PC-6 PORTER
USER GUIDE

MILVIZ

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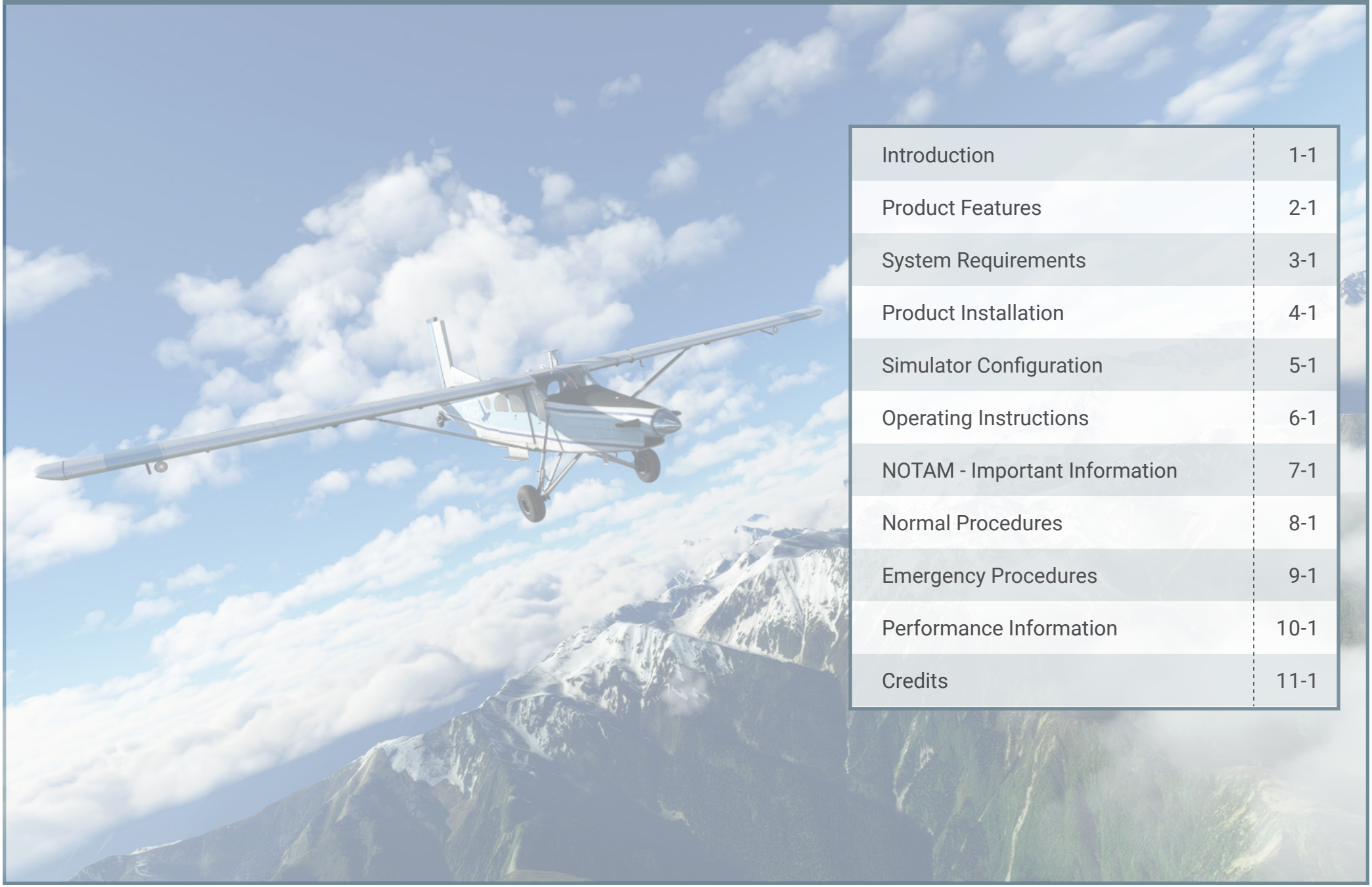


Introduction

Welcome!

We are very excited to introduce you to the MilViz PC-6 Porter. An extremely exciting aircraft to fly, it's safe to say that if the Porter doesn't scratch your cravings for a capable, high performance, STOL turboprop, nothing will!

This User Guide is designed to help you get started with your new Porter. It contains useful information about the equipment, operating procedures, and performance of the PC-6, as well as instructions for installation and updating.
We recommend that you take a bit of time to read through this guide and to refer to it as needed.

Our interest in your flying pleasure has not ceased with your purchase of the MilViz PC-6 Porter. Worldwide, the Military Visualizations staff stands ready to assist and serve. For technical support, please post a request on our PC-6 Porter support forum. Our dedicated and talented staff is ready to help you.

For forum access please email info@milviz.com with your proof of purchase and your preferred or existing forum username.

A brief introduction to the Porter

The PC-6 Porter, with its boxy vertical stabilizer, long, pointed nose, high wings and rugged landing gear, may not win any awards for the most elegant aircraft to grace the skies, but its capabilities are the stuff of legend.

A true STOL (Short Takeoff and Landing) aircraft, the Porter needs just under 1000 feet of runway to become airborne at max weight (with much, much less space needed when lighter), and nearly half that when landing fully loaded. When landing with minimal weight, the ground roll is astoundingly short.

Landing and takeoffs is just part of the story, however. The capability of the Porter to enter beta mode for an impossibly steep controlled descent has made for many a heart-stopping video by skydivers whose aircraft beats them to the ground.

The PC-6 Porter took form in the late 1950's, with the initial designs incorporating a piston engine. From 1961, a turboprop equipped version of the aircraft was available, utilizing the Turbomeca Astazou II. In the years following, the Astazou was replaced by the Garrett TPE331, and later the venerable PT-6A.

The rugged workhorse design, along with its superlative STOL capabilities, enables the PC-6 to operate from some of the roughest, shortest, and highest airstrips in the world.

One of the most famous examples (and just one of a number of world records set by the PC-6) was a glacier landing on Dhaulagiri in Nepal in the spring of 1960. Swiss pilot Emil Wick proceeded to make regular landings at 5700 m (18,700 ft) supplying an ultimately successful summit expedition. After many supply flights over a period of some weeks, the aircraft crashed on takeoff due to a broken grip on the control column. The pilots were uninjured, but the aircraft remains on the mountain to this day.

The Porter has, over the years, seen extensive use by a wide range of operators both civil and military. It would be remiss not to mention its infamous use by the CIA-controlled airline Air America, but it would be just as glaring not to mention its long military service to a large but diverse assortment of countries ranging from Austria to Australia.

In civil use, it's estimated that over half of the remaining Porters (which are many!) are in use with skydiving operators, where the mix of power and STOL capability is a prized combination.

2019, however, marks the final year for the production of the rugged Porter. Slowing sales over the last decade means that the final airframe will roll off the assembly line, representing 60 years of production and nearly 600 aircraft.

Which in turn means that we hope we've done this aircraft proud once again in our release of the PC-6 for Microsoft Flight Simulator 2020.

Our version emulates a late model PC-6/B2-H4, equipped with a de-rated PT-6A-27. For this initial release in Microsoft Flight Simulator, we're taking the step of outfitting the 'office' with the G1000 that ships with the simulator.

This release includes some unique features, including functional trap doors as well as a stand-out dynamic cargo system. It also replicates the well-known beta descent capability, as well as features such as a working hot start simulation.

And of course, building on our experience with simulating low and slow flight with the numerous STOL and bush aircraft that we've developed over the years for multiple simulators, we've paid full attention to recreating the unique handling characteristics of the Porter.

All of this put together makes for a compelling simulation of a much adored and highly capable turboprop. We sincerely hope that our aircraft gives you many hours of flying pleasure!

Overview of the PT6A-27

The PT6A family of engines includes three series of models with increasing power levels, referred to as PT6A 'Small', 'Medium' and 'Large.' The increased power levels are achieved through the increase of compressor air flow and an increased number of power turbine stages.

The PT6A-27 is within the 'Small' series, and as installed in the PT-6, develops a maximum permissible power rating of 550 SHP (shaft horsepower) at sea level up to 43°C ambient temperature.

The engine has a three-stage axial, single stage centrifugal compressor driven by a single-stage reaction turbine. Another single-stage reaction turbine, counter-rotating with the first, drives the output shaft. Fuel is sprayed into the annular combustion chamber by fourteen individually removable fuel nozzles mounted around the gas generator case.

An ignition unit and two igniter plugs are used to start combustion. A hydropneumatic fuel control schedules fuel flow to maintain the power set by the power lever.

