personally like to dedicate this product to a man whom I've recently come to know, Brig. Gen. Randy Cubero. I was introduced to General Cubero a number of weeks ago by Flack Maguire, Executive Director of Virtual Flight Academy, whom the T-6/A Texan II Advanced was developed for.

One time Dean of the US Air Force Academy, General Cubero saw action in the Vietnam War flying the OV-10 as a forward air controller followed by other assignments in Panama and the Military Airlift Command where he flew the C-118, C-135 and C-141.

General Cubero, has been instrumental in assisting me with developing the multiplayer aspect of this version of the T-6/A Texan II. Both of us spent numerous hours nailing down a few issues relating to the shared cockpit experience in FSX so that we could provide a first class demonstration of the product.

So I would like to publicly thank General Cubero for his time, effort and seemingly unending patience in the face of one of the more tricky aspects of flight simulator development…... troubleshooting!

General Cubero has his name firmly placed on the side of the USAF Colombus AFB variation and the new 'fictional' USAF Academy variation in recognition of his accomplishments and the valuable assistance he has provided.

For more information on Brig. Gen. Cubero, please visit the USAF Biographies page below;

http://www.af.mil/bios/bio.asp?bioID=5128

Important Information

Disclaimer & End User License Agreement

Please remember that this product is for entertainment purposes only and as such should not be used for real world flight training.

Not all systems have been simulated and those which have been simulated are done so using the limitations of the Microsoft Flight Simulator platform.

Any enquiries regarding commercial, military or academic use of this program should be directed via e-mail to admin@irissimulations.com

Furthermore, all components of this product are copyright IRIS Flight Simulation Software with the exception of the product sounds which are copyright Turbine Sound Studios and are used under license.

NO replication, unauthorized distribution, reduction or reverse engineering of this software, either in whole or in part, is permitted in ANY form without the express written permission of IRIS Flight Simulation Software.

By installing this software, you are hereby agreeing to the above terms and conditions.

About this Guide

This guide has been written to familiarize new users to the systems, operations and handling of the IRIS Pro Series T-6/A Texan II product. It is highly recommended that users have a working knowledge of Microsoft Flight Simulator and the theory of flight PRIOR to running this product.

By reading and learning the Pilot Manual prior to flying and keeping it to hand during your flight for reference, you will gain the most enjoyment from this product.

For additional information not contained in this guide, please refer to the documentation included in the folder below;

Microsoft Flight Simulator X/IRIS Pro Series/T-6A Texan II/Manuals & References

Aircraft Specifications



General characteristics

Crew: 2, tandem seating
Length: 33 ft 4 in (10.2 m)
Wingspan: 33 ft 5 in (10.2 m)
Height: 10 ft 8 in (3.3 m)
Empty weight: 4,900 lb (2,087 kg)
Loaded weight: 6,550 lb (2,971 kg)
Max takeoff weight: 6,500 lb (2,958 kg)
Powerplant: 1× Pratt & Whitney Canada PT6A-68 turboprop, 1,100 shp (820 kW)

Performance

Maximum speed: 316 knots IAS (Mach 0.67 at high altitude, 585 km/h)
Range: 850 nm (1,575 km)
Service ceiling 31,000 ft (9,448 m)
Rate of climb: 4,500 ft/min (1,372 m/min)

Armament

None.

Sec 1. Cockpit Systems

T-6/A Texan II Cockpit Layout

The IRIS T-6/A cockpit layout is based on the US Navy/Air Force JPATS Training Documentation. However as this is based on early documentation, you may find that some switches and systems operate differently in the current real world airframes.

The image below shows the T-6/A Texan II in virtual cockpit mode. Description of the highlighted sections are on the following page.



Sec 1. Cockpit Systems

T-6/A Texan II Cockpit Layout (cont.)

T-6/A Texan II Virtual Cockpit Layout Overview

As the Virtual Cockpit and 2D cockpit share the same instruments and layout, we have chosen to describe the location of the Virtual Cockpit instruments and their operation so not to double up on information.

1. ***Main Instrument Panel featuring;***
   - *EHSI*
   - *EADI*
   - *PEDD*
   - *AEDD*
   - *ESND*
   - *Digital ASI*
   - *Digital VSI*
   - *Digital Altimeter*
   - *Radio System*
   - *Flight plan Display Unit (FDU)*
   - *Gear & Flap indicators*
   - *Central Warning/Caution/Advisory and Annunciation System*
   - *Standby Instrumentation*
   - *EFIS*
   - *Chronometer*
   - *AOA Indicator and Indexer*

2. ***Left Console featuring;***
   - *Lighting and Trim Aid Console*
   - *Power Control Lever and Flap Control Console*
   - *Seat and Systems Test Console*

3. ***Right Console featuring;***
   - *Propulsion System Console*
   - *Temperature Systems Console*
   - *Oxygen Systems Console*

Whilst we have made every effort to make all the switches and controls functional in the T-6/A Texan II, due to the limitations of the software, some systems are not replicated at this time. In those instances, whilst the switches will be clickable for procedural purposes, they will have no effect in the simulation.

In those instances we have marked the system description as (NF).

Sec 1. Cockpit Systems

Main Instrument Console

The main instrument console contains all instrumentation and systems displays for the T-6/A Texan II necessary for flight and operation.

The image below shows the console in virtual cockpit mode. Description of the highlighted sections are as follows;



1. ***Angle of Attack Indicator*** *- Displays the current angle of attack relative to the airflow over the wing.*
2. ***Digital Airspeed Indicator*** *- Shows the current indicated airspeed in knots.*
3. ***Electronic Attitude Display Indicator (EADI)*** *- Shows the current aircraft attitude and ILS information. More details can be found in Section 2.*
4. ***Digital Altitude Indicator*** *- Displays the current altitude of the aircraft in feet. Also features a Kholsman knob for adjustment of the ambient pressure reading.*
5. ***Nosewheel Steering and Speed Brake indicators*** *- Displays if the Nose-wheel Steering system is active (top indicator) and if the Speedbrake is deployed (bottom indicator).*
6. ***Chronometer*** *- Displays the current local time in 24 hour format.*
7. ***G-Force Indicator*** *- Displays the current force in G being applied to the airframe with needles for maximum and minimum attained G-force.*

Sec 1. Cockpit Systems

Main Instrument Console (cont.)

The main instrument console contains all instrumentation and systems displays for the T-6/A Texan II necessary for flight and operation.

The image below shows the console in virtual cockpit mode. Description of the highlighted sections are as follows;



8. ***Radio System*** *- Displays the current radio frequencies for ADF, Communications, Transponder and NAV1.*
9. ***Electronic Horizontal Situation Indicator (EHSI)*** *- Displays the current navigational data in conjunction with the EFIS panel. Please refer to Section 2 for more detailed information.*
10. ***Digital Vertical Speed Indicator*** *- Displays the current speed of ascent or descent in feet per minute.*
11. ***Primary Engine Data Display (PEDD)*** *- Displays the aircrafts major engine data.*
12. ***Flightplan Display Unit (FDU)*** *- Displays the flight-planner route mode of the Texan II GPS system.*
13. ***Alternate Engine Data Display (AEDD)*** *- Displays both cockpits with backup visual indication of engine operations.*
14. ***Engine/Systems/NACWS Display (ESND)*** *- Displays current oil, hydraulic and electrical systems data.*

Sec 1. Cockpit Systems

Main Instrument Console (cont.)

The main instrument console contains all instrumentation and systems displays for the T-6/A Texan II necessary for flight and operation.

The image below shows the console in virtual cockpit mode. Description of the highlighted sections are as follows;



15. ***Popup Navigator*** *- Displays the panel popup overview controller allowing access to the side consoles and other instrumentation in the 2D panel or quicker access to pop-ups in the Virtual Cockpit view.*
16. ***Audio Console*** *- Toggles on or off many audio switches for various navigational systems.*
17. ***Standby Airspeed Indicator*** *- Displays the current indicated airspeed of the aircraft.*
18. ***Standby Attitude Indicator*** *- Displays the current attitude information of the aircraft.*
19. ***Standby Altimeter*** *- Displays the current height of the aircraft, in feet from Sea Level.*
20. ***Turn and Slip indicator*** *- Displays the current turn and slip of the aircraft.*
21. ***Central Warning/Caution/Advisory and Annunciation System (CWS)*** *- Displays to the pilot any issues that need to be brought to their attention during aircraft operations.*

Sec 1. Cockpit Systems

Main Instrument Console (cont.)

