PC-6 PORTER

USER GUIDE

BLACKBIRD SIMULATIONS

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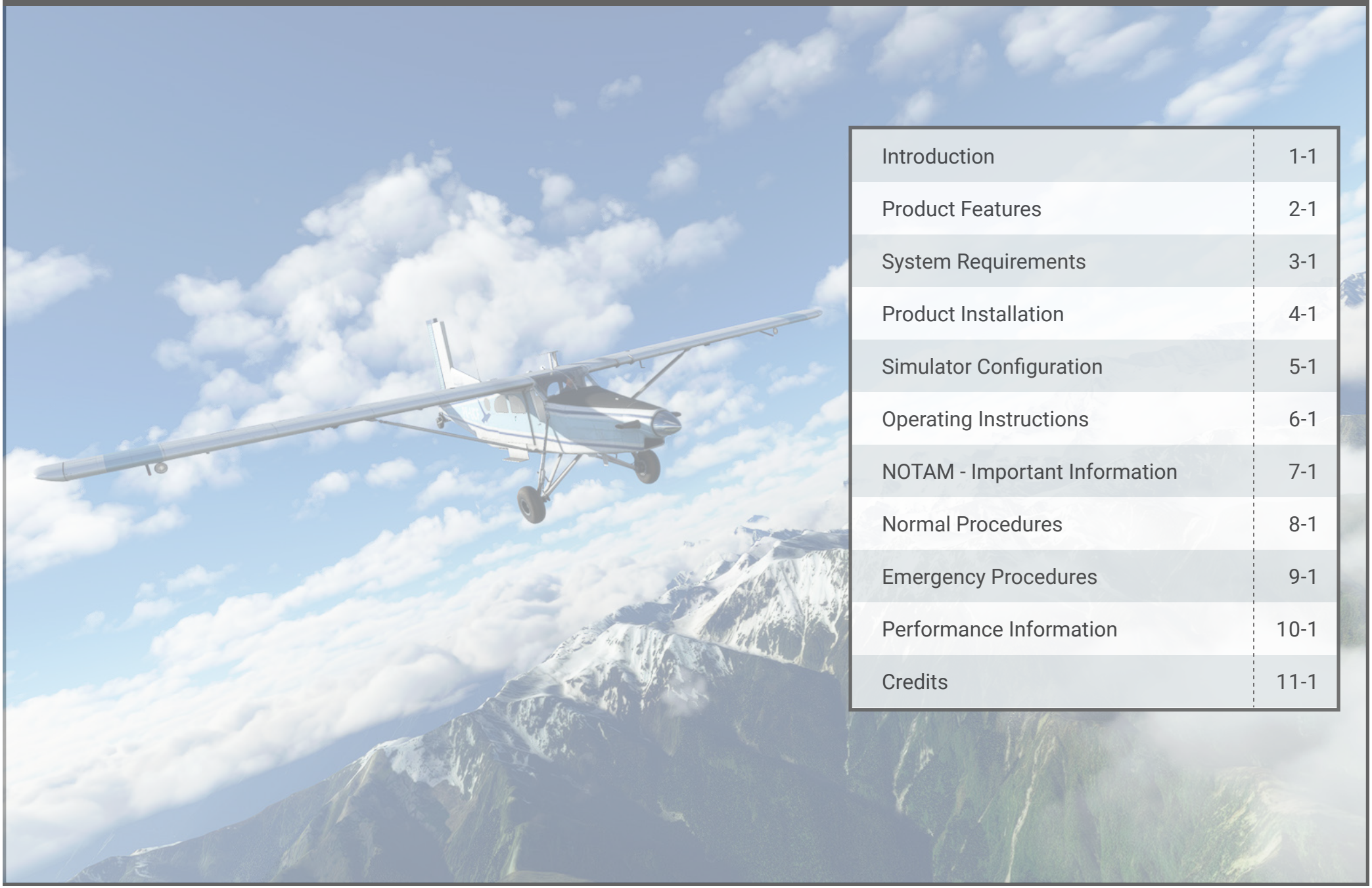


Introduction

Welcome!

We are very excited to introduce you to the Blackbird 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 Blackbird PC-6 Porter. Worldwide, the Blackbird Simulations 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 meters (18,700 feet) 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.

We've included multiple configurations of this aircraft, both inside and out. Up front, we have both a glass version (equipped with the venerable G1000), as well as a full featured panel with a complete suite of analog gauges, while the rear cabin can be switched on the fly between three variations: Passenger, Cargo and Skydiving.

On the outside, we've ensured this powerful workhorse can go literally everywhere. Besides the standard size tires (that can be outfitted on the fly with optional skis, there's also a version with 'tundra' tires for landing on rough unimproved strips. In addition, we've also included a version that sits on floats for all the water fun you can handle!