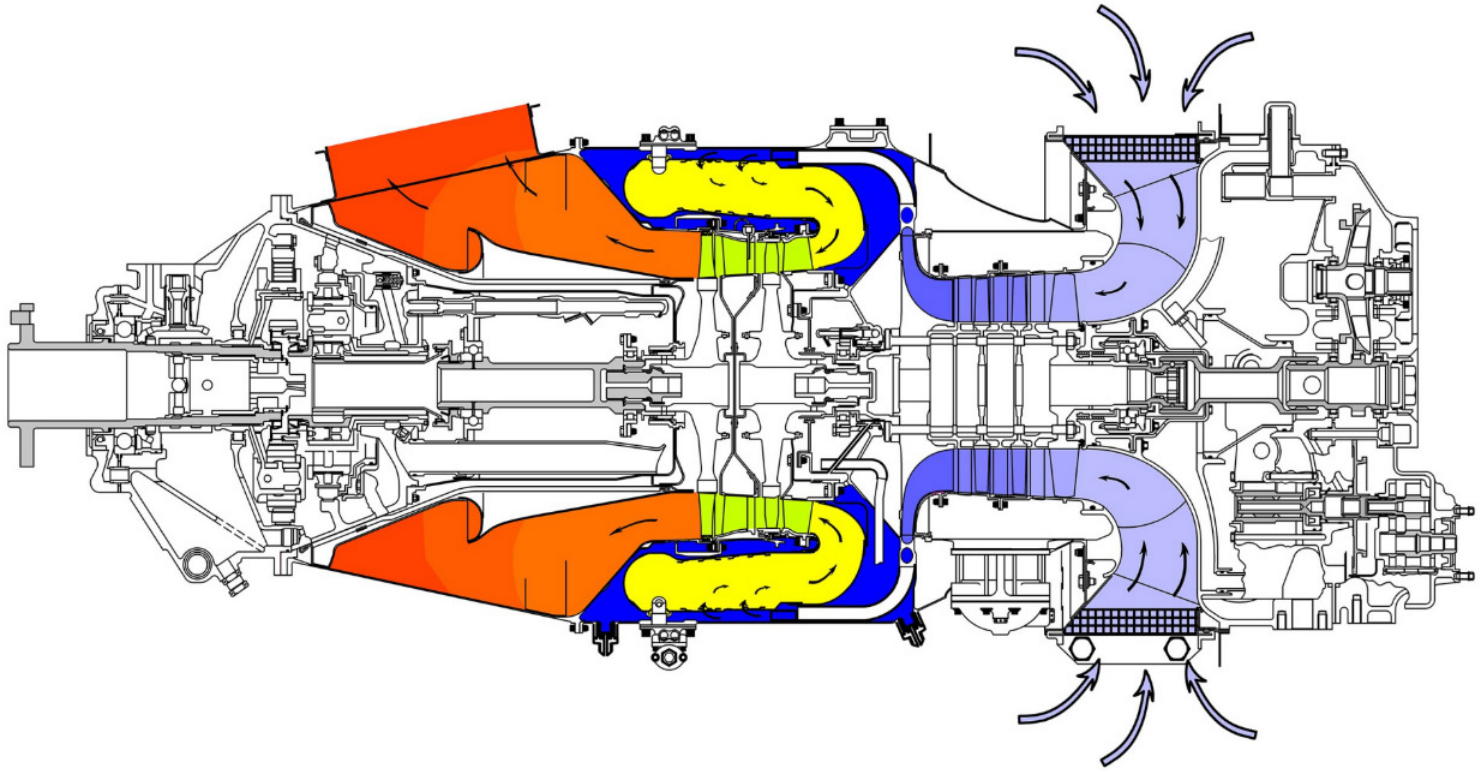
Immediately following touchdown, partial or full reverse thrust may be obtained by lifting and retarding the power lever aft of the detent. Reverse thrust can be varied by moving the power lever to any position aft of the lift detent.

BETA MODE operation of the propeller is used in flight to effect fast deceleration and high rates of descent. In the beta range, the propeller blades are set at a low positive pitch angle to provide a braking effect for steep controlled descents. When operating in the beta mode, the propeller pitch angle is controlled by power lever movement between the lift detent and the point where constant speed operation becomes effective.

Either full or partial reverse thrust is obtained by lifting and moving the power lever to any position aft of the lift detent. The PROP LOW P (propeller low pitch) caption will illuminate. With full reverse thrust a small amount of torque, biased to the left, may be noticeable.

Reverse thrust is for ground operation only and must not be used in flight. In the unlikely event of the propeller moving to reverse pitch in flight, a sudden increase in drag, accompanied by buffeting and the PROP LOW P warning caption in the annunciator panel will illuminate. If corrective action (an advance of the power lever) fails to rectify the reverse pitch condition, the propeller should be feathered.

An important characteristic of the PT6A-27 engine is the physical disconnect between the gas generator and power generator turbines. The power turbine (and by extension the propeller) can spin freely from the gas generator section. This is why the PT6A-27 is referred to as a ***free turbine***.



(above) Diagram of a PT6A turbine engine, depicting air movement through the engine. Note the intake of air to the rear and the exhaust at the front.

Product Features

- High resolution interior and exterior model, with high quality PBR (Physically Based Rendering) materials used for realistic effects and reflections.
- Detailed animations throughout the aircraft, including cabin and cockpit doors, storm window, trap doors, windshield blinds, instrumentation, and more.
- External interactive details such as chocks, tie downs, and covers lend a sense of purpose and immersion to your start-up and shutdown experiences.
- Skis can be outfitted on the PC-6 to allow for exciting adventures off of the beaten path! (Feature included on standard-wheels version)
- Additional version of the PC-6 equipped with tundra tires.
- Functional trap doors complete with the visual effect of droppable cargo.
- Configurable external fuel tanks with properly emulated fuel pump behavior and annunciations.
- Dynamic and fully adjustable cockpit and cabin lighting for atmospheric night flying.
- Professionally recorded sound set from a real world PC-6 specifically for this release so as to provide the utmost in immersion.
- Fully supports MSFS visual icing effects. The PC-6 is not rated for flight into known icing conditions, so be cautious!
- Two distinct cabin configurations for hauling either passengers or cargo.
- Highly detailed tablet is present in the aircraft to allow for in-depth configuration of your flight, including randomized passenger loads and a dynamic cargo system which adjusts the loaded weight and visual appearance in an intuitive manner, as well as the ability to adjust internal and external fuel from the same interface.
- Authentic Sound Environment featuring professionally created sounds matched to the aircraft and an immersive interior soundscape.
- Fully interactive checklist based on proper standard procedures for the PC-6. Includes custom camera behavior for 'walkaround' interactivity with external aircraft elements!
- Accurate flight behavior, including realistic stall modelling and beta simulation. Beta mode can be entered into under correctly controlled circumstances while in flight to allow for heart stopping dives while staying within the allowable range for flaps extension.
- Correctly replicated turboprop start up requirements have been implemented, allowing for varying ITT temperatures, up to and including catastrophic hot starts!
- Engine over-torque simulation with resulting engine failures due to over-torquing require proper power management and awareness.
- Engine behavior has been tuned and tested within the limitations of the default turboprop simulation to allow for a believable and approachable emulation of the well known PT6A-27.
- Custom skydiving altimeter included in the passenger configuration which is able to be zeroed to field elevation.
- Equipped with default avionics (G1000, KAP140, KR87 ADF) to allow for a wide range of functionality while providing a path for future simulation capabilities.
- Full support for the G1000 NXi by Working Title, which features enhanced compatibility for the KAP140 autopilot.
- 10 highly detailed liveries based on real world aircraft, along with a downloadable paint kit for creating your own!

System Requirements

The following requirements apply as a general minimum to successfully install, configure and operate the MilViz PC-6 Porter.

Please note that your choice of scenery, location, simulator settings and 3rd party utilities may place additional demands on your simulation platform and may affect your simulator experience.

Supported Platforms:	Microsoft Flight Simulator 2020
Supported Operating Systems:	Windows 10
Processor (CPU):	Intel i5-4460 / AMD Ryzen 3 (minimum) Intel i7-7700 / AMD Ryzen 5 (recommended)
Video Card (GPU):	GTX 1060 Ti / Radeon RX 570 (minimum) RTX 3060 / AMD Radeon Rx 590 (recommended)
System Memory (RAM):	16 GB RAM
Hard Drive Space:	5.75 GB (or greater) free hard drive space.
Gaming Controller:	Joystick, yoke, or other gaming controller (a means of controlling the aircraft rudder, either with twist joy-stick function or dedicated pedals, is additionally recommended). (Note: All MilViz products require a minimum of one functioning gaming device such as a joystick for proper operation and control.)
Internet Connection:	Please note that an active internet connection is required for activation AND operation of this product. It will NOT function without an internet connection!

Product Installation

Pre-Installation Tasks

As with other flight simulator add-ons, pre-installation precautions should involve closing any open applications, as well as temporarily disabling any active antivirus software.

Failure to temporarily disable antivirus software when installing may result in a non-functioning product and/or simulator!!!

Beginning Installation

After purchase, this product is supplied as a compressed (.zip) file. This compressed file contains an executable (.exe) file, which is the installer for the MilViz PC-6 Porter.

Using the Windows File Explorer or file compression utility of your choice, unzip this file to a location of your choosing.

Once unzipped, you may begin installation by right clicking on the executable (.exe) file, then selecting "Run as administrator".

EULA

The End User License Agreement should be read in it's entirety and is required to be agreed to prior to installation of the product.

Customer Information

It should be noted that the product key you were given is registered to the email address you used when purchasing the product, requiring the entry of that same email address in the 'User Name' textbox.

The 'Serial Number' is where you would enter the product key you were given at time of purchase, complete with dashes.

Features to install

There are two options available: Automatic Install, and Manual Install. We recommend using the Automatic Install option.

The Manual install option is provided for the rare case where the installer is unable to find your Community folder. with the manual install option, the installer will extract the milviz-aircraft-pc6 folder to your desktop, allowing you to place it inside the Community folder yourself.

Note: This version of the PC-6 Porter is intended to be installed inside the Community folder. Although possible, both the Automatic and the Manual options should not be selected at the same time.

Post-Installation Tasks

Please be sure to revert your antivirus program settings back to their previous state.

It may be worthwhile to back-up or save a copy of the downloaded installer. Please be aware that as new updates are released over time, we do not continue to offer older versions for download due to support issues. Please also note that support is intended for the latest releases of our products only.

Important Note:

Products purchased on our website do NOT register as a purchase on the Microsoft Marketplace within the simulator

The license granted by Milviz for your purchase on our website does not extend to any similar or identical product offered for sale directly through Microsoft, nor does any product purchased from the MS Marketplace entitle you to a license for the similar or identical product offered for sale by Milviz.

This item may not be able to be installed at the same time as the Marketplace version of this product. To install this item, you should first uninstall the version purchased on the Marketplace.

Uninstalling

The MilViz PC-6 Porter for Microsoft Flight Simulator 2020 must be uninstalled through the use of the Programs and Features window within the Windows operating system.

The Milviz WASM Helper is a separate item in the software list that may be uninstalled separately. Please be aware that this service may be utilized by other Milviz products for MSFS 2020; uninstalling this service should only be done under advisement or if no other Milviz products are owned.

Note: *Prior to uninstalling the aircraft, please be sure to back up any customized files or custom liveries you have installed if you wish to keep them.*

Updating

The PC-6 Porter for MSFS 2020 is updated by uninstalling the previous version of the product and re-installing the newly provided version.