The main instrument console contains all instrumentation and systems displays for the T-6/A Texan II necessary for flight and operation.

The image below shows the console in virtual cockpit mode. Description of the highlighted sections are as follows;



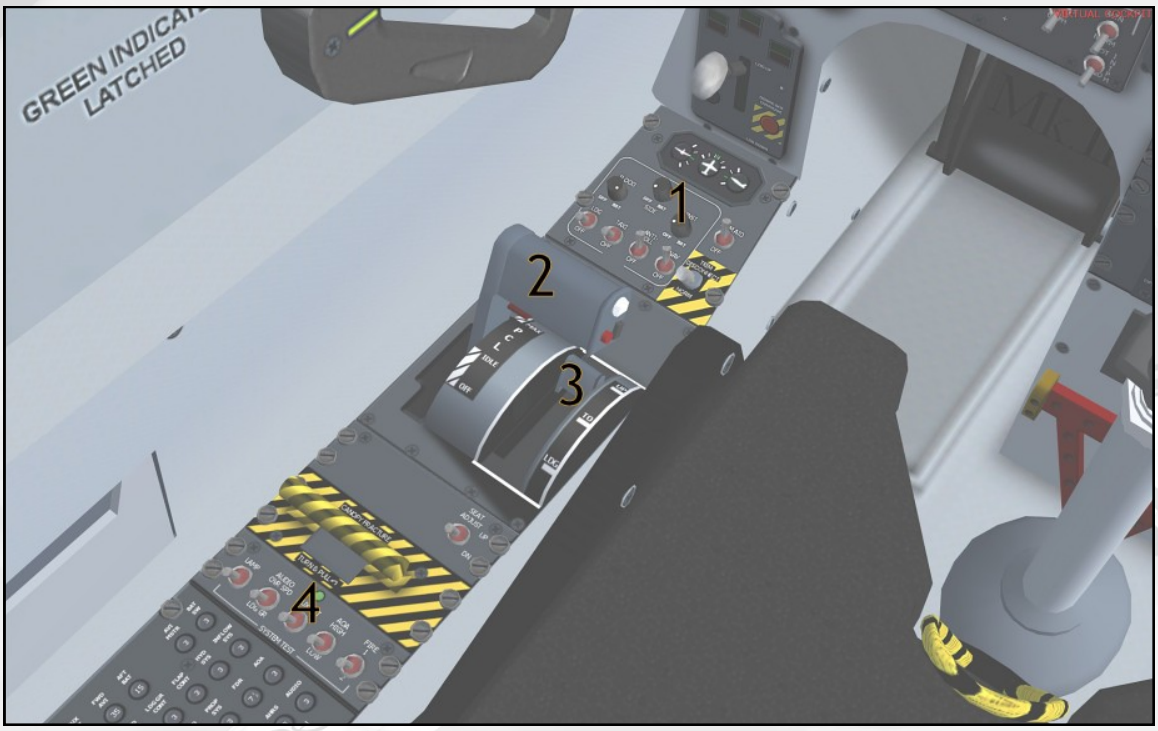
22. ***Flap Indicator*** *- Displays the current position of the wing flaps.*
23. ***Electronic Flight Information System (EFIS)*** *- Allows operation of the EADI and EHSI systems.*
24. ***Parking Brake Handle*** *- Turn to engage or release the aircraft park brakes.*
25. ***Gear indicator and Handle*** *- Pull or push to raise or lower the landing gear. Also features indication lights, green for down, red for transitioning and no lights indicate gear raised.*
26. ***Backup Communication Radio*** *- A radio for COM2 frequency tuning.*

Sec 1. Cockpit Systems

Pilot's Left Hand Console

The left hand console contains the lighting and trim aid console, PCL console and system test console for the T-6/A Texan II.

The image below shows the console in virtual cockpit mode. Description of the highlighted sections are as follows; More detailed information on each console can be found in Section 2.



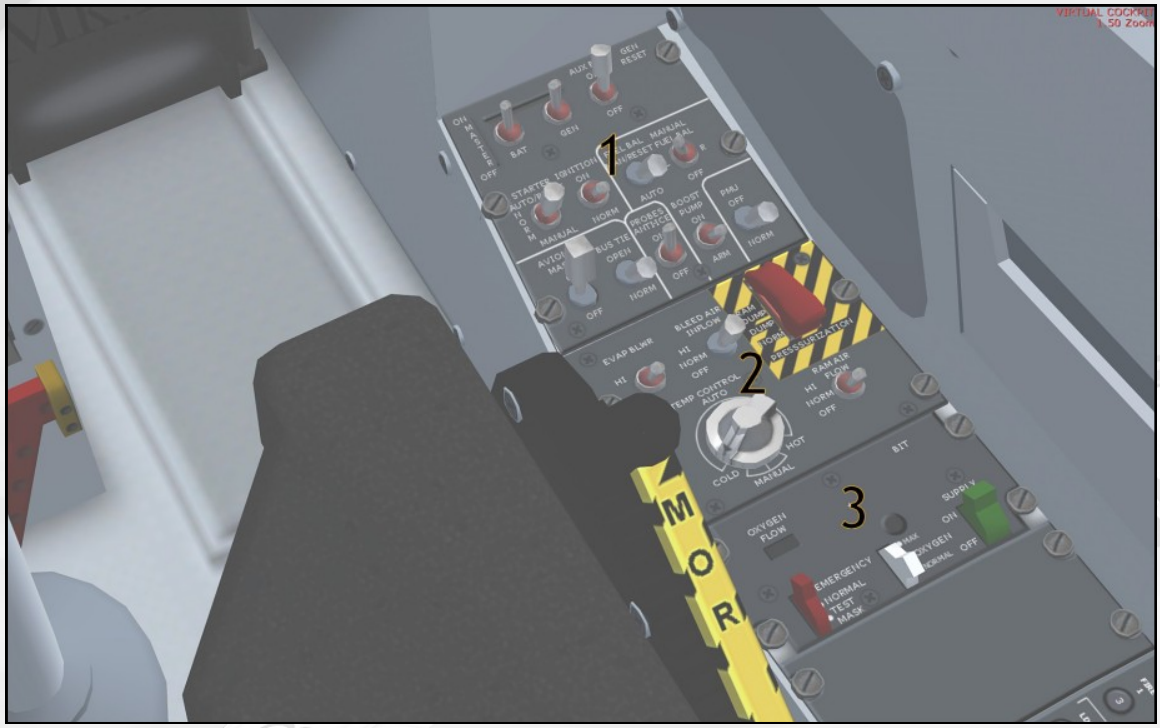
1. ***Lighting and Trim Aid Console*** *- Displays the aileron, rudder and pitch trimtab positions along with exterior lighting controls.*
2. ***PCL Lever*** *- The Power Control Lever directly controls the aircraft engine output. Attached to the lever is the Engine Cutoff paddle responsible for shutting down fuel flow to the engine.*
3. ***Flap Lever*** *- Pull or push to change the aircraft wing flaps from up, to takeoff and down positions.*
4. ***System Test Console*** *- The switches on this console test numerous lamps and systems in the T-6/A Texan II and is used during pre-flight.*

Sec 1. Cockpit Systems

Pilot's Right Hand Console

The right hand console contains the propulsion systems, temperature systems and oxygen systems consoles for the T-6/A Texan II.

The image below shows the console in virtual cockpit mode. Description of the highlighted sections are as follows; More detailed information on each console can be found in Section 2.



1. ***Propulsion Console*** *- Contains all the required engine systems switches and fuel control systems.*
2. ***Temperature Console*** *- Contains all the required systems switches to manage the onboard temperature and air-con systems.*
3. ***Oxygen Console*** *- Contains all the required systems switches relevant to the operation of the onboard oxygen systems.*

Sec 2. Cockpit Instrumentation

EADI (Electronic Attitude Display Indicator)

The Electronic Attitude Director Indicator lies at the very heart of the Texan II EFIS system and is the primary flight aid used when flying. The EHSI and EADI make up the core of the EFIS system.

EADI Composite Mode

In composite mode, the EADI is displayed with an Compass Rose and CDI needle overlaid on top to aid in primary navigation should either the EADI or EHSI display screen fail.

The images below show the EADI in VOR and GPS controlled composite mode. This is one of the more common modes used for primary navigation and displays a great deal of information at a glance for the pilot.
EFIS Composite Mode can be toggled on or off using the 'CMP' button on the bottom left of either display.