It's also worth talking about the many unique features found in this faithful simulation.

One of the most famous characteristics of the Porter is it's famed 'beta' descent, where the when the power lever is reduced to idle, the prop blades move to their minimum in-flight position and act as a giant air brake. We've gone outside the box to recreate this, allowing for heart-stopping steep drops while retaining a controlled airspeed!

Engine simulation is advanced as well. Although we don't track wear and tear on the Porter, we do simulate a catastrophic hot-start if fuel is introduced at the wrong time. We also provide feedback on whether the engine is over-stressed by operating it over it's limitations, as well as provide feedback when the battery has been overheated by a long crank time.

Our cargo version includes dynamically appearing cargo that differs based on the amount of weight on-board, which sounds interesting enough, but what if you wanted to air-drop some of that? That's right - there's a trapdoor in the Porter, and the capability has been included to load a crate on top of the trapdoor, pull the handle, and wave goodbye!

We've also included a separate skydiving cabin layout that features a typical arrangement in the rear cabin, a fully functional skydiving altimeter, along with an in-depth tablet loading function that allows a random load of skydivers to be picked up, assigns a random jump altitude they wish to be flown to, and then allows a dynamic jump 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 PC-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.

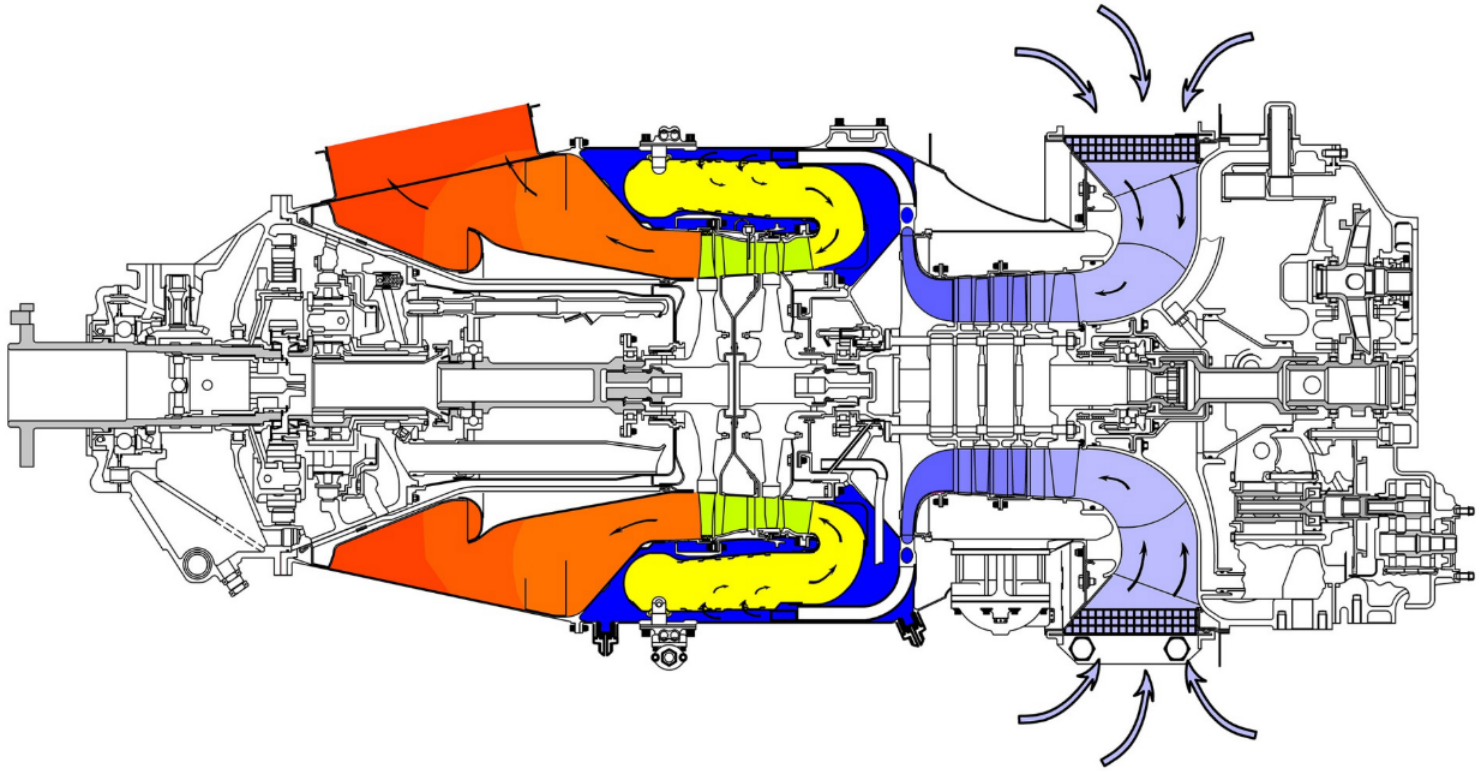
Immediately following touchdown, partial or full reverse thrust may be obtained by lifting and retarding the power lever aft of the detent. Reverse thrust can be varied by moving the power lever to any position aft of the lift detent.