You will receive notices of new updates via the email used to purchase the product.

Product Support

We are deeply committed to the satisfaction of our customers. If you encounter any issues with your product or require assistance, or just have a general question, we encourage you to visit our forums at http://milviz.com/forum/.

We also would invite you to join our Discord server for news and discussion at https://discord.milviz.com/.

Support forums for our individual products are restricted to owners of that product. To register for a specific support forum, please contact info@milviz.com for registration information and details. Please note that proof of purchase will be required.

Simulator Configuration

All MilViz aircraft are developed with an overall goal of replicating a realistic level of accuracy in regards to operation and flight response. To this end, development and testing are generally carried out using the highest realism settings available within the simulator.

Overall, the realism settings within MSFS exist in order to make certain aspects of simulated flying less of a burden if viewed as such by a user, as well as to remove some of the tasks which are necessary in real life to ensure a safe and proper flight. Our intent is not to discourage such use, but only to ensure that the user has the means to enjoy the aircraft to the level at which it was designed.

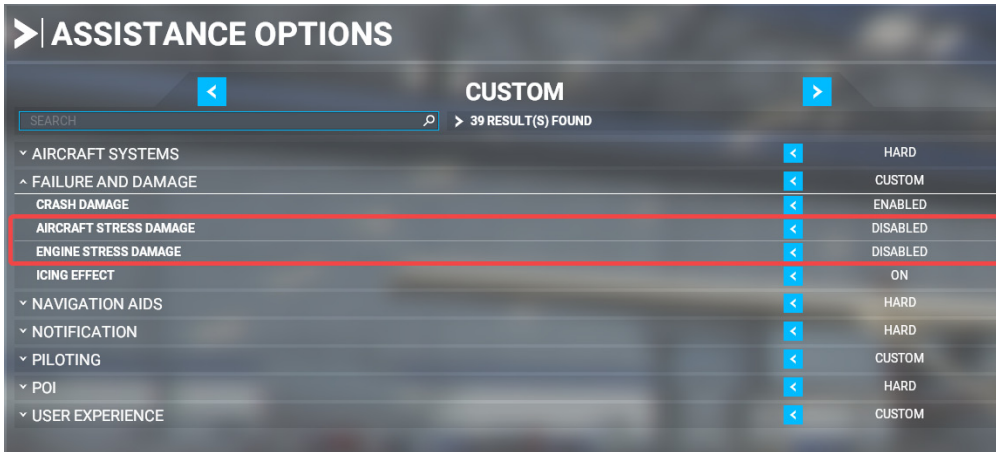
Flight Model

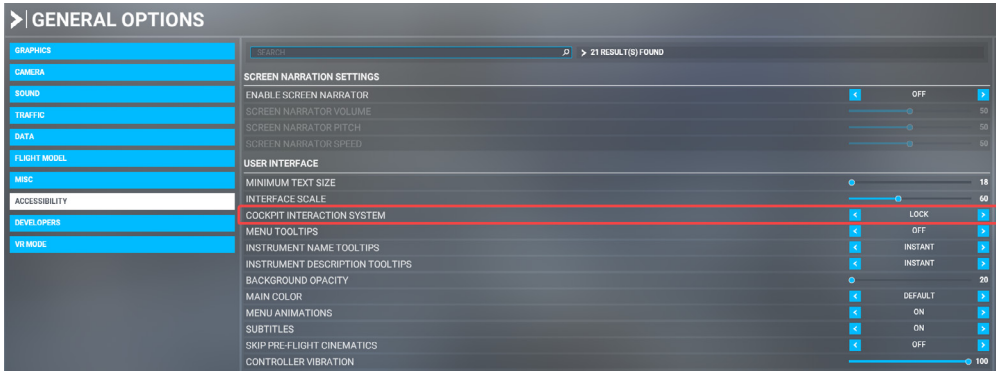
For correct operation, please ensure that the Modern flight model is use, not the Legacy flight model. This selection can be found in the 'General Options/Flight Model' section.

Assistance Options

As noted above, a lot of realism options exist in order to make life 'easier' in the simulator. For the most part, to ensure the aircraft is enjoyed in the intended manner, the majority of the options given should be set to 'HARD', with the following exceptions:

Under the 'Failure and Damage' section, please ensure that the two options titled





'Aircraft Stress Damage' and Engine Stress Damage' are set to DISABLED. This is required to be able to operate the trap doors and the storm window in flight.

Lock Interactions

The mouse interactions in the Porter require the Cockpit Interaction System to be set to 'LOCK'. This aircraft is optimized for this style of interaction system; using the 'LEGACY' system will result in certain controls to not be able to be interacted with as intended. In addition, when the legacy system is in use, not all intended feedback is displayed for the user.

Checklist

The MilViz PC-6 Porter features a fully interactive, complete checklist for all normal procedures. While the checklist menu itself is accessed during flight via the in-flight UI menu bar, the options to provide checklist evaluation and help are now found in the 'Assisted Options' window, under 'Assisted Checklist'. For the full checklist experience, we recommend setting this option to ON.

Operating Instructions - Tablet

The Milviz PC-6 Porter features a highly detailed 3D tablet inside the aircraft complete with a custom EFB (Electronic Flight Bag) application to allow for easy configuration and loadout options.

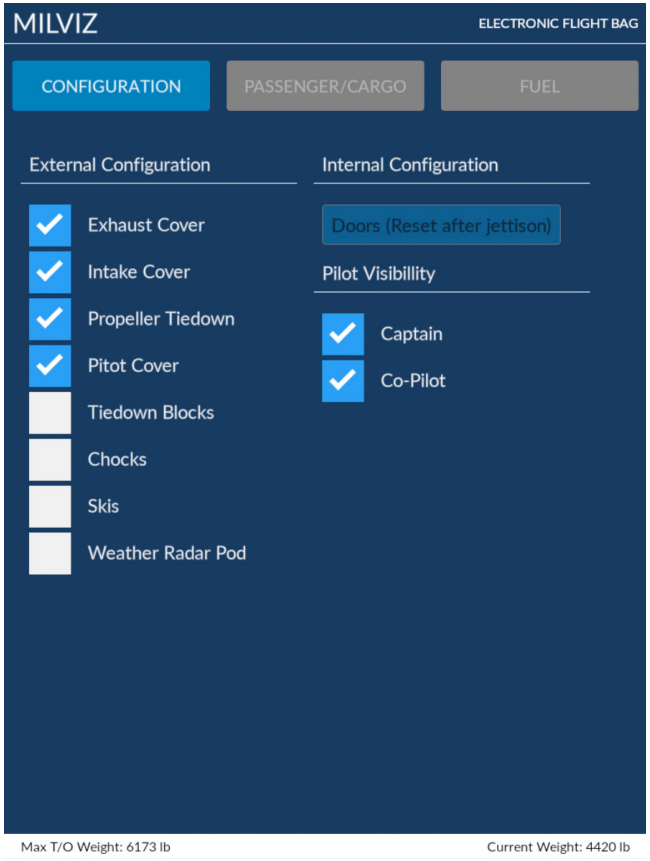
In its stowed position, it sits on the far right hand side of the shelf, in front of the copilot.

To use the tablet, click on the round button on the lower front, below the screen. This will raise the tablet up into a comfortable viewing position and will also turn on the screen.

To stop using the tablet, simply click the round button again, in order to turn off the screen and return it to the stowed position.

The functions in the tablet are logically divided into multiple pages, which are selected by clicking the buttons at the top of the screen. For the Porter, the pages are 'Configuration', 'Passenger/Cargo', and 'Fuel'.

Please note that at this time, choices or selections made in the tablet do not persist between flights.



In the 'Configuration' tab, various external visual elements can be toggled between a hidden or shown state. Note that some options only exist for specific versions of the Porter in use.

The button labelled 'Doors (Reset after jettison)' is used to replace either front door after they have been jettisoned from the aircraft. It will only be active if either door has already been jettisoned; otherwise it is inactive.

The section labelled 'Pilot Visibility' provides the abil-

Operating Instructions - Tablet

ity for the 3D pilot or copilot models to be hidden. This option is only for visibility purposes and does not affect weight. It's important to note that if you set the weight of either station to zero, that will also hide the respective 3D model.

The 'Passenger/Cargo' tab allows switching the configuration of the internal layout for hauling cargo or people.

By default, the 'Passengers?' checkbox is not selected, and a slider allows dynamic adjustment of the visual appearance and loaded cargo weight, with images denoting the type and amount of cargo loaded being displayed in the lower portion of the screen.
The green range in the slider denotes a cargo item that instead of being loaded normally, is placed on top of the trap doors. Using the trap door controls located directly under the throttle quadrant, this cargo is visually 'dropped' when the trap doors are opened. The 'drop' is a visual effect only; weight of the aircraft is not affected.

Selecting the 'Passengers?' checkbox will switch the loadout page to one which will allow the selection of passengers. Passenger selection affects overall loaded weight only; visual models of passengers are not displayed at this time. Weights for the passengers are randomized; each time you re-select a checkbox, a different weight will appear.

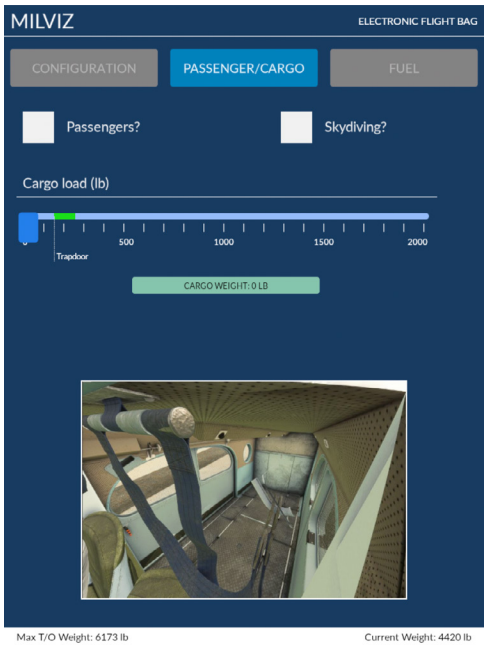
Selecting the 'Skydiving?' checkbox will show the Altimaster skydiving altimeter on the right side of the instrument panel, as well as hiding the first two rows of passenger seats.