The top left shows the following information;

- *Distance in nautical miles from the aircraft to the navigation source (NAV1).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current navigation source.*

The top right shows the following information;

- *Current navigation course heading set by the pilot in the EFIS system.*
- *Current heading set by the pilot in the EFIS system.*



EADI in VOR Composite Mode

Sec 2. Cockpit Instrumentation

EADI (cont.)

The images below show the EADI in GPS mode. This is one of the more common modes used for primary navigation and displays a great deal of information at a glance for the pilot.

The top left shows the following information;

- *Distance in nautical miles from the aircraft to the next GPS waypoint (GPS).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current GPS waypoint.*

The top right shows the following information;

- *Current Direct To (DTK) heading set by the GPS system.*
- *Current heading set by the pilot in the EFIS system.*

Both composite modes feature a compass rose, heading bug and CDI needle for basic navigation should the need arise.



EADI in GPS Composite Mode

Sec 1. Cockpit Instrumentation

EADI (cont.)

EADI En-Route Mode

The image below shows the EADI in the standard mode often seen during flying and is similar in design to most attitude indicators. The bottom of the display shows the rate of turn gauge.



EADI during standard flight

If however, you enter an unusual attitude such as +/- 65° degrees bank or +30° / -20° pitch, the display will alter to show the unusual attitude display as indicated in the image below;



EADI during 'unusual attitude' mode

Sec 2. Cockpit Instrumentation

EADI (cont.)

As you can see, the attitude ladder has changed format and the EADI now has a bank pipper displayed for orientation.

When the aircraft returns to a pitch orientation of less than 25° up or 15° down and the bank angle is less than 60°, the normal EADI presentation will reappear.

During very high pitch angles, the display will alter once more to show a number of red recovery chevrons. The red chevrons are used to indicate the nearest direction for a level attitude recovery and are displayed between 40° and 85° nose low and between 50° and 85° nose high.

Note: With the advent of SP2, the EADI has a bank pipper displayed at ALL times.



EADI during 'unusual attitude' mode with red recovery chevrons

Sec 2. Cockpit Instrumentation

EADI (cont.)

EADI Localizer Mode

When in Localizer Approach mode, the EADI changes to display the following items (as shown in the images below);

- *Lateral deviation scale*
- *Selected course (CRS)*
- *Selected heading (HDG)*
- *Selected NAV sensor*
- *TO/FROM information*
- *Distance Information*

For ILS glide path, a stationary vertical scale is displayed on the right side of the display and marker beacon information is displayed on the EADI (if being received).

- *Outer marker in blue*
- *Middle marker in amber*
- *Inner Marker in white*



EADI in localizer mode with EHSI localizer mode underneath

Sec 2. Cockpit Instrumentation

EADI (cont.)

Failure Annunciations

If the Attitude Indicator fails, the display will show ATTITUDE FAILURE as shown below.



EADI during Attitude Indicator Failure

Sec 2. Cockpit Instrumentation

EHSI (Electronic Horizontal Situation Indicator)

The Electronic Horizontal Situation Indicator lies at the very heart of the Texan II EFIS system and is the primary navigation aid used when flying. The EHSI and EADI make up the core of the EFIS system.

EHSI Composite Mode

In composite mode, the EADI is displayed with an Compass Rose and CDI needle overlaid on top to aid in primary navigation should either the EADI or EHSI display screen fail.

The images below show the EADI in VOR and GPS controlled composite mode. This is one of the more common modes used for primary navigation and displays a great deal of information at a glance for the pilot.
EFIS Composite Mode can be toggled on or off using the 'CMP' button on the bottom left of either display.

The top left shows the following information;

- *Distance in nautical miles from the aircraft to the navigation source (NAV1).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current navigation source.*

The top right shows the following information;

- *Current navigation course heading set by the pilot in the EFIS system.*
- *Current heading set by the pilot in the EFIS system.*



EHSI in VOR Composite Mode

Sec 2. Cockpit Instrumentation

EHSI (cont.)

The images below show the EHSI in GPS composite mode. This is one of the more common modes used for primary navigation and displays a great deal of information at a glance for the pilot.

The top left shows the following information;

- *Distance in nautical miles from the aircraft to the next GPS waypoint (GPS).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current GPS waypoint.*

The top right shows the following information;

- *Current Direct To (DTK) heading set by the GPS system.*
- *Current heading set by the pilot in the EFIS system.*



EHSI in GPS Composite Mode

Sec 2. Cockpit Instrumentation

EHSI (cont.)

EHSI HSI Mode

The images below show the EHSI in VOR HSI mode. This is one of the more common modes used for primary navigation and displays a great deal of information at a glance for the pilot.

The top left shows the following information;

- *Distance in nautical miles from the aircraft to the navigation source (NAV1).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current navigation source.*

The top right shows the following information;

- *Current navigation course heading set by the pilot in the EFIS system.*
- *Current heading set by the pilot in the EFIS system.*



EHSI in HSI VOR mode.

Sec 2. Cockpit Instrumentation

EHSI (cont.)

At the left of the EHSI, the display will show either VOR or GPS depending on what the primary navigation source is set to. As you can see from the image below, it is currently set to VOR. Pressing the 'NAV' button on the EFIS panel will toggle between VOR and GPS mode.

The center of the display shows a standard compass rose along with three needles.

The main green needle is the VOR course needle and can be adjusted using the 'CRS' knob on the EFIS panel. In GPS mode the arrow is blue as explained on the next page.

The white needle displays the direction of the selected navigation source, in this case it is a VOR/DME station located 18.0 nautical miles from the aircraft at a heading of 83 degrees.

The red needle is the current GPS direction. This needle used with the flight planner facility in FS2004 or FSX will show you the direction to your next GPS waypoint.

At the very bottom of the display are the distances from the aircraft to the selected navigation sources. If no source is found or selected then the display will show '----'.



EHSI in HSI VOR mode.

Sec 2. Cockpit Instrumentation

EHSI (cont.)

EHSI HSI Mode

In GPS mode, the EHSI changes color and function. Instead of showing the same information as in the EHSI VOR mode version, the EHSI now shows the distance from the aircraft to the next GPS waypoint on the left and the suggested 'Direct To' (DTK) bearing on the right.



EHSI in HSI GPS mode.

Sec 2. Cockpit Instrumentation

EHSI (cont.)

EHSI DG Mode

In directional gyro (DG) mode, the EHSI simply shows the current heading bug as controlled by the pilot via the EFIS panel and a standard compass rose.

A new code change has also allowed display of a VOR and ADF needle to provide the DG mode with RMI functions. (Not shown below)

HSI and DG modes are toggled with the HSI button on the EFIS panel.

Note: The SP2 update now adds an ADF needle to the DG Mode display. The ADF needle cannot be toggled on or off, however it will display Red X marks to indicate if the ADF needle is unreliable.



EHSI in DG mode.

Sec 2. Cockpit Instrumentation

EHSI (cont.)

EHSI ARC Map Mode

In ARC Map mode, the EHSI displays a large scale moving map forward of the aircraft as indicated in the image below.

As with the HSI mode, the top left shows the following information;

- *Distance in nautical miles from the aircraft to the navigation source (NAV1).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current navigation source.*

The top right shows the following information;

- *Current navigation course heading set by the pilot in the EFIS system.*
- *Current heading set by the pilot in the EFIS system.*



EHSI in ARC Map Mode showing Airports, VORs and NDBs

Sec 2. Cockpit Instrumentation

EHSI (cont.)

In addition, the ARC Map mode shows a deviation bar on the bottom of the screen which acts as a centering needle for the selected navigation source, similar in function to the CDI needle when on HSI mode.

The moving map will ALWAYS display your current flight plan route, however by pressing the ARC button on the EFIS panel you can cycle through the following ARC map display modes.

- *ARC Map with VOR stations displayed*
- *ARC Map with VOR & Intersections displayed*
- *ARC Map with VOR & Intersections and Airports displayed.*
- *Revert to HSI mode.*

When in GPS Mode, the ARC Map alters slightly showing the same information as in the EHSI VOR mode version, the EHSI now shows the distance from the aircraft to the next GPS waypoint on the left and the suggested 'Direct To' (DTK) bearing on the right, along with a CDI needle which is slaved to the current flight plan waypoint.

All other ARC functions as indicated above apply in GPS mode also.