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.
- Multiple variants of the PC-6 include standard sized tires (with optional skis), tundra tires, and standard straight floats.
- Two different panel layouts - one equipped with the G1000 (with enhanced G1000 NXi engine panel compatibility), the other featuring a full suite of analog gauges.
- Functional trap doors complete with the visual effect of droppable cargo and dynamic weight adjustment.
- Removable 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!
- Three distinct cabin configurations for hauling passengers, skydivers, or cargo.
- Highly detailed tablet is present in the aircraft to allow for in-depth configuration of your flight, including configurable passenger weights, a dynamic cargo system which adjusts the loaded weight and visual appearance in an intuitive manner, full control over fuel levels, and an interactive skydiving simulation.
- 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.
- 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.
- State saving for configuration choices and certain visual options.
- 10 highly detailed liveries based on real world aircraft, along with a downloadable paint kit for creating your own.
- Built-in compatibility for user or community modifications, with a selectable blank area for custom use.

System Requirements

The following requirements apply as a general minimum to successfully install, configure and operate the Blackbird 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:	Platform compatibility is limited to operating systems supported by Microsoft Flight Simulator 2020
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 Blackbird 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 installation of this product.

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 Blackbird 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 Blackbird 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 Blackbird.

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.

Blackbird vs. Milviz:

Many of our customers have likely bought this product under our previous name 'Military Visualizations', otherwise known as 'Milviz'. Well, don't worry, it's still us, and it's still the same aircraft!

We won't get into the reasons behind the name change here (it's rather boring!) but it's enough to say that the Milviz name is now used exclusively for our commercial products, and Blackbird is our entertainment division.

Because this product was initially released under the Milviz name, in certain places you'll still see that name used as we're unable to change it everywhere for compatibility purposes.

Uninstalling

The Blackbird Simulations 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.

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 Blackbird 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.

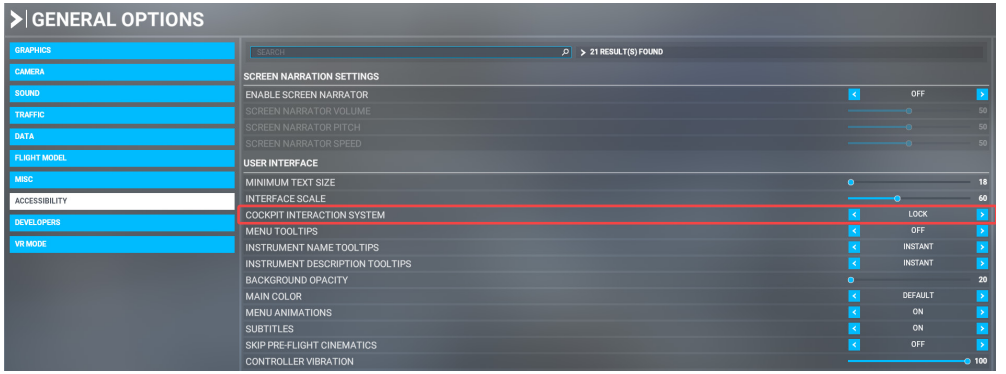
Flight Model

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, options can be set according to user preference. However, there are a few settings that need to be set properly for the aircraft to function as intended.

Under the 'Failure and Damage' section, please ensure that the option titled '**Aircraft Stress Damage**' is set to **DISABLED**. This is required to be able to operate



the trap doors and the storm window in flight. As the aircraft stress trigger when aircraft exits are opened in flight is unintended, it's possible that in future simulator updates this requirement may disappear.

Next, ensure that the setting for '**Engine Stress Damage**' is set to **ENABLED**. This is important, as it allows the custom coded effects for hot start and engine overstress to occur. Without this setting enabled, unintended effects may be witnessed, such as the ITT temperature spiking on a hot start but the engine continuing to run.

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.

Operating Instructions - Tablet

The Blackbird 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.