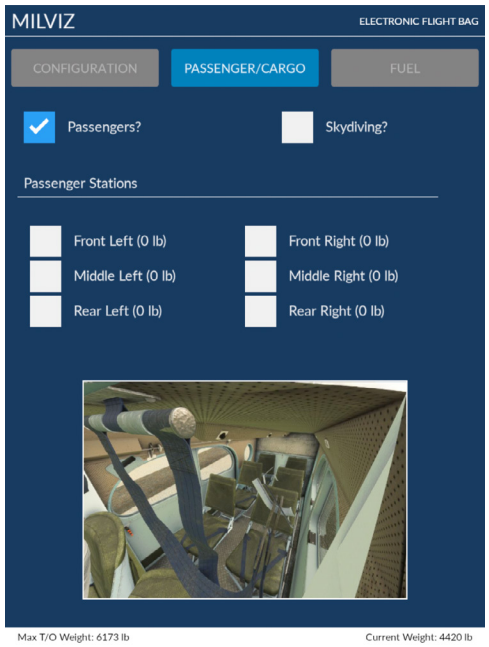
Please note that the proper aircraft weight shows on the tablet screen only; there is currently a bug in MSFS that prevents externally added weight from showing correctly in the UI weight and balance panel.

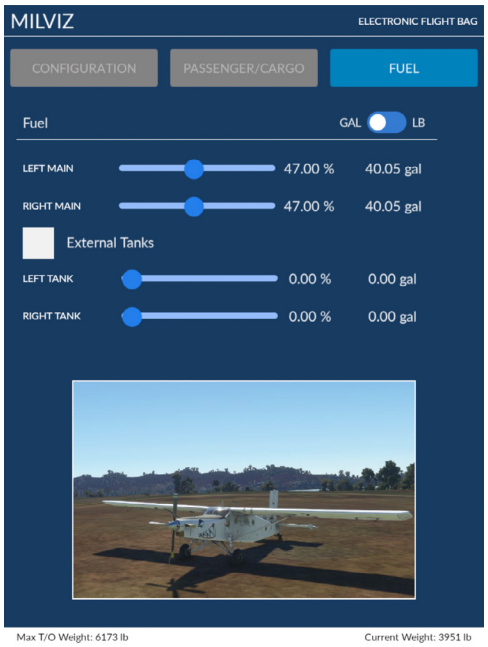
The 'Fuel' tab allows for easy adjustment of the fuel level in the left and right main tanks.

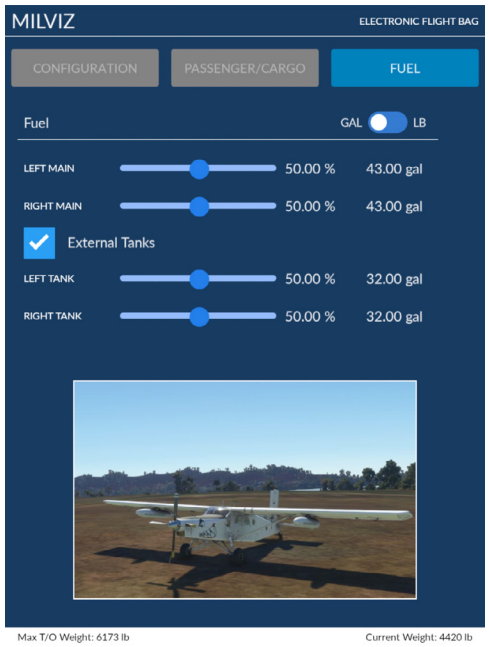
By using the 'External Tanks' checkbox, the left and right external tanks can be quickly shown or removed. The fuel may adjusted in the two external tanks by manipulating their sliders. Note that removing all fuel, or adding any fuel, will hide or show the external tanks without the requirement of using the checkbox.

It's highly recommended that fuel is loaded evenly between the left and right sides of the aircraft!









Operating Instructions - Dropping Cargo

One of the interactive features included in the Porter is the ability to 'drop' cargo from the included trap doors.

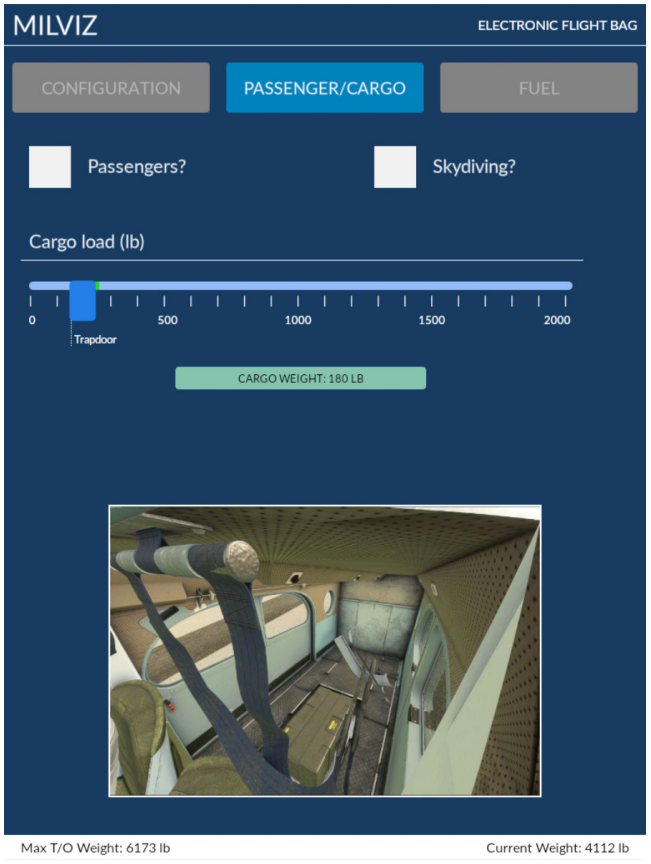
The PC-6 Porter features a set of trap doors located in the center of the rear cabin, which is normally covered by a floor panel. When in use, the floor panel is removed and the item(s) to be dropped are loaded directly on the trap doors. When the drop handle is pulled, the doors open, releasing the cargo.

Historically, both free fall and parachute drops were employed by the Porter in resupply missions, but we have only simulated a free fall cargo drop in our aircraft.

To load the specific cargo item that is able to be dropped, position the slider in the 'Passenger/Cargo' tab to either 180 or 190 lbs. This is roughly denoted by the green marking. The image will switch to the display of a hard case item sitting directly on the cargo doors.

To drop the loaded item, simply pull the trapdoor release handle located on the same panel as the flaps switch and rudder trim switch. Closing the doors is accomplished by pushing the handle back in.

Once dropped and the trapdoors closed, the drop item can be reloaded for another drop by utilizing a clickspot on the floor in front of the trapdoor area.



Please note that the weight of the dropped item is not dynamically removed from the aircraft weight when dropped.

This allows for easy reloads without having to bring up the tablet and set the weight manually each time.

Operating Instructions - Jettisoning Doors

The ability of the doors to be jettisoned has also been included in our simulation of the PC-6 Porter.

In the real aircraft, this is not meant to be done in flight outside of an emergency situation. However, the doors can also be removed prior to a flight if desired. Of course, in our simulation, the doors can be removed at anytime.

To successfully jettison or remove a door, follow these steps:

1) Pull down on the red lever to disengage the hinge pin on the outside of the aircraft.

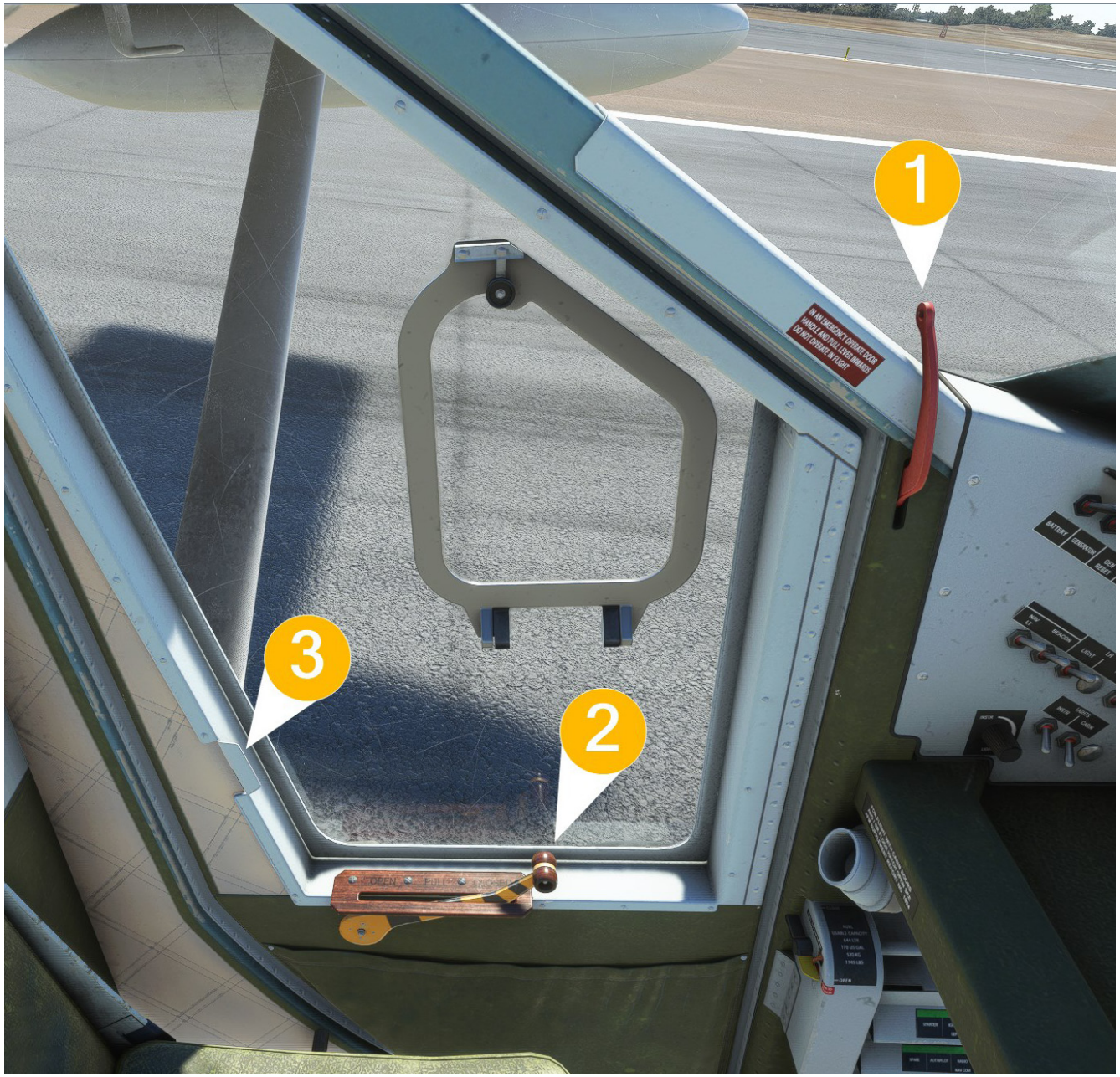
2) Move the door latch lever aft to the 'Open' position.