EHSI in GPS ARC Map Mode showing VORs

Sec 2. Cockpit Instrumentation

EHSI (cont.)

EHSI Standard Map Mode

In normal map mode, the EHSI displays a 360 degree moving map centered on the aircraft as indicated in the image below.

As with the HSI mode, the top left shows the following information when in VOR NAV mode;

- *Distance in nautical miles from the aircraft to the navigation source (NAV1).*
- *Current indicated airspeed of the aircraft.*
- *Estimated time of arrival at the current navigation source.*

The top right shows the following information when in VOR NAV mode;

- *Current navigation course heading set by the pilot in the EFIS system.*
- *Current heading set by the pilot in the EFIS system.*



EHSI in GPS Map Mode showing Airports, VORs and NDBs

Sec 2. Cockpit Instrumentation

EHSI (cont.)

When in GPS Mode as shown below, the map alters slightly showing the same information as in the EHSI VOR mode version, the EHSI now shows the distance from the aircraft to the next GPS waypoint on the left and the suggested 'Direct To' (DTK) bearing on the right, along with a CDI needle which is slaved to the current flight plan waypoint.

Both the MAP and ARC modes can be zoomed from 2nm range out to 500nm range by using the appropriate 'RNG' buttons on the EFIS panel.



EHSI in GPS Map Mode showing Airports, VORs and Intersections

Sec 2. Cockpit Instrumentation

EHSI (cont.)

EHSI Failure Annunciations

In the event of a heading indicator failure, the EHSI will display as below;



EHSI with Heading indicator failure

Sec 2. Cockpit Instrumentation

Primary Engine Data Display (PEDD)

The PEDD is responsible for displaying all major engine data and is tied to the Texan II generator bus and avionics master switch. Both switches need to be on in order to power the display.

The PEDD displays the following information;

- *Engine RPM (N2)*
- *Internal Turbine Temperature (ITT)*
- *Engine N1 value*
- *Outside Air Temperature (OAT)*



Primary Engine Data Display

Sec 2. Cockpit Instrumentation

Alternate Engine Data Display (AEDD)

The alternate engine data display (AEDD) provides each cockpit with backup visual indication of engine operations.

Information provided on the AEDD includes;

- *Raw Inter-Turbine Temperature (RITT)*
- *Torque*
- *Gas generator speed (N1)*
- *Cockpit pressure altitude (Not functional in current build)*
- *Cockpit differential pressure (Not functional in current build)*
- *Fuel flow*
- *Fuel quantity*

The fuel quantity gauge receives information from fuel probes to generate a visual display of amount of fuel (in pounds) residing in internal tanks

The fuel flow gauge receives information from the fuel flow transmitter and shows the rate of fuel consumption in pounds per hour.



Alternate Engine Data Display

Sec 2. Cockpit Instrumentation

Engine/Systems/NACWS Display (ESND)

The ESND display in its normal state, provides oil, hydraulic, and electrical system data.

Under certain circumstances, the ESND can also provide collision alert Information, however this has not been simulated at this time.

The NACWS display is toggled by the NACWS pushbutton and will show any FSX AI Traffic within 5 nautical miles of the aircraft.

The following information Provided by ESND in its normal state;

- *Oil temperature*
- *Oil pressure*
- *Hydraulic pressure*
- *NACWS mode selected*
- *DC voltage*
- *DC amperage*



Engine/Systems/NACWS Display

Sec 2. Cockpit Instrumentation

Digital Vertical Speed Indicator (VSI)

The Vertical Speed Indicator (VSI) shows vertical speed and direction of the aircraft.

VSI Indications;

- *Climbs or descents from 0 to 6000 FPM*

Positive indications indicate a climb. Negative indications show a descent.



Digital Vertical Speed Indicator

Sec 2. Cockpit Instrumentation

Digital Vertical Speed Indicator (cont.)

Failure Annunciations

If the Digital Vertical Speed Indicator fails, the display will show ADC A FAIL as shown below.



If the pitot static system fails, ADC FAIL will be displayed on the Altimeter, Digital VSI and Digital ASI as shown below.



Sec 2. Cockpit Instrumentation

Digital Airspeed Indicator (ASI)

The Digital Airspeed Indicator displays indicated airspeed, Mach number and maximum operating airspeed VMO.

ASI Indications;

- *Indicated airspeed (while pole)*
- *Maximum operating airspeed (red and white pole)*
- *Mach number*



Digital Airspeed Indicator

Sec 2. Cockpit Instrumentation

Digital Airspeed Indicator (cont.)

Failure Annunciations

If the Digital Airspeed Indicator fails, the display will show ADC A FAIL as shown below.



If the pitot static system fails, ADC FAIL will be displayed on the Altimeter, Digital VSI and Digital ASI as shown below.



Sec 2. Cockpit Instrumentation

Digital Altitude Indicator

The Digital Altitude Indicator (Altimeter) displays baro-corrected altitude and a 10,000 feet counter is covered by a striped flag below 10,000 feet.

The Baro-set Data displays millibars (MB) and inches of mercury (IN HG) to provides correct altitude indication.



Digital Altitude Indicator

Sec 2. Cockpit Instrumentation

Digital Altitude Indicator (cont.)

Failure Annunciations

If the Digital Altitude Indicator fails, the display will show ADC A FAIL as shown below.



If the pitot static system fails, ADC FAIL will be displayed on the Altimeter, Digital VSI and Digital ASI as shown below.



Sec 2. Cockpit Instrumentation

T-6/A Flight plan Display Unit (FDU)



The FDU displays a number of functions; (Left hand side)

- *Currently selected navigation reference point (Left) and next selected navigation reference point (right)*
- *Course Deviation Indexer*
- *Distance in nautical miles (NM) from aircraft position to next selected navigation reference point*
- *Ground Speed*
- *Estimated Time of Arrival at next selected navigation reference point (available above 50kts ground speed)*
- *Bearing to flight plan route.*

FDU display items; (Right hand side)

- *Bearing Direct To the next selected navigation reference point.*
- *Current Altitude*
- *Current Latitude value of the aircraft*
- *Current Longitude value of the aircraft*
- *The bottom left of the GPS display shows either GPS or NAV1 depending on the selected navigation method on the EFIS panel.*

Sec 2. Cockpit Instrumentation

Electronic Flight Information System (EFIS)



The EFIS control panel sits at the very heart of the T-6/A Texan II's navigation system and controls the EHSI and EADI instruments. More on both of those instruments can be found on their appropriate pages.

The EFIS buttons and dials are as follows (left to right, top to bottom);

- ***Heading adjustment knob** - Alters the heading bug on the EHSI and composite mode screens. (left to rotate anti-clockwise, right to alter clockwise and push to reset bug.)*
- ***HSI Switch** - Toggles the EHSI between HSI and DG modes.*
- ***ARC Switch** - Toggles the EHSI between ARC Map with VOR, ARC Map with VOR & NDB, ARC Map with VOR, NDB and Airports and ARC Map off.*
- ***NAV Switch** - Toggles between VOR and GPS primary navigation modes.*
- ***RNG +** - Increases MAP and ARC Map visible range.*
- ***Course adjustment** knob - Alters the course arrow on the EHSI and composite mode screens. (left to rotate anti-clockwise, right to alter clockwise and push to reset arrow.)*
- ***MAP Switch** - Toggles the MAP between MAP with VOR, MAP with VOR & NDB, MAP with VOR, NDB and Airports and MAP off.*
- ***VOR Arrow Switch** - Toggles the display of the white VOR direction arrow on the EHSI.*
- ***GPS Arrow Switch** - Toggles the display of the purple GPS direction arrow on the EHSI.*
- ***RNG -** - Decrease MAP and ARC Map visible range.*

Sec 2. Cockpit Instrumentation

Communication Radio

Like the GPS, the T-6/A Texan II's radio communication system is quite a complex system, however for the purposes of Microsoft Flight Simulator we have chosen to use only the functions operational by the simulator software.

The following information relates to the single mode used within the IRIS Pro T-6/A Texan II.

The Radio system displays a number of functions;

- *Ultra High Frequency radio (UHF)*
- *Very High Frequency radio (VHF)*
- *Transponder Squawk (ATC)*
- *Primary Navigation radio (NAV)*



COM Radio

Sec 2. Cockpit Instrumentation

Communication Radio (cont.)