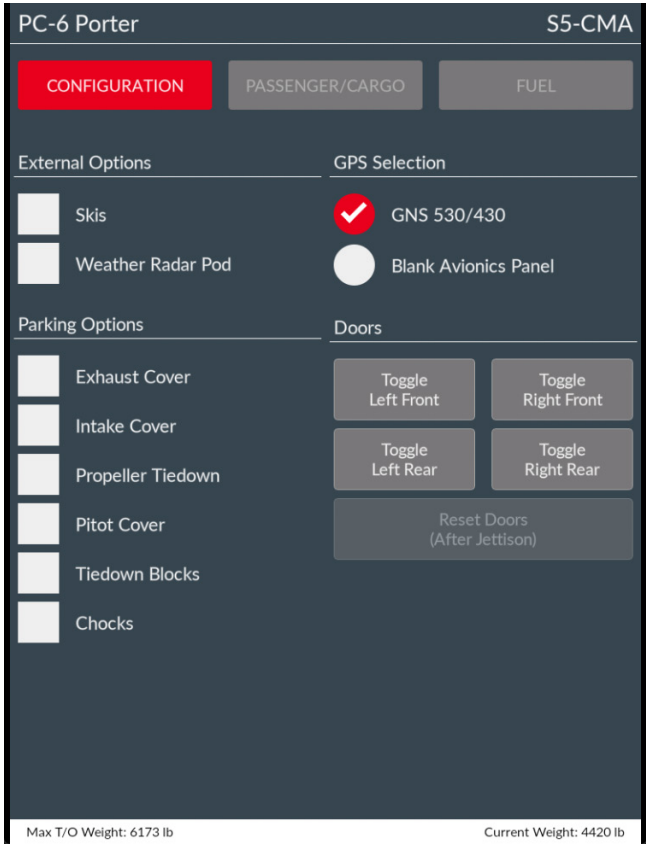
In its stowed position, it sits on the far right hand side of the shelf, in front of the copilot.

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'.

In the 'Configuration' tab, various external visual elements can be toggled between a hidden or shown state. Note that the displayed options are tailored to the aircraft version in use - you won't see a checkbox for skis while you're in the float equipped version, for instance!



In the analog gauge version, you'll have a GPS section that won't appear in the G1000 version.

The 'Blank Avionics Panel' option on the analog version provides a blank panel suitable for user modifications.

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.

Operating Instructions - Tablet

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

The top section allows for adjustment of the pilot and copilot weights, along with a checkbox to allow the copilot 3D model to be hidden.

The Cabin Configuration section allows for switching between the three variants; options below this point will change depending on which variant is shown.

For a normal cargo load, the slider may be used to select a weight. The buttons below the slider add utility by removing the loaded weight or loading the total weight allowed to reach the maximum takeoff weight, based on the currently loaded amount of fuel and pilots.

The Droppable Cargo section allows for a crate to be loaded on top of the trapdoor. When the doors have been released, closing the doors will allow the checkbox to be re-selected, loading another crate primed and ready for another drop!

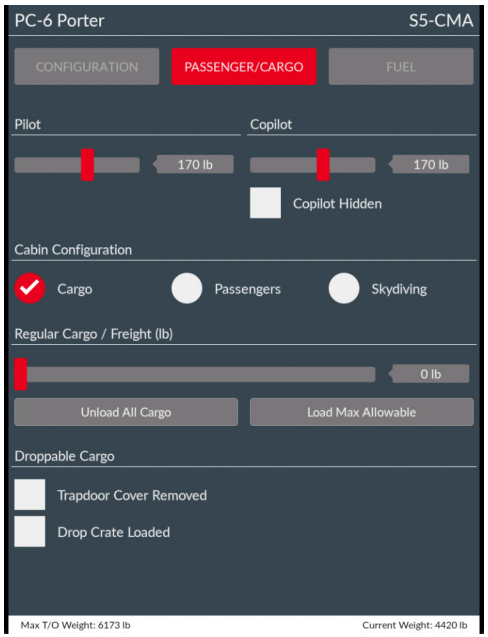
The Passengers configuration is easy to understand. A slider allows for adjustment of the weight for each seat, while a button exists to load a random weight in that seat.