3) Push on the door using the push / pull handle on the door frame.

These steps may be repeated for the right hand door.

To bring the doors back once jettisoned or removed, there is a button on the 'Configuration' page of the tablet that will be active once one or both doors are removed. Clicking this button will replace the door.

Note that when the tablet is used to return the doors, they will still need to be fully closed by pulling on the push / pull handle and moving the door latch lever forward to the 'Closed' position.



Operating Instructions - Propeller Beta

One of the iconic abilities of the PC-6 Porter is that the pilot is able to put the propeller into beta while in flight.

This capability is often used (and captured in astounding imagery) during skydiving operations in order to allow the aircraft to return to the airfield in an extremely quick manner and pick up the next load of waiting skydivers. It can also be used by operators to 'drop' into extremely short airfields in challenging terrain.

While we don't intend to get into an in-depth explanation of exactly how it works, it's easy enough to sum up by saying that the propeller essentially becomes a big air brake, allowing the aircraft to make a steep controlled descent without a dangerous accumulation of airspeed. (I would recommend this video for an actual in-flight demonstration and explanation: https://www.youtube.com/watch?v=hzTMgkyPJLQ).

Entering into beta mode while in flight in the simulator does not require quite the same degree of attention as it does in real life, but it also isn't as simple as 'pull back the throttle and pitch down'. While staying within the default turboprop simulation, we've attempted to recreate a realistic set of circumstances for the beta effect to kick in.

Most importantly, airspeed is critical, as is the commanded RPM through the propeller control lever. At full commanded RPM, the aircraft needs to be below 100 knots indicated air speed for the beta effect to kick in. As the commanded RPM lowers, the entry speed for the beta effect also lowers. At 1800 RPM, you'll find that the entry speed drops to almost 80 knots! Typical operation of the Porter is at a full commanded 2000 RPM, but this is worth noting.

To enter into beta, pull back the power control lever while remaining in level flight. Keep your nose level until your airspeed drops well below entry speed - let it kick in and slow your aircraft even more. Once at a slow speed, before you begin to reach a stall, let the nose drop in a controlled manner.

Next, the pitch of the aircraft also matters. Despite what the wide-angle lens in use in many skydiving videos would suggest, the nose-down aspect of the aircraft isn't actually as extreme as it looks. It's up to the pilot to manage the rate of descent. Pointing the nose straight down will definitely result in an over-accumulation of airspeed! In a flapless beta descent, you should be able to maintain approximately 4000 feet per minute while remaining below 100 knots, while the pitch of the aircraft will rarely exceed 20 degrees nose-down.

You will typically see pilots banking frequently during the beta descent. Generally, some flap extension is used to improve the maneuverability of the aircraft during the descent, so that after dropping skydivers the pilot can bank as desired to remain over the airfield / landing zone during the descent. This is another reason why airspeed is carefully managed throughout the procedure, with the airspeed remaining within the allowable range for flap use.

Pulling out of beta mode is as simple as advancing the power control lever to a suitable amount while pulling back on the control stick to raise the nose. In most circumstances, you wouldn't want to gain or lose additional airspeed while transitioning back to level flight.

We hope these tips will allow you to create some exciting experiences, and most importantly, to have fun doing so!

Operating Instructions - Failures

Even though it wasn't our intent with this aircraft to get into the area of study-level simulation, we have included a couple of interesting engine failures where we thought it may increase the level of realism and immersion.

Hot Starts

Simply explained, if fuel is ignited before the engine is moving enough air through the chamber, the temperature will quickly increase beyond the design limits of the engine, causing a failure.

The ability to hot start the PT6A in our Porter has been emulated; introducing fuel prior to engaging the starter and ignition will result in an extremely high spike in the ITT temperature, and a failure of the engine to start.

(There's also reports of a surprise in the sound effect chosen for an engine failure - we realize that not everyone may be fans of a specific space movie with a specific ship which has a specific failure with engaging the hyperdrive at an inopportune time, but hey, we are!)

To avoid a hot start scenario, always ensure that you are following the proper procedures for engine start. Most importantly, never introduce fuel via the condition lever until the Ng has risen above 12%.

It's worth noting that the presence of this correct start-up limitation means that the Porter is not compatible at this time with the CTRL+E method of autostarting the aircraft, as the autostart will automatically adjust the condition lever prior to turning on the starter and ignition, thereby causing the hot start to occur.

Alongside the above described hot start failure that can occur, it is possible to also cause the ITT temperatures to spike to higher then usual levels by introducing fuel too soon as the engine is spooling up. This would normally be avoided in the real aircraft as it can cause excessive engine wear.

Engine Over-torque

The PT6A-27 engine in the Porter, puts out a significant amount of horsepower, which can easily exceed various limitations of the engine and gearbox.

This means that when increasing power, care must be taken to not exceed the maximum rated torque. The engine is rated for 47.3 psi, or approximately 1445 foot pounds, of torque, with an allowable exceedance under acceleration to 53 psi, or approximately 1620 foot pounds for a maximum of 2 seconds.

This has been simulated in our aircraft, along with increasing engine failures if not followed:

After 30 seconds of over-torque: The 'Chip Detect' annunciation will light to indicate that metal particles have been detected in the oil.

After 90 seconds of over-torque: Oil pressure indications will fall and remain inconsistent.

After 240 seconds of over-torque: Catastrophic engine failure will occur at this point, causing the engine to lose all power.

Please note that these times are cumulative over the course of the flight, but are not persistent - they do will reset on your next flight or simulator reload.

Note: All failures are only cleared by reloading / restarting the flight!

Operating Instructions - G1000 Options

Default G1000 or NXi?

Although the default G1000 is fully operational, our PC-6 Porter now supports, and is supported by, the G1000 NXi under development by Working Title.

While we couldn't recommend it's use at the time of release due to compatibility issues, those problems have been resolved in the latest version of the NXi. In addition, it includes a special version of the KAP140 autopilot to ensure a high degree of compatibility and usefulness with the NXi displays.

On our side, we've updated the Porter to take advantage of the multiple EIS pages offered through the NXi configuration. These extra fuel and systems pages are not available on the default G1000.

The NXi is installed through the Marketplace section of the simulator; once installed, it will automatically show up in the Porter. Should it be desired to switch back to the default G1000, it is required to remove the NXi through the Content Manager.

Important: When installing or un-installing the NXi, it's recommended to restart the simulator before operating the Porter.

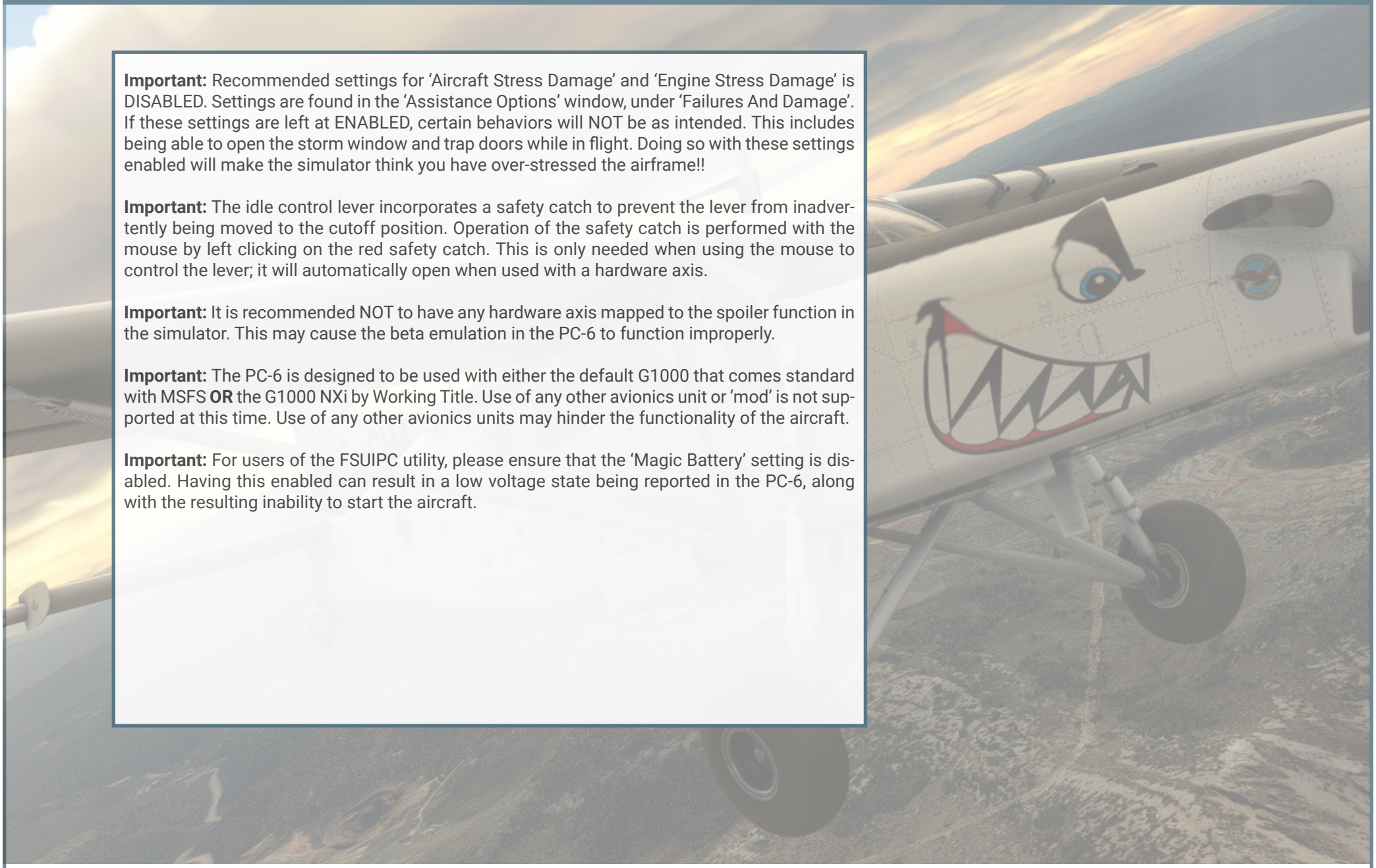
The full scope of operating the NXi is not covered here, but it is worth mentioning operation of the EIS pages, since they are tailored to each type of aircraft.