By default within Microsoft Flight Simulator, the above radio items transfer as follows;

- *UHF - ADF Frequency*
- *VHF - COM1 Frequency*
- *ATC - Transponder Code*
- *NAV - NAV1 Frequency*

The radios are all tuned by clicking the mouse over the numbered areas. In the case of the VHF and NAV radios, this action will alter the standby frequencies on the left of the display. To switch the standby frequencies to active mode, you will need to click the white checkboxes on the left of the corresponding channel.



COM Radio

Sec 2. Cockpit Instrumentation

Central Warning/Caution/Advisory and Annunciation System (CWS)

The Central Warning/Caution/Advisory and Annunciation System is responsible for advising the pilot of any system issues that need to be brought to his or her attention during operations.

Please note that the CWS system has been customized slightly to meet limitations with Microsoft Flight simulator and as such should not be taken as exact to the real aircraft.



CWS Panel

Sec 2. Cockpit Instrumentation

Central Warning/Caution/Advisory and Annunciation System (CWS)

CWS Warnings and Cautions

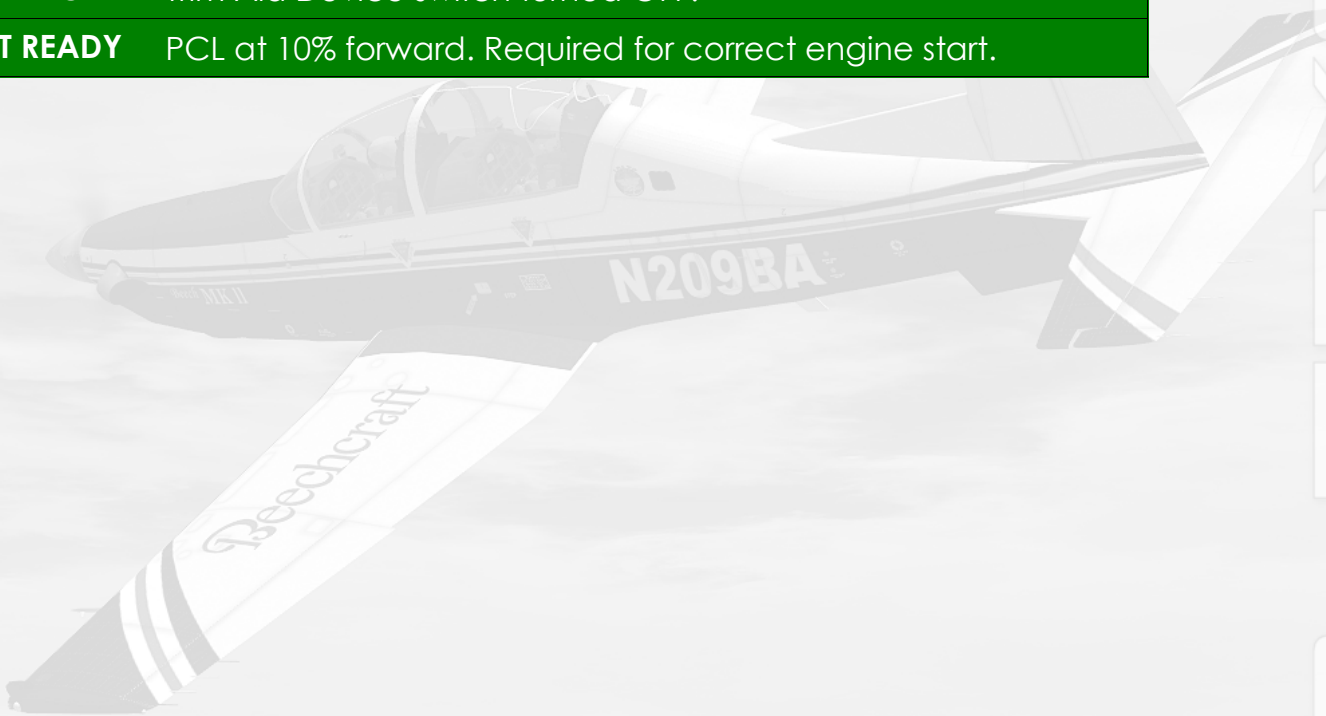
BAT BUS	Battery bus failure or master battery switch turned off.
GEN BUS	Generator bus failure or master generator switch turned off.
PMU FAIL	Illuminated if prop autofeathers.
GEN	Engine generator is inactive.
CKPT PX	Canopy is open when aircraft airborne.
CANOPY	Canopy is open.
FUEL PX	Fuel Pressure low.
OIL PX	Engine Oil Pressure low.
OBOGS FAIL	Oxygen supply switch turned off.
CHIP	Contaminent detected in engine oil system, engine damage.
CKPT ALT	Aircraft above 31,000 feet AGL.
HYDR FL LO	Aircraft Hydraulic level low.
BUS TIE	Bus Tie switch turned off.
FUEL BAL	Excess (>30%) fuel misbalance between left & right tanks.
PMU STATUS	PMU switch turned off.
EHYD PX LO	Aircraft Hydraulic Pressure low.
TAD FAIL	Trim Aid Device Failure.
OBOGS TEMP	RAM Air Flow set to LOW during high altitude operations (>29,000 feet).
L FUEL LO	Left Fuel Tank quantity below 150lbs.
R FUEL LO	Right Fuel Tank quantity below 150lbs.
DUCT TEMP	Temperature Control dial set to HOT when OAT is greater than 15 degrees Celsius.

Sec 2. Cockpit Instrumentation

Central Warning/Caution/Advisory and Annunciation System (CWS)

CWS Advisories and Annunciations

IGN SEL	Ignition Switch turned ON.
M FUEL BAL	Fuel Bal Switch turned to manual.
TRIM OFF	Trim Disconnect switch turned ON.
BOOST PUMP	Boost Pump switch turned ON.
ANTI ICE	Probe De-Ice switch turned ON.
TAD OFF	Trim Aid Device switch turned OFF.
ST READY	PCL at 10% forward. Required for correct engine start.



Sec 3. 2D Panel

2D Instrument Panel, Virtual Cockpit reference and Popup Helper

The 2D Panel for the T-6/A Texan II is a fantastic way to fly the aircraft. Both Virtual Cockpit and 2D modes feature many identical switches and systems, almost everything is clickable!

The 2D panel below has an option for a 2D Panel popup helper located on the lower left of the 2D panel.



This popup allows quick navigation over the various areas of the 2D cockpit. Further details on the separate consoles are covered in the following pages.



2D Panel Popup Helper (left)

Sec 3. 2D Panel

Lighting and Trim Aid Console

The lighting and trim aid console provides access and operation to the internal and external lighting systems of the T-6/A Texan II as well as the trim aid device (TAD) and trim indicators.

The panel is laid our as follows; (from top to bottom)



- ***(From left to right)*** *Aileron Trim indicator, Rudder Trim indicator and Elevator Trim indicator*
- *Floodlight switch* ***(2D Panel & Virtual Cockpit),*** *Side Lighting switch* ***(2D Panel only),*** *Instrument Lighting Switch* ***(not operative)*** *and Trim Aid Device switch.*
- *Landing Gear Light, Taxi Light, Anti-Collision Lights, Navigation Lights and Trim Disconnect Switch.*

In virtual cockpit mode, the floodlight switch controls floodlighting, side lighting and instrument backlighting in the single action. In 2D cockpit mode, the side lighting and floodlighting is controlled independently. To provide an overall blue floodlight at night in 2D mode, please use the Panel light shortcut ***(Shift+P)***

The Trim Disconnect switch will automatically disconnect the Trim Aid Device and center all trim values. Please also note that this system overrides any user trim inputs whilst the trim disconnect switch is set to 'Disconnect'.

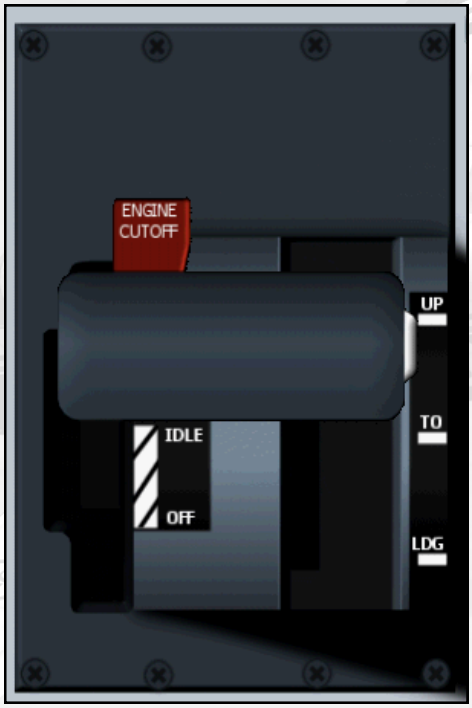
Sec 3. 2D Panel

Power Control Lever (PCL) and Flaps Console

The Power Control Lever & Flaps console is used to control engine power and aircraft flaps position.