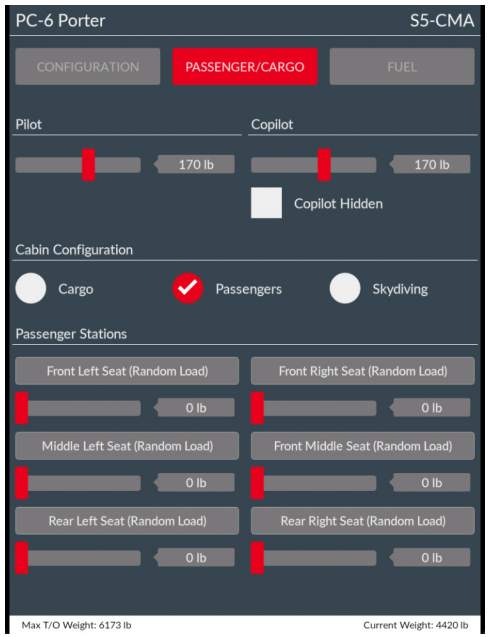
The Skydiving configuration might have the least amount of options, but it has the capability for lots of fun! Clicking the Load Passengers button will load a random amount of skydivers, each with a random weight that takes into account the extra equipment load. It also shows an altitude the skydivers wish to jump at. This altitude is randomly selected but takes into account the airfield elevation and safe jump heights.

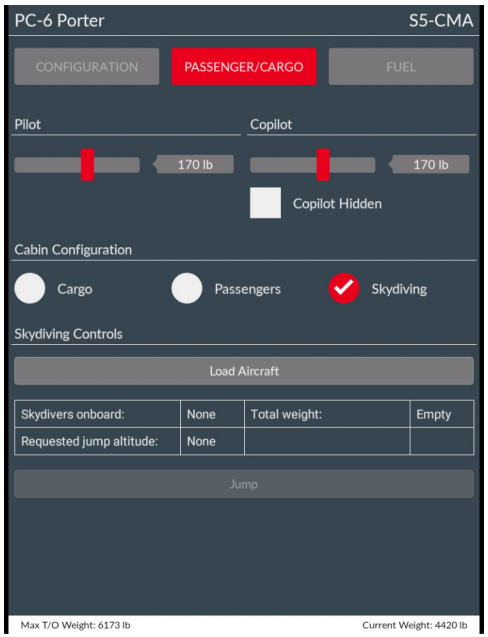
When the altitude is reached, the Jump button will become active - clicking it will then cause the skydivers to slide the right hand door open, and exit the aircraft one at a time. A notification will display both the in-progress jump, as well as when the jump is complete. Enter into a trademark Porter descent, hear the sliding door close, and race back to the airfield to pick up another load!

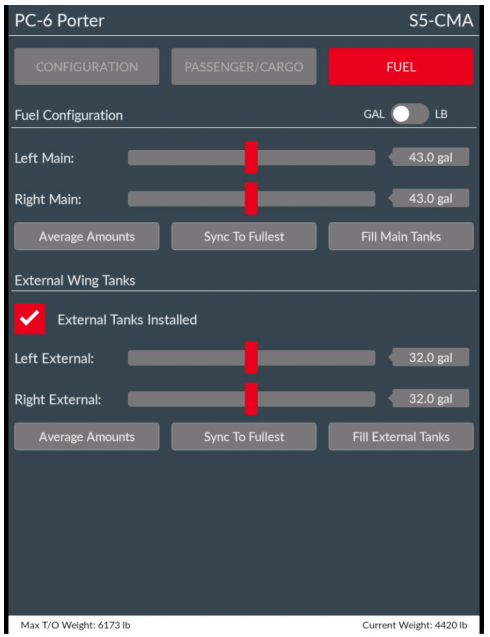
The Fuel tab allows for total control over the fuel levels of the aircraft via sliders and utility buttons for the main tanks as well as the optional external wing tanks.

The external tanks may be completely removed from the aircraft by means of the provided checkbox.









Operating Instructions - Dropping Cargo

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

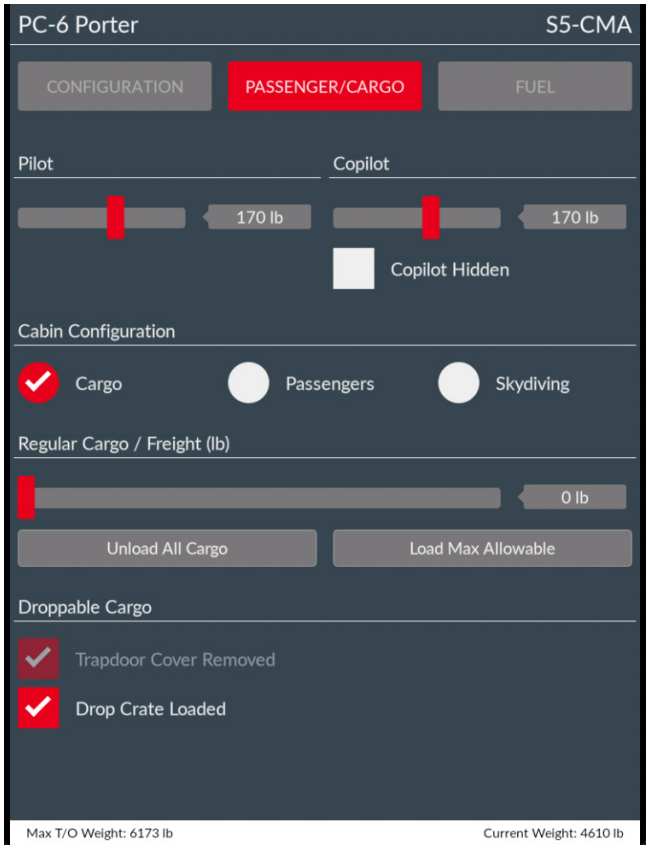
The PC-6 Porter features a set of trap doors located in the center of the rear cabin, which is normally covered by a floor panel. When in use, the floor panel is removed and the items to be dropped are loaded directly on the trap doors. When the drop handle is pulled, the doors open, releasing the cargo.