The primary page covers, in addition to the standard engine monitoring instruments, basic horizontal bar gauges that show a quick status of all primary systems, as well as a numerical view of the current fuel flow in gallons per hour.

The other pages may be selected by pressing the 'Engine' softkey at the bottom of the screen. This reveals the soft key options for the 'Lean' and 'System' pages where the more detailed information can be found. (**Please note** - the names of these pages are inaccurate for a turboprop and cannot be changed at this time as they are hard coded in the NXi. In addition, please ignore the presence of the 'CYL SLCT' and 'Assist' softkey options, as they are not applicable to the Porter.)

The 'Lean' page displays detailed electrical information, while the 'System' page displays a thorough overview of the fuel in the aircraft. The 'Fuel Calc' section may be adjusted through the softkeys 'RST Fuel' and 'GAL REM'.

Current NOTAM's - Important Information For All Pilots



Important: Recommended settings for 'Aircraft Stress Damage' and 'Engine Stress Damage' is DISABLED. Settings are found in the 'Assistance Options' window, under 'Failures And Damage'. If these settings are left at ENABLED, certain behaviors will NOT be as intended. This includes being able to open the storm window and trap doors while in flight. Doing so with these settings enabled will make the simulator think you have over-stressed the airframe!!

Important: The idle control lever incorporates a safety catch to prevent the lever from inadvertently being moved to the cutoff position. Operation of the safety catch is performed with the mouse by left clicking on the red safety catch. This is only needed when using the mouse to control the lever; it will automatically open when used with a hardware axis.

Important: It is recommended NOT to have any hardware axis mapped to the spoiler function in the simulator. This may cause the beta emulation in the PC-6 to function improperly.

Important: The PC-6 is designed to be used with either the default G1000 that comes standard with MSFS **OR** the G1000 NXi by Working Title. Use of any other avionics unit or 'mod' is not supported at this time. Use of any other avionics units may hinder the functionality of the aircraft.

Important: For users of the FSUIPC utility, please ensure that the 'Magic Battery' setting is disabled. Having this enabled can result in a low voltage state being reported in the PC-6, along with the resulting inability to start the aircraft.

Normal Procedures

PREFLIGHT INSPECTION

1. All covers and locks	REMOVE
2. Wing, Tail and Control surfaces (ref. only)	CHECK CLEAN/UNDAMAGED
3. Propeller (ref. only)	CHECK PROPELLER AND SPINNER FOR NICKS AND SECURITY, AND PROPELLER FOR OIL LEAKS
4. Air Intake Filters (ref. only)	CHECK FOR OBSTRUCTIONS
5. Landing Gear/Brakes (ref. only)	CHECK CONDITION
6. Tailwheel (ref. only)	CONDITION
7. Tailwheel Locking Lever (ref. only)	CHECK SECURITY OF LOCKING PLATE
8. Mainwheel Dirt Scrapers (ref. only)	CHECK GENERAL CONDITION
9. Tires (ref. only)	CHECK CONDITION AND INFLATION
10. Fuel Tanks (ref. only)	CHECK FOR REQUIRED QUANTITY
11. Windshield and Windows (ref. only)	CHECK FOR CLEANLINESS AND PROPER CONDITION
12. Oil Tank Contents (ref. only)	CHECK OIL LEVEL.
13. Engine Drains Collector Tanks (ref. only)	DRAIN ACCUMULATED FLUID
14. Main Fuel Filter (ref. only)	DRAIN ACCUMULATED WATER
15. Water Sediment Tank (ref. only)	DRAIN ACCUMULATED WATER

Normal Procedures

PREFLIGHT INSPECTION (continued)

16. Lights (ref. only)	CHECK
17. Pitot/Prop Heater (ref. only)	CHECK
18. Stall Warning (ref. only)	CHECK
19. Static Vents (ref. only)	CHECK

(Preflight Inspection checklist complete)

BEFORE ENGINE STARTING

1. Doors	CLOSED AND LOCKED
2. Seats/Rudder Pedals (ref. only)	ADJUST AND LOCK
3. Flight Controls	UNLOCK, CHECK CORRECT TRAVEL
4. Parking Brake	SET
5. Power Lever	IDLE DETENT
6. Idle Control Lever	CUT-OFF
7. Propeller Control Lever	OAT ABOVE +10°C - SET FEATHER OAT BELOW +10°C - SET FULL FORWARD
8. Starter Switch	OFF

BEFORE ENGINE STARTING (continued)

9. Ignition Switch	OFF
10. Generator Switch	OFF
11. Aux Fuel Pump Switch	OFF
12. Landing Lights	OFF
13. Avionics Bus Switches	OFF
14. Avionics Bus Tie	OUT (DISCONNECTED)
15. Battery Master Switch	ON, CHECK VOLTAGE
16. Fuel System Valve	OPEN, GATED
17. Avionics bus 1	ON
18. G1000 Power On Sequence	COMPLETE
19. Fuel Quantity	CHECK
20. Engine Instruments	CHECK
21. Oil Temp	CHECK (ABOVE -40°C)

(Before Engine Starting checklist complete)

Normal Procedures

ENGINE STARTING

1.	Aux Fuel Pump Switch	ON
2.	Propeller Area	CLEAR
3.	Starter Switch	ON
4.	Oil Pressure	CHECK RISING
5.	Ignition Switch	ON
>	When Ng stabilized (Min. 12% Ng):	
6.	Idle Control Lever *(Control lever safety latch will spring shut)*	LOW IDLE
7.	ITT	MONITOR (MAX 1090°C FOR 2 SECONDS)
>	When Low-Idle RPM is attained (Min. 46%):	
8.	Starter Switch	OFF
9.	Ignition Switch	OFF
10.	Oil Pressure	CHECK GREEN ARC
11.	ITT	STABILIZED BELOW 660°C
	(Engine Starting checklist complete)	

Normal Procedures

AFTER ENGINE STARTING

1.	Propeller Control Lever	FORWARD
2.	Generator Switch	ON, CHECK GEN. CAPTION OUT, VOLTS 28V AND POSITIVE AMPS
3.	Ng	CHECK ABOVE 51%
4.	Avionics Bus 2	ON
5.	Avionics Bus Tie	IN (CONNECTED)
6.	Avionics	ON / SET AS REQUIRED

(After Engine Starting checklist complete)

BEFORE TAXIING

1.	Passengers	SECURE
2.	Landing Lights	AS REQUIRED
3.	Nav Lights	ON

(Before Taxiing checklist complete)

Normal Procedures

TAXIING

1.	Tailwheel	STEER
2.	Parking Brake	RELEASE
3.	Brakes	CHECK FUNCTIONING
4.	Flight Instruments	CHECK FUNCTIONING
5.	Standby Instruments	CHECK FUNCTIONING

(Taxiing checklist complete)

BEFORE TAKEOFF

> AN EXTREMELY OUT-OF-TRIM STABILIZER CAN, IN COMBINATION WITH LOADING, FLAPS POSITION AND POWER INFLUENCE, RESULT IN AN UNCONTROLLABLE AIRCRAFT AFTER THE AIRCRAFT LEAVES THE GROUND.

> FAILURE TO SET CORRECT TRIM SETTINGS WILL RESULT IN LARGE CONTROL FORCES AND/OR UNREQUESTED PITCHING/YAWING.