Additionally, by clicking the red 'engine cutoff' switch at idle throttle, you can shut down the engine.

Operation of the flaps is done by clicking on the flaps area either with a 'plus' mouse cursor to raise the flaps or a 'minus' mouse cursor to lower the flaps.



Sec 3. 2D Panel

Seat Control and System Test Console

The Seat Control & System Test Console controls the viewpoint position within Microsoft Flight Simulator's 2D panel view and also controls the following test functions;



- ***LAMP*** *- Toggles full CWS lights, Master Caution Light, Master Warn Light and Fire Warn light.*
- ***AUDIO*** *- Currently not operative, but in the real aircraft test the audio function of the Overspeed and Landing Gear warnings.*
- ***AUX BAT*** *- Currently not operative, but tests the operation of the Auxiliary Battery.*
- ***AOA*** *- Tests the AOA Indexer light for proper operation.*
- ***FIRE*** *- Independently tests the Fire Warn Light.*

Please note that at this time, the canopy fracture system is non-operational within Microsoft Flight Simulator.

Sec 3. 2D Panel

Propulsion Console

The propulsion console is responsible for all startup and engine operations in the T-6/A Texan II.

The switches and controls of the propulsion panel are noted below (from left to right, top to bottom);



- ***Master Battery Switch***
- ***Master Generator Switch***
- ***Auxiliary Battery Switch***
- ***Engine Starter Switch*** *- Toggle to AUTO/RESET for engine start after following pre-start checklist.*
- ***Ignition Switch*** *- manually engages engine igniters prior to engine start.*
- ***Fuel Bal Switch*** *- toggle switch to control whether fuel tank feed is automatic or decided by the pilot.*
- ***Manual Fuel Bal Switch*** *- Used in conjunction with the Fuel Bal Switch, tells the aircraft to make use of the left or right tank for fuel feed.*
- ***Avionics Master Switch***
- ***Bus Tie Switch***
- ***Probes Anti-Ice Switch***
- ***Boost Pump Switch***
- ***PMU (Power Management Unit) Switch***

Sec 3. 2D Panel

Temperature Systems Console

The temperature console is responsible for all air conditioning and temperature operations in the T-6/A Texan II.

The switches and controls of the temperature panel are noted below (from left to right, top to bottom);



- ***Evap Blower Switch***
- ***Bleed Air Inflow Switch*** *- Required to HI for high altitude operations >29,000 feet, or OBOGS WARN light will illuminate on CWS.*
- ***Temperature Control Dial*** *- Required to HOT for operations where ambient temperature falls below 10 degrees Celsius or set to COLD if 'DUCT TEMP' light illuminates on CWS.*
- ***RAM Air Flow Switch***

Sec 3. 2D Panel

Oxygen Systems Console

- *The oxygen systems console is responsible for the OBOGS (On-Board Oxygen Generation System) in the T-6/A Texan II.*

The switches and controls of the oxygen systems panel are noted below (from left to right);



- ***Emergency Oxygen Switch***
- ***Oxygen Flow Switch***
- ***Oxygen Supply Switch*** *- Required ON for flight operations or OBOGS Fail light will illuminate on CWS.*

Sec 3. 2D Panel

Standby Instruments

- *The standby instruments console is used for displaying the standby instruments in the case of any primary instruments failing or a complete electrical system failure.*

The instruments on the standby panel are as follows;



- ***Altimeter.*** *(Top Left)*
- ***Rate of Turn indicator.*** *(Top Right)*
- ***Attitude indicator.*** *(Bottom Left)*
- ***Airspeed indicator.*** *(Bottom Right)*

Sec 4. Normal Procedures

PREPARATION FOR FLIGHT

Checklists

This section includes all procedures that are necessary for the operation of the aircraft, presented in an amplified format. The abbreviated checklists are available from the Flight Simulator kneeboard during flight and is to be carried by flight crew on every sortie.

For a more in-depth look at the T-6/A Texan II Operational Procedures, please refer to AFMAN11-248.pdf circa October 2008.
(located in your 'IRIS Pro Series/T-6A Texan II/Manuals & References' folder).

Whilst much of the information in the manual is relating to the real world Texan II aircraft, we are confident that a great deal of information will be of use for operating this simulation.

Note: The following checklists, whilst based on real the Texan II checklists are developed specifically for this simulation and should NOT be used for real world purposes.

PRE-FLIGHT

BEFORE START CHECKS

1. *Gust lock - OFF.*
2. *Park Brake - ON.*
2. *Master battery - ON.*
3. *Auxiliary battery - OFF.*
4. *Lamp Test - TOGGLE (Check Warning Panel, Master Warn Light, Master Caution Light, & Fire Warn Light).*
5. *AOA Test - TOGGLE (Check AOA Indexer operational).*
6. *Fire Test - TOGGLE (Check Fire Warn Light operational).*
7. *Navigation lights - ON.*
8. *Engine cutoff paddle - PULL UP to disengage.*
9. *PMU switch - NORM (Check **PMU STATUS** light extinguished on warning panel.)*
10. *Bus Tie switch - NORM (Check **BUS TIE** extinguished on warning panel.)*
11. *Canopy - CLOSE.*

Sec 4. Normal Procedures

STARTING

ENGINE STARTING CHECKS

1. *Anti Collision Lights - ON.*
2. *Boost Pump - ON.*
3. *Master Generator - ON.*
4. *Ignition - ON.*
5. *Increase PCL until green **'ST READY'** light appears on warning panel.*
6. *Attitude Indicator - CAGE.*
7. *Starter - AUTO/RESET.*
8. *Engine N1 - Confirm rising values.*

When engine 'OIL PX' extinguished on CWS display

9. *Engine cutoff paddle - PUSH DOWN to engage fuel flow to engine.*

At engine N1 of 20% or greater;

10. *PCL - Idle.*

When engine N1 stabilized at or above 55%:

11. *Ignition - OFF.*
12. *Starter - OFF.*

AFTER START CHECKS

1. *Confirm torque reading between 5-8%, N1 between 68-72%.*
2. *Boost Pump - ARM.*
3. *Avionics - ON.*
4. *Engine oil pressure and temperature - Green arcs.*
5. *Emergency Oxygen Switch - NORMAL.*
6. *Oxygen Supply - ON (Check **'OBOGS FAIL'** light extinguished on warning panel.)*
7. *Emergency Oxygen Switch - TEST MASK, confirm oxygen flow.*
8. *Emergency Oxygen Switch - NORMAL.*
9. *Bleed Air Inflow - HI*
10. *Trim Aid Device - ON*
11. *Attitude Indicator - UNCAGE*

Sec 4. Normal Procedures

TAXI

CAUTION

- *Maintain a minimum distance of 50 meters from preceding aircraft to prevent foreign object damage.*

BRAKING TECHNIQUE WHILE TAXIING

During extended taxiing, the recommended technique is to allow the aircraft to reach a faster than normal taxi speed. Control is exercised by the periodic application of smooth braking to bring the aircraft almost to rest before releasing the brakes completely.

TAXI CHECKS

1. *Parking Brake - OFF.*
2. *Taxi Light - ON.*

NOTE

Depending on the ambient temperature, ground slope and nature of the ground surface, the aircraft may commence to move immediately. A small amount of thrust may be required, however, once moving, idle power is usually sufficient to taxi along level ground.