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 special droppable cargo item, first ensure the regular cargo slider is at zero, either by moving it to that point or pressing the 'Unload All Cargo' button. The droppable item checkboxes may then be used, with the 'Drop Crate Loaded' checkbox actually placing the cargo item on top of the trapdoors.

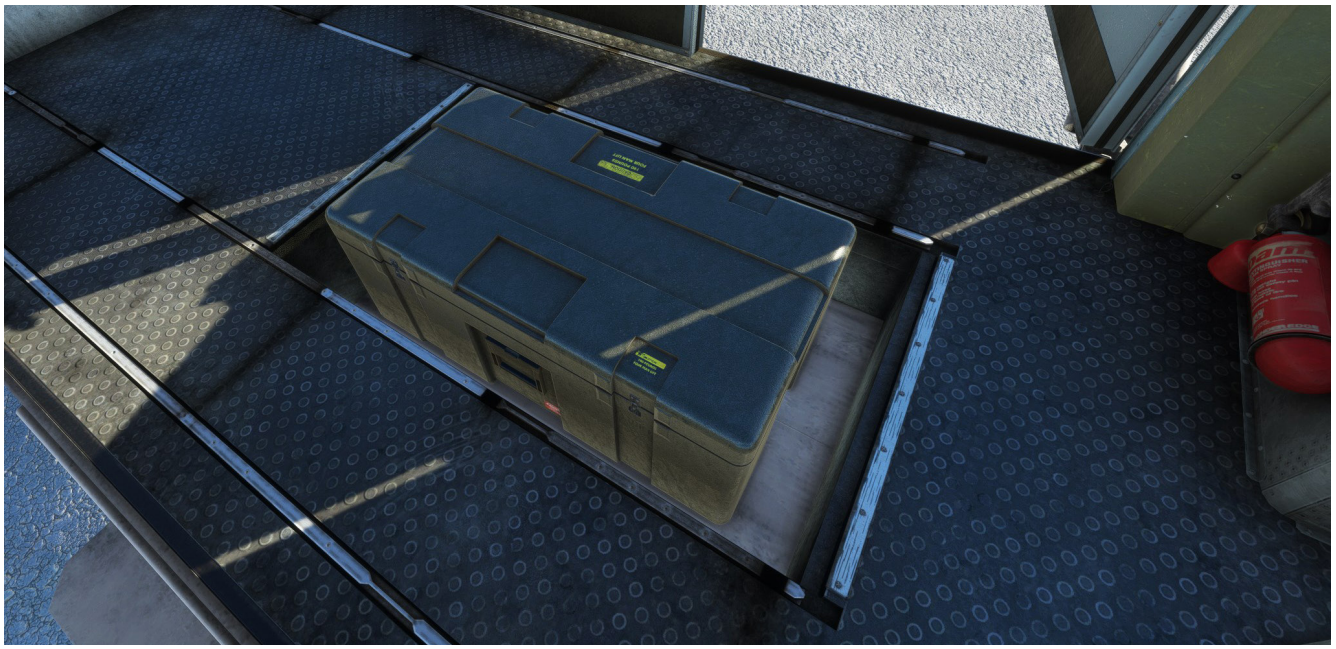
To drop the loaded item, simply pull the trapdoor release handle located on the same panel as the flaps switch and rudder trim switch. Closing the doors is accomplished by pushing the handle back in.

Note that this handle is only installed when the cargo version has been selected!



Once dropped and the trapdoors closed, the drop item can be reloaded for another drop by reselecting the 'Drop Crate Loaded' checkbox.

The aircraft weight dynamically responds to whether the drop crate has been loaded or not.



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.