1.	Trims:	
	a. Stabilizer:	
	» for mid c.g.	GREEN MARK (0°)
	» for FWD/AFT c.g	GREEN ARC (2° NOSE UP/2° NOSE DOWN)
	b. Aileron	GREEN MARK (0°)
	c. Rudder	GREEN MARK (7° RIGHT)
2.	Flaps	SET TO (28°)
3.	Flight Controls	FULL AND FREE MOVEMENT

BEFORE TAKEOFF (CONTINUED)	
4. Altimeter Setting	CHECK
5. Fuel Quantity	CHECK
6. Aux Fuel Pump Switch	ON
7. Anti-ice Switch	AS REQUIRED
8. Prop de-ice (if installed)	AS REQUIRED
9. Engine Instruments	CHECKED
10. Heating Control	OFF
11. Doors/Windows	CLOSED
> When Aligned on the Runway:	
12. Tail Wheel	LOCK
13. Rudder Pedals	FREE
14. Tail Wheel Lock Check	CONFIRM AIRCRAFT ROLLS STRAIGHT WHEN ASYMMETRIC BRAKING
15. Idle Control Lever	HIGH IDLE
(Before Takeoff checklist complete)	

Normal Procedures

TAKEOFF

>	Engine limitations:	
1.	Torque	47.3 PSI (MAX. TRANSIENT 53 PSI)
2.	ITT	725°C (MAX. TRANSIENT 825°C FOR 2 SECONDS)
3.	Ng	101.5% (MAX TRANSIENT 102.6%)
4.	Np	2000 RPM (MAX TRANSIENT 2420 RPM)

(Takeoff checklist complete)

CLIMB

1.	Flaps	UP
2.	Aux Fuel Pump Switch	OFF
3.	Oil Temperature	NORMAL
4.	Landing Lights	UP/OFF
5.	Heating	AS REQUIRED
6.	ITT	MAX. 695°C

(Climb checklist complete)

Normal Procedures

CRUISE

1.	Oil Temperature	NORMAL
2.	ITT	MAX. 695°C
3.	Engine Instruments	MONITOR
4.	Ignition Switch	SELECT ON DURING HEAVY RAIN

(Cruise checklist complete)

BEFORE LANDING

1.	Altimeter	SET
2.	Fuel quantity	SUFFICIENT
3.	Aux Fuel Pump Switch	ON
4.	Ignition Switch	SELECT ON
5.	Idle Control Lever	HIGH IDLE
6.	Flaps	AS REQUIRED
7.	Trim	AS REQUIRED. TRIM THE AIRCRAFT FOR AN APPROACH SPEED OF 68 KCAS AND SUFFICIENT POWER FOR A 3° GLIDE SLOPE (APPROXIMATELY 10 PSI POWER AND 3 UNITS OF AIRCRAFT NOSE UP TRIM)

BEFORE LANDING (continued)

8.	Heating Controls	OFF
9.	Landing Lights	DOWN AND ON
10.	Tailwheel	CHECKED LOCKED

(Before Landing checklist complete)

BALKED LANDING

> WITH FLAPS IN LANDING POSITION AND HORIZONTAL STABILIZER TRIM FULL NOSE UP, DO NOT SELECT MAX POWER BEFORE HORIZONTAL STABILIZER TRIM IS RESET TO "0".

1.	Power Lever	ADVANCE FOR TAKE-OFF POWER
2.	Wing Flaps	RETRACT TO T.O.
3.	Climb Speed	65 KCAS
4.	Wing Flaps	RETRACT AFTER REACHING SAFE ALTITUDE AND AIRSPEED

(Balked Landing checklist complete)

AFTER LANDING

1.	Stabilizer Trim	SET TO SAFE POSITION FOR TAKE-OFF (WITHIN GREEN ARC).
2.	Idle Control Lever	LOW-IDLE
3.	Tailwheel	STEER

AFTER LANDING (continued)

4.	Flaps	UP
5.	Anti-ice Switch	OFF
6.	Ignition Switch	OFF
7.	Prop de-ice (if installed)	OFF

(After Landing checklist complete)

ENGINE SHUTDOWN

1.	Tailwheel Control	LOCK
2.	Power Lever	IDLE

» (Allow engine to stabilize at idle with minimum ITT for one minute)

3.	Parking Brake	SET
4.	Landing lights	UP/OFF
5.	Cockpit/Cabin Fan	OFF
6.	Generator Switch	OFF

ENGINE SHUTDOWN (continued)

» DO NOT SELECT THE GENERATOR TO ON WITH THE PROPELLER FEATHERED AND DO NOT FEATHER THE PROPELLER WITH THE GENERATOR ON.

7. Propeller Control Lever	SELECT FEATHER
8. Idle Control Lever *(To open safety latch, move control lever to just above latch with joystick/mouse/keyboard controls, click on the latch to open, then proceed to move the control lever to cut-off position.)*	CUT-OFF
9. Aux Fuel Pump Switch	OFF (WHEN NG BELOW 5%)
10. Nav Lights	OFF
11. Battery Master Switch	OFF

(Engine Shutdown checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

ENGINE FAILURE IN FLIGHT

> DO NOT SHUT DOWN AN ENGINE DURING TAKE-OFF OR LANDING BECAUSE OF SUSPECTED ENGINE FAILURE UNLESS AN ENGINE MALFUNCTION IS DEFINITELY DETERMINED.

AIR START

> An engine flame-out will be noticed by an indicated drop in ITT, torque pressure, Ng and Np. The recommended air start technique is to initiate the Immediate Relight procedure immediately after the flame-out occurs, always assuming the flame-out was not the result of an engine malfunction and the aircraft's altitude does not allow to perform a Normal Relight Procedure. If the Ng is less than 46%, a Normal Relight should be initiated. The relight envelope for successful air starts covers all operational altitudes and airspeeds. Above 20,000 ft starting temperatures may tend to be high.

IMMEDIATE RELIGHT (NG > 46%)

1.	Power Lever	RETARD TO DETENT
2.	Idle Control Lever	LOW-IDLE
3.	Aux Fuel Pump	ON
4.	Starter Switch	ON
5.	Ignition Switch	ON
6.	ITT/Ng/Np/Fuel Flow Indicators	MONITOR
7.	Oil Pressure Indicator	MIN. 40 PSI

> When engine stabilized in LOW-IDLE:

8.	Starter Switch	OFF

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

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IMMEDIATE RELIGHT (NG > 46%) (continued)

9.	Ignition Switch	OFF
10.	Idle Control Lever	HIGH-IDLE
11.	Power Lever	AS REQUIRED
12.	Land as soon as possible	

> Immediate relight should only be carried out when height is critical for normal relight. Use only during real emergency, do not practice during training due to possible high ITT. If the Immediate Relight procedure is unsuccessful or Ng is less than 46%, the Engine Securing procedure should be performed.

(Immediate Relight (NG > 46%) checklist complete)

ENGINE SECURING

1.	Idle Control Lever	CUT-OFF
2.	Propeller Control Lever	FEATHER
3.	Power Lever	RETARD to detent
4.	Aux Fuel Pump Switch	OFF
5.	Fuel System Valve	CLOSE
6.	Generator Switch	OFF
7.	Anti-ice Switch	OFF – if not required

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

ENGINE SECURING (continued)

8.	Prop de-ice Switch (if installed)	OFF – if not required
9.	Electrical Power	REDUCE all non-essential electrical equipment to a battery discharge current of less than 35A
	(Engine Securing checklist complete)	

NORMAL RELIGHT

1.	Propeller Control Lever	FORWARD
2.	Power Lever	RETARD
3.	Idle Control Lever	CUT-OFF
4.	BAT Radio/GEN Radio BUS Switches	OFF
5.	Fuel System Valve	OPEN
6.	Generator Switch	OFF
7.	Aux Fuel Pump Switch	ON
8.	Starter Switch	ON
9.	Ignition Switch	ON
10.	Oil Pressure Indicator	CHECK RISING

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

NORMAL RELIGHT (continued)

> When Ng stabilized above 12%:

11. Idle Control Lever	LOW-IDLE
12. ITT	MONITOR
> When Ng 52%:	
13. Oil Pressure	CHECK, GREEN ARC
14. Starter Switch	OFF
15. Ignition Switch	OFF
16. Generator Switch	ON
17. Idle Control Lever	HIGH IDLE
18. Power Lever	AS REQUIRED
19. BAT Radio/GEN Radio BUS Switches	ON
20. Land as soon as possible	

> For a power off landing establish the best glide speed, which should be not less than 75 knots IAS.

(Normal Relight checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

SMOKE AND FIRE

ENGINE FIRE ON THE GROUND (WITHIN THE ENGINE)

> The following procedure is to be used if there is evidence of a fire within the engine. Air passing through the engine is utilized to purge the fire from the combustion section, gas generator turbine, power turbine and exhaust system.

1.	Idle Control Lever	CUT-OFF
2.	Fuel System Valve	CLOSE
3.	Ignition Switch	OFF
4.	Generator Switch	OFF
5.	Aux Fuel Pump Switch	ON (to lubricate fuel pump)
6.	Starter Switch	ON

> SHOULD THE FIRE PERSIST, INDICATED BY SUSTAINED ITT, CLOSE FUEL SYSTEM VALVE AND CONTINUE MOTORING (STARTER OPERATION).

> DO NOT EXCEED STARTER LIMITATION (30 seconds).

7.	Starter Switch	OFF
8.	Aux Fuel Pump Switch	OFF
9.	Battery Switch	OFF
10.	Aircraft	EVACUATE

(Engine Fire On The Ground checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

CLEARING THE ENGINE ON THE GROUND

> The following procedure is used to clear the engine when it is necessary to remove internally trapped fuel and vapor. Air passing through the engine is utilized to purge fuel and fuel vapor from the combustion section, gas generator turbine, power turbine and exhaust system.

1.	Idle Control Lever	CUT-OFF
2.	Ignition Switch	OFF
3.	Generator Switch	OFF
4.	Aux Fuel Pump Switch	ON (to lubricate fuel pump)
5.	Starter Switch	ON

> Maintain starter operation for 10 seconds then allow starter to cool one minute before re-engaging.

> DO NOT EXCEED STARTER LIMITATION (30 SECONDS).

6.	Starter Switch	OFF
7.	Aux Fuel Pump Switch	OFF

(Clearing The Engine On The Ground checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

FORCED LANDING (ENGINE INOPERATIVE)

1.	Prop control lever	FEATHER
2.	Fuel System Valve	CLOSE
3.	Flaps	TO
4.	Turn to nearest airfield and glide for range	
5.	Speed	75 KIAS (Best Glide Speed)
6.	Harness (Crew and Pax)	TIGHT
7.	Radio	EMER-CALL
>	When landing assured:	
8.	Flaps	LD
9.	Battery	OFF
10.	Speed	70 KIAS

(Forced Landing checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

COCKPIT DOORS EMERGENCY OPENING

> The following procedure is to be used if a cockpit door needs to be jettisoned. A red-painted, safety-wired door jettison lever is located on the upper forward door frame.