3. *Brakes - Check operation.*
4. *Nose wheel steering - ON. Check function.*
5. *Flight Instruments - Check function.*

Sec 4. Normal Procedures

PRE-TAKE-OFF

PRE-TAKE-OFF VITAL ACTIONS

1. *Canopy - Closed and locked, light out.*
2. *Air brake - IN.*
3. *FLAPS - Select T/O, indicating.*
4. *Probes Anti-Ice - ON, indicating.*
5. *Trims - Set as required.*
6. *Flight Instruments - Functional check carried out. No flags.*
7. *Engine Instruments - Indications in green arc.*
8. *Hydraulic press. - Indications in green arc.*
9. *Fuel - Contents, balanced, flow normal.*
10. *CWS - No red or amber captions.*
11. *Controls - Full, and free movement.*
12. *Emergency Briefing - Conducted.*

LINE UP CHECKS

When aligned with the runway heading check;

1. *Landing Light - ON.*
2. *Transponder (XPDR) - As required.*
3. *Anti-Collision lights - As required.*

Sec 4. Normal Procedures

TAKE-OFF

NORMAL TAKE-OFF

1. *Brakes - Release.*
2. *Throttle - 75-80% Torque.*
3. *Check Torque, N1, ITT to ensure correct operations.*
4. *Airspeed - At 80 KIAS rotate.*
5. *Landing Gear and Flaps up, climbing as per AFMAN11-248 climb tables.*

NOTE

- *During throttle advance, engine limits may be momentarily exceeded. The PMU should stabilize maximum values within approximately five seconds.*

OBSTACLE CLEARANCE TAKE-OFF

1. *Throttle - 75-80% Torque.*
2. *Check Torque, N1, ITT to ensure correct operations.*
3. *Brakes - Release.*
4. *PCL - MAX.*
5. *Airspeed - At 100 KIAS rotate until 19.5 degree pitch indicated.*
6. *Landing Gear and Flap up, climb at best rate of climb holding approx 140 KIAS until clear of obstacles.*

CROSS-WIND TAKE-OFF

During the take-off roll aileron should be used into wind to assist with the maintenance of wings level.

To prevent side loads on the main landing gear, rotation to the take-off attitude should be accomplished in a positive manner.

Sec 4. Normal Procedures

TAKE-OFF

AFTER TAKE-OFF CHECKS

When the aircraft is safely airborne, proceed as follows;

1. *Landing Gear - UP.*
2. *Flaps - UP.*
3. *Air Brake - IN.*
4. *Check - LG lights out, flap indicating UP and AIR BRAKE indicating IN by 180 KIAS.*

At airspeeds above 200 KIAS, the landing gear may not fully retract. Proceed as follows;

5. *Reduce speed to below 200 KIAS.*
6. *Stabilize 1G flight.*
7. *Await gear retraction (all green and reds extinguished).*
8. *Proceed as normal.*

INFLIGHT

CLIMB/PERIODIC CHECKS

Normal climb speed is dictated by weight and based according to AFMAN11-248 climb tables. During the climb and at periodic intervals during flight conduct the following checks;

1. *Engine - Indications checked.*
2. *Hydraulic pressure - checked.*
3. *Fuel - Contents, agrees with analogue gauge, balanced.*
4. *CWS - No Red or Amber captions.*

CRUISE

For cruise data refer to AFMAN11-248.

Sec 4. Normal Procedures

INFLIGHT

FLIGHT CHARACTERISTICS

For information regarding the aircraft flight characteristics refer to AFMAN11-248 and Section 5.

PRE-MANOEUVRE CHECKS

Before maneuvers such as stalling, spinning or aerobatics, carry out the following checks;

1. *Height - Sufficient for recovery.*
2. *Equipment - No loose articles.*
3. *Fuel symmetry - Within a quarter tank.*
4. *Trims - As required.*

DESCENT AND REJOIN

Maximum Rate Descent

Entry technique for entering a maximum rate descent will depend on the flight circumstances at the time. Should a maximum rate descent be required, the following procedure is used when at or below cruise speeds and power settings;

1. *Throttle - Max power (or idle if above cruise power and speed).*
2. *Attitude - Lower to 45° nose down.*

Approaching 250 KIAS;

3. *Throttle - IDLE.*
4. *Air Brake - Out.*
5. *Airspeed - Adjust pitch to maintain 250 KIAS.*

Similar descent performance (15,000 ft/min ROD) can be achieved at 300 KIAS, clean but with higher control forces.

Sec 4. Normal Procedures

REJOIN CHECKS

Before descent or before entering the circuit pattern, carry out the following checks;

1. *Fuel - Contents, agrees with analogue gauge, balanced.*
2. *Instruments - Erect, Off flags away, Compass comparison.*
3. *Radio and navigation aids - Tune and identify.*
4. *Altimeter - Set QNH as required.*

LANDING

PRE LANDING CHECKS

1. *Airspeed - Below 180 KIAS.*
2. *AIR BRAKE - IN.*
3. *LG - DOWN, 3 greens.*
4. *Brakes - Positive feel.*
5. *Fuel - Contents, agrees with analogue gauge, balanced.*
6. *Flap - DOWN when established on finals and adjust trim as necessary.*

THRESHOLD SPEEDS

Threshold speeds are as follows;

Land Flap	*Flapless*	*Glide*
100 KIAS	*110 KIAS*	*120 KIAS*

NOTE

- *When landing in gusty surface wind conditions, increase the calculated threshold speed by half the gust factor up to 10 kts.*

Sec 4. Normal Procedures

LANDING (cont.)

NORMAL PROCEDURE

Acknowledge landing instructions and check the landing gear selector panel to confirm that the landing gear is down and locked. Lower FLAPS (as required) and maintain a constant approach path. At or near the runway threshold, commence a flare then slowly close the throttle to IDLE. Fly the main wheels onto the ground to achieve a positive touchdown.

BRAKING TECHNIQUE

Braking in the T-6/A Texan II is effective but the application of only moderate pressure can be sufficient to lock the wheels. Correct braking techniques are essential to avoid blowing tires or overheating the brakes and activating the fusible plugs in the wheels.

CAUTION

There is minimal feedback to warn of impending wheel lock, and tire blow-out can occur almost instantaneously.

Following touchdown, maximize aerodynamic braking, but lower the nose wheel onto the runway before elevator effectiveness is lost. Commence braking below 60 KIAS (as required), and introduce back stick but do not allow the nose oleo to extend. Equal weight on both main wheels can be maintained by the use of aileron into wind.

MAXIMUM EFFORT LANDING

Fly an accurate threshold speed (if required, an AOA indexer approach may be flown). Lower the nose wheel immediately after landing and commence moderate braking.

Introduce back stick, but do not allow the nose oleo to extend. When below 60 KTS groundspeed increased brake pressure may be smoothly applied. Maintain directional control by the use of rudder and differential braking.

Sec 4. Normal Procedures

AFTER LANDING

AFTER LANDING CHECKS

When clear of the runway, carry out the following checks;

1. *Air Brake - IN.*
2. *Flaps - UP.*
3. *Probes Anti-Ice - OFF.*
4. *Landing Light - OFF.*
5. *Taxi Light - CHECK ON.*

SHUTDOWN CHECKS

Proceed as follows to shutdown the engine.

1. *Parking Brake - ON.*
2. *Avionics - OFF.*
3. *Engine Cutoff paddle - PUSH to shut down engine.*

When the engine has completely shut down;

4. *Canopy Lever - PULL to open canopy.*
5. *Lights - ALL OFF.*
6. *Trim Aid Device - OFF.*
7. *Bleed Air Inflow - OFF.*
8. *Oxygen Supply - OFF.*
9. *PMU - OFF.*
10. *Master Generator - OFF.*
11. *Auxiliary Battery - OFF.*
12. *Battery - OFF.*
13. *Gust Lock - ON.*
14. *Crew - Disembark as required (Adjust Payload Section.)*

POST FLIGHT CHECKLIST

1. *Exterior Checklist - OPEN (Shift+1 by default, Shift+2 if 2D panel is applied.)*
2. *Wheel Chocks - IN POSITION (Check Box.)*
4. *Intake Covers - IN POSITION (Check Box.)*
5. *Prop Tie - IN POSITION (Check Box.)*
6. *Canopy Cover - IN POSITION (Check Box.)*

Sec 5. Operating Limitations

Please note that this image below represents the real world T-6/A circa 2004, and as such is for simulation reference purposes only and may not reflect accurate details within the simulation.

II. OPERATING LIMITATIONS

ENGINE

Oil pressure - Normal: **90** to **120** PSI
Aerobatics/Spins: **40** to **130** PSI
Aero/Spins (IDLE): **15** to **40** PSI (**5** sec)

Oil Temp - Normal: **10** to **105°C**
Transient: **106** to **110°C** (**10** minutes)

Maximum Torque - Steady: **100%**
Transient: **131%** (**20** seconds)

Maximum ITT - IDLE: **750°C**
Steady: **820°C** (>**810°C** requires MX)
Transient: **870°C** (up to **20** seconds)

Maximum N_P - Steady: **100%** (**100±2%** PMU OFF)

N_1 - IDLE: **60%** (**67%** PMU OFF)
Maximum: **104%**

On a hot day, ITT can exceed **820°C** by rapid PCL movement with the PMU OFF during the Overspeed Governor Check.