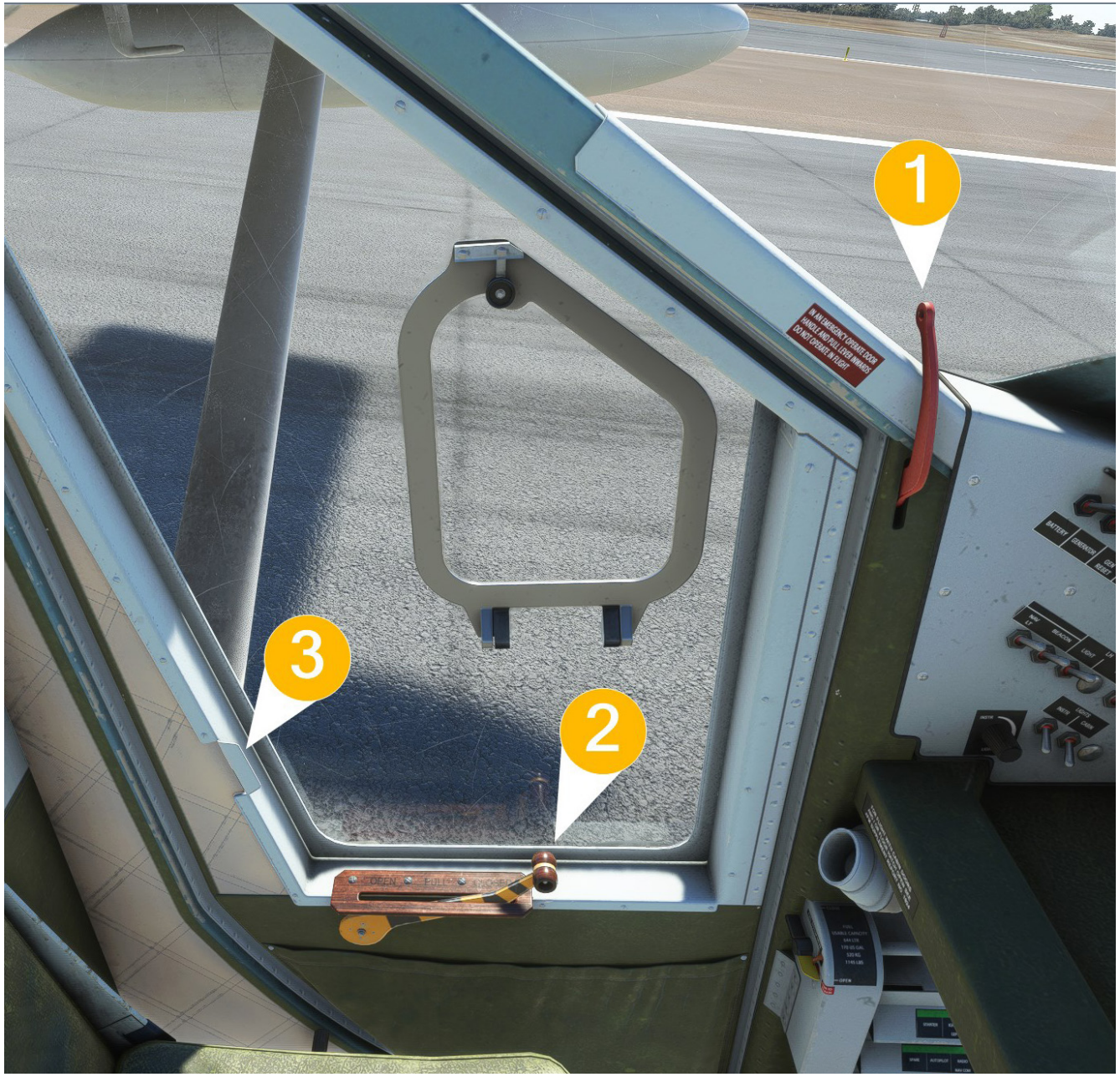
2) Move the door latch lever aft to the 'Open' position.

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 - 'Beta' Descent

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!

Upgrading Avionics

Default or?

Although the default G1000 (in the glass version) and GNS 530/430 (analog version) is fully operational, our PC-6 Porter allows the use of the expanded units under development by Working Title.

At the time this document was published, both Working Title projects are still under development to varying degrees. During this process, compatibility issues may be encountered. It is due to this huge potential for compatibility issues that we've only chosen to officially provide support for the inclusion of the G1000 and the GNS 530 / & GNS 430. Despite the greater user friendliness of the GTN units offered by various 3rd party developers.

Unofficially however, we're attempted to make things as easy as possible for people who are comfortable with modding. The XML files of the aircraft contain documentation to enable GTN 750 and 650 bezels, along with full descriptions of all node and animation names.