1.	Cockpit Door Handle	UNLOCK POSITION
2.	Door Jettison Lever	PULL INBOARD and DOWN
3.	Cockpit Door	PUSH OUTWARD

(Cockpit Doors Emergency Opening checklist complete)

TRIM RUNAWAY

HORIZONTAL STABILIZER TRIM

1.	Airspeed	REDUCE to obtain acceptable residual control forces

> MINIMUM SAFE AIRSPEEDS MUST BE OBSERVED.

2.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
3.	STAB TRIM CB's	PULL
4.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' DOWN

> IF TRIM DOES NOT MOVE (IT INDICATES A MAIN SYSTEM TRIM RUNAWAY):

5.	ALTERNATE STAB TRIM NOSE DN/UP Switch	OPERATE to achieve required trim

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

HORIZONTAL STABILIZER TRIM (continued)

> IF TRIM DOES MOVE (IT INDICATES AN ALTERNATE SYSTEM TRIM RUNAWAY):

6.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
7.	STAB TRIM CB's	PUSH
8.	Main Trim Switch	PRESS and HOLD in opposite direction
9.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' DOWN

> Both motors (main and alternate) will operate. As the main motor is faster, it will override the alternate.

> As soon as trim is in desired position:

10.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
11.	Land without further trim operation	

(Horizontal Stabilizer Trim Runaway checklist complete)

RUDDER TRIM

1.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
2.	RUDDER TRIM CB	PULL
3.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' DOWN

(Rudder Trim Runaway checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

AILERON TRIM

1.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
2.	AILERON TRIM CB	PULL
3.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' Down

(Aileron Trim Runaway checklist complete)

LOSS OF ELEVATOR CONTROL

> THE PITCH TRIM IS POWERFUL AND LARGE TRIM CHANGES CAN RESULT FROM CHANGES IN AIRSPEED AND POWER. TO AVOID LARGE PITCH EXCURSIONS, AVOID LARGE POWER CHANGES AND ADJUST ELEVATOR TRIM CONSTANTLY.

1.	PWR	OUT of Beta range
2.	Elevator trim	OPERATE to achieve required aircraft attitude
3.	Land as soon as practical	

> MINIMUM SAFE AIRSPEEDS HAVE TO BE OBSERVED

> It is recommended to perform a controllability check (simulated approach/ landing attitude) at a safe altitude. Consider use of FLAPS to assist in maintaining the required aircraft attitude.

(Loss Of Elevator Control checklist complete)

Emergency Procedures

PLEASE NOTE: EMERGENCY PROCEDURES ARE PROVIDED FOR REFERENCE AND GENERAL INTEREST ONLY.

FAILURES REFERRED TO ARE NOT EMULATED WITHIN THE PC-6 PORTER NOR NECESSARILY ACCURATE OR POSSIBLE WITHIN THE SIMULATOR.

INADVERTENT SPIN

> Intentional spinning is prohibited

> In case of inadvertent spin entry, the recovery procedure is as follows:

1. REDUCE POWER
2. RETRACT FLAPS IMMEDIATELY (IF EXTENDED)
3. CHECK SLIP BALL, THEN APPLY FULL OPPOSITE RUDDER
4. STICK CENTERED

> ALTITUDE LOSS CAN BE AS MUCH AS 1300 FT FROM SPIN ENTRY TO RECOVERED LEVEL FLIGHT

(Inadvertent Spin checklist complete)

Performance Information

PERFORMANCE FOR 2800 KG, GROSS WEIGHT, WITH NO WIND, ON LEVEL, PAVED RUNWAY

(Idle Control at High Idle Position)

CONDITIONS		OUTSIDE AIR TEMPERATURE					
	Altitude (Feet)	ISA -30°C	ISA -20°C	ISA -10°C	ISA 0°C	ISA +10°C	ISA +20°C
TAKE-OFF DISTANCE		m	m	m	m	m	m
Distance required to take-off and climb to 15 m (50 ft.)	S.L	460	465	470	475	480	490
» Take-off Power	2000	470	475	480	485	490	505
» Flaps TO 28°	4000	475	480	485	490	505	590
» Climb speed 69 KCAS	6000	485	490	495	505	570	675
LANDING DISTANCE		m	m	m	m	m	m
At gross landing weight							
Distance required to land over 15 m obstacle	S.L.	285	295	305	315	325	335
and stop with brakes and reverse thrust	2000	300	310	320	330	340	350
» Flaps LD 38°	4000	310	320	330	340	350	360
» Approach at 68 KCAS	6000	325	335	345	355	365	375
NORMAL RATE-OF-CLIMB		ft/min	ft/min	ft/min	ft/min	ft/min	ft/min
Take-off/Maximum continuous power							
» Flaps up	S.L:	1070	1050	1030	1010	990	970
» Airspeed	2000	1040	1020	1000	980	960	930
» 77 KCAS	4000	1010	990	970	950	930	835
	6000	980	960	940	920	895	735
BALKED LANDING CLIMB		ft/min	ft/min	ft/min	ft/min	ft/min	ft/min
Take-off/Maximum continuous power							
» Flaps LD	S.L.	800	780	760	740	720	700
» Airspeed	2000	770	750	730	710	690	660
» 65 KCAS	4000	740	720	700	680	660	565
	6000	710	690	670	650	610	460

SHORT TAKE-OFF PERFORMANCE FOR 2800 KG, GROSS WEIGHT, WITH NO WIND, ON LEVEL, PAVED RUNWAY

(Idle Control at High Idle Position)

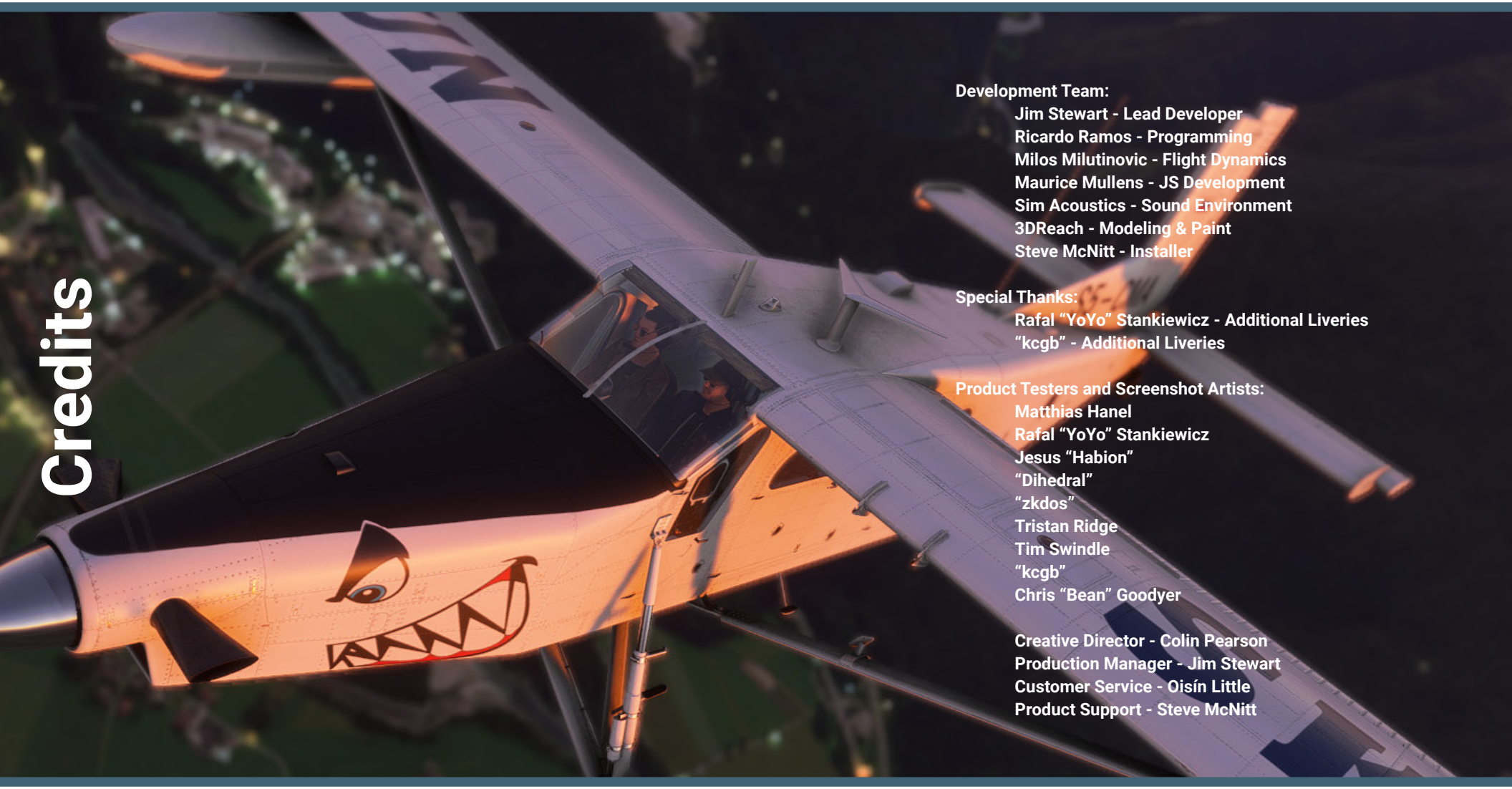
CONDITIONS		OUTSIDE AIR TEMPERATURE					
	Altitude (Feet)	ISA -30°C	ISA -20°C	ISA -10°C	ISA 0°C	ISA +10°C	ISA +20°C
TAKE-OFF DISTANCE		m	m	m	m	m	m
Distance required to take-off and climb to 15 m (50 ft.)	S.L	425	430	435	440	445	455
» Take-off Power	2000	435	440	445	450	455	470
» Flaps TO 28°	4000	440	445	450	455	470	555
» Climb speed 69 KCAS	6000	450	455	460	470	530	635

STALLING SPEED

The stalling speeds for gross weight of 2800 kg are given in Figure 3-3 below for various angles of bank, and flap setting.

FLAP SETTING		ANGLE OF BANK		
		0° KCAS	30° KCAS	60° KCAS
Clean	0°	58	62	82
TO	28°	53	57	75
LD	38°	52	56	74

Credits



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