Torque should not exceed **102%** during maneuvering and/or touch and go takeoffs.

Avoid stabilized ground operation from **62** to **80%** N_P.

PROHIBITED MANEUVERS

1. **Inverted** stalls
2. **Inverted** spins
3. **Power-on** spins
4. Aggravated **spins past two turns**
5. Spins with the **landing gear, flaps or speed brake** extended
6. Spins with the **PMU OFF**
7. Spins below **10,000 feet** pressure altitude.
8. Spins above **22,000 feet** pressure altitude.
9. Abrupt **cross-controlled (snap)** maneuvers.
10. Aerobatic maneuvers, spins or stalls with greater than **50 pounds** fuel imbalance
11. **Tail slides**

STARTING

Starter limit: **20 sec**
Wait **30 sec**, **2 min**, **5 min**, **30 min** after each start attempt
Maximum Oil pressure: **200 PSI**
Minimum Oil temp: **-40°C**
Maximum ITT: **1000°C** for **5 sec** (don't attempt restart)
Minimum Battery Voltage: **23.5V**

PRESSURIZATION

Normal above 18000' MSL: **3.6±0.1 PSI**
Overpressurization valve opens: **4.0 PSI**

FUEL

Normal recovery fuel: **200** pounds
Minimum fuel: **150** pounds (**200** pounds solo)
Emergency fuel: **100** pounds (**100** pounds solo)
Minimum fuel for Aerobatics: **150** pounds per side

RUNWAY

Minimum runway - Length: **4000** feet
Width: **75** feet

WINDS

Max crosswinds - Dry runway: **25 knots**
Wet runway: **10 knots**
Icy runway: **5 knots**
Touch and Go: **20 knots**
Formation takeoff/landing: **15 knots**
Max tailwind component for takeoff: **10 knots**
Max wind with canopy open: **40 knots**

ICING

Max icing band/icing type: **5000' / light rime**

INTENTIONAL SPIN ENTRY

Minimum altitude for entry: **13,500' MSL**
Minimum cloud clearance: **7000'** above clouds

ACCELERATION LIMITATIONS

Symmetric	Clean	**-3.5**	to	**+7.0**	Gs
Symmetric	Gear/Flaps	**0**	to	**+2.5**	Gs
Asymmetric	Clean	**-1.0**	to	**+4.7**	Gs
Asymmetric	Gear/Flaps	**0**	to	**+2.0**	Gs

AIRSPEED LIMITATIONS

Max Airspeed Gear and/or Flaps: **150 KIAS**
Max Operating Speed: **316** KIAS or **.67** Mach

SERVICING

Service oil to **MAX HOT** within **30** minutes of shutdown

Sec 6. Systems Simulation

SYSTEMS SIMULATION

The following is some details of systems simulated in the IRIS Pro Series T-6/A Texan II. Please note that some of these systems may not be completely accurate and are included for your entertainment purposes.

Realistic Engine (Advanced Product ONLY)

By running the engine in the T-6/A Texan II to hard, you run the risk of damaging it and in some circumstances resulting in an engine fire.

The following are the conditions relating to engine damage and engine fire.

If the engine torque exceeds 95% for greater than 180 seconds, the engine will become damaged. This is indicated by a drop in max torque and the CHIP light illuminating on the CWS display.

If the CHIP light is illuminated, you are recommended to NOT exceed 60% torque. If you exceed 60% torque for greater than 90 seconds with the CHIP light illuminated, the engine will fail and the engine will catch fire.

In the event of an engine fire, turn the firewall cutoff handle immediately to extinguish the fire and prevent further structural damage.

Perishable Crew (Advanced Product ONLY)

The crew in the T-6/A Texan II can become incapacitated under certain conditions. These conditions vary, but are normally figured out with a bit of common sense. For example, if you open the canopy mid flight, or leave the engine on fire for to long, you'll find the crew become incapacitated and the aircraft will loose control.

Both the above functions can be toggled on or off from the popup menu (Shift+1)

Changing Aircraft

NOTE: Changing, or reloading aircraft will result in ALL cockpit settings returning to default positions.

Sec 6. Systems Simulation

SYSTEMS SIMULATION

The following is some details of systems simulated in the IRIS Pro Series T-6/A Texan II. Please note that some of these systems may not be completely accurate and are included for your entertainment purposes.

Ejection (Advanced Product ONLY)

If you pull the ejection handle mid flight, the crew and canopy will disappear and you will lose all control of your aircraft.

Gust Lock

If the Gust Lock handle is engaged, no control surface movement will be possible for the ailerons or elevators. This applies to being in-flight or on the ground.

Oxygen Controller (Advanced Product ONLY)

When the OBOGS system is turned on (indicated by visual display of the crew oxygen masks) and the Emergency Oxygen switch is set to NORMAL, an audible mask breathing sound will occur at greater than 2G. If the OBOGS system is turned ON and the Emergency Oxygen switch is turned to TEST MASK, the audible breathing sound will be on permanently.

Spoiler Limiter

The T-6/A Texan II Spoiler will NOT operate, or if extended, will retract if the PCL is advanced to full or the flaps are lowered.

Autopilot (Advanced Product ONLY)

In the rear seat of the aircraft on the right hand console is a basic Autopilot System under the heading AFCS (Automatic Flight Control System).

The AFCS features three switches, and they are as follows;

- ***AFCS Master Switch*** *- Turns the AFCS system on or off. This MUST be turned on BEFORE any of the sub-mode switches below are engaged.*

- ***Heading Hold*** *- Aircraft holds the current heading as set by the EHSI heading bug.*
- ***Altitude Hold*** *- Aircraft holds the current aircraft altitude. To alter altitude, disengage the switch, climb or descend and re-engage the switch.*
- ***NAV Hold*** *- Aircraft tracks to the current tuned VOR or GPS Flight plan waypoint based on the selected NAV mode.*

Sec 6. Systems Simulation

SYSTEMS SIMULATION

The following is some details of systems simulated in the IRIS Pro Series T-6/A Texan II. Please note that some of these systems may not be completely accurate and are included for your entertainment purposes.

Trim Aid Device

The Trim Aid Device will automatically adjust rudder trim to keep coordinated flight in turns and to assist in countering engine torque on takeoff.

This function is limited based on the amount of bank being experienced by the aircraft and the amount of torque applied from the engine.

Trim Disconnect

This function will override all users trim input and center all trim-tabs to their neutral position.

Sound issues under Windows Vista

Due to the way Vista handles sound files in FSX, some users may notice irregularities when switching views or spooling up the engines. If you are experiencing issues such as sound files overlapping or playing when they're not supposed to, please contact us on our forums and let us know the following information so that we can look further into fixing these issues;

- *Platform being used, ie, Vista 32 bit, or Vista 64 bit*
- *Version of FSX being used, ie RTM, SP1, SP2 or SP2/Acceleration*
- *System memory*
- *Hard drive capacity and space*

With your assistance we may be able to find a solution to these and other sound related problems in FSX with Vista.

Shared Cockpit

Due to conflicting gauge issues, if you are planning on flying the T-6/A Texan II in a shared cockpit environment through multiplayer, BOTH pilots MUST use the Multiplayer variant of the T-6/A Texan II from their aircraft selection list.

If you use ANY other T-6/A Texan II variation from the selection list, you will encounter significant lag and performance issues.

Credits

David Brice.....Project Management, Aircraft Design
Panel and Gauge Artwork & Coding
Systems Simulation
Documentation
David Brice, Andy Nott & Matt Wynn.....Aircraft Artwork
Chris Petersen, Turbine Sound Studios.....Aircraft Sounds
Pam Brooker, David Brice.....Flight Dynamics

IRIS Beta Test Team
Chris Halpin, Chris Sykes, Pam Brooker, Conrad Adolf, Bill Mackay Andrew Nott, John Miguez, Matt Wynn, Paul Frimston, Scott Hash, Jeremy Brown, Anthony Douglas & Nick Degnan

For further support, please visit and register to our forums at www.irissimulations.com.

David "Phoenix" Brice
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IRIS Flight Simulation Software

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