In regards to the G1000 NXi, the Porter supports multiple EIS pages offered through the NXi configuration. These extra fuel and systems pages are not available on the default G1000.

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

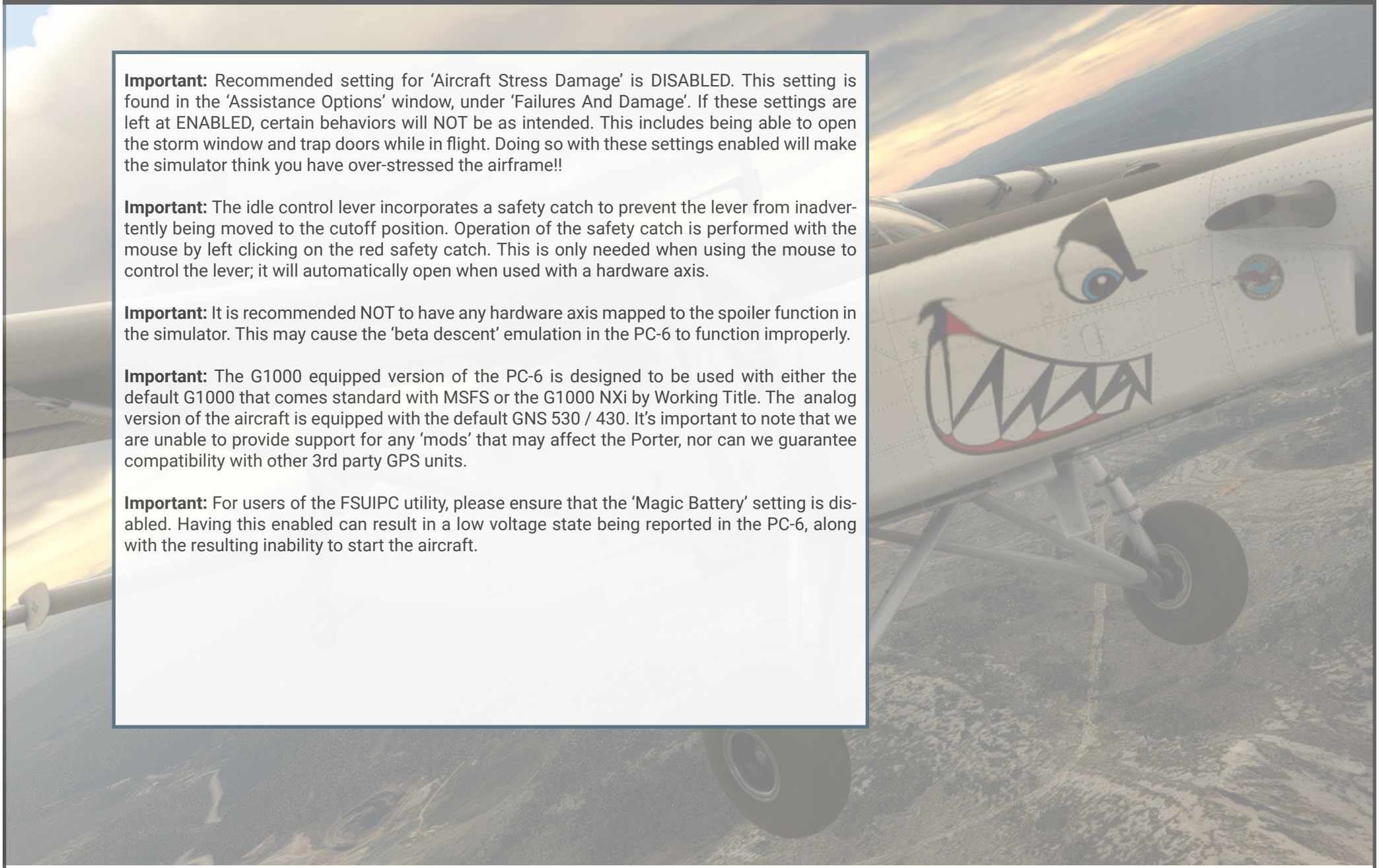
The full scope of operating the NXi is not covered here, but it is worth mentioning operation of the EIS pages, since they are tailored to each type of aircraft.

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.)

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 setting for 'Aircraft Stress Damage' is DISABLED. This setting is 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 descent' emulation in the PC-6 to function improperly.

Important: The G1000 equipped version of 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. The analog version of the aircraft is equipped with the default GNS 530 / 430. It's important to note that we are unable to provide support for any 'mods' that may affect the Porter, nor can we guarantee compatibility with other 3rd party GPS units.

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. GPS 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)	

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)

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)	

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)

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

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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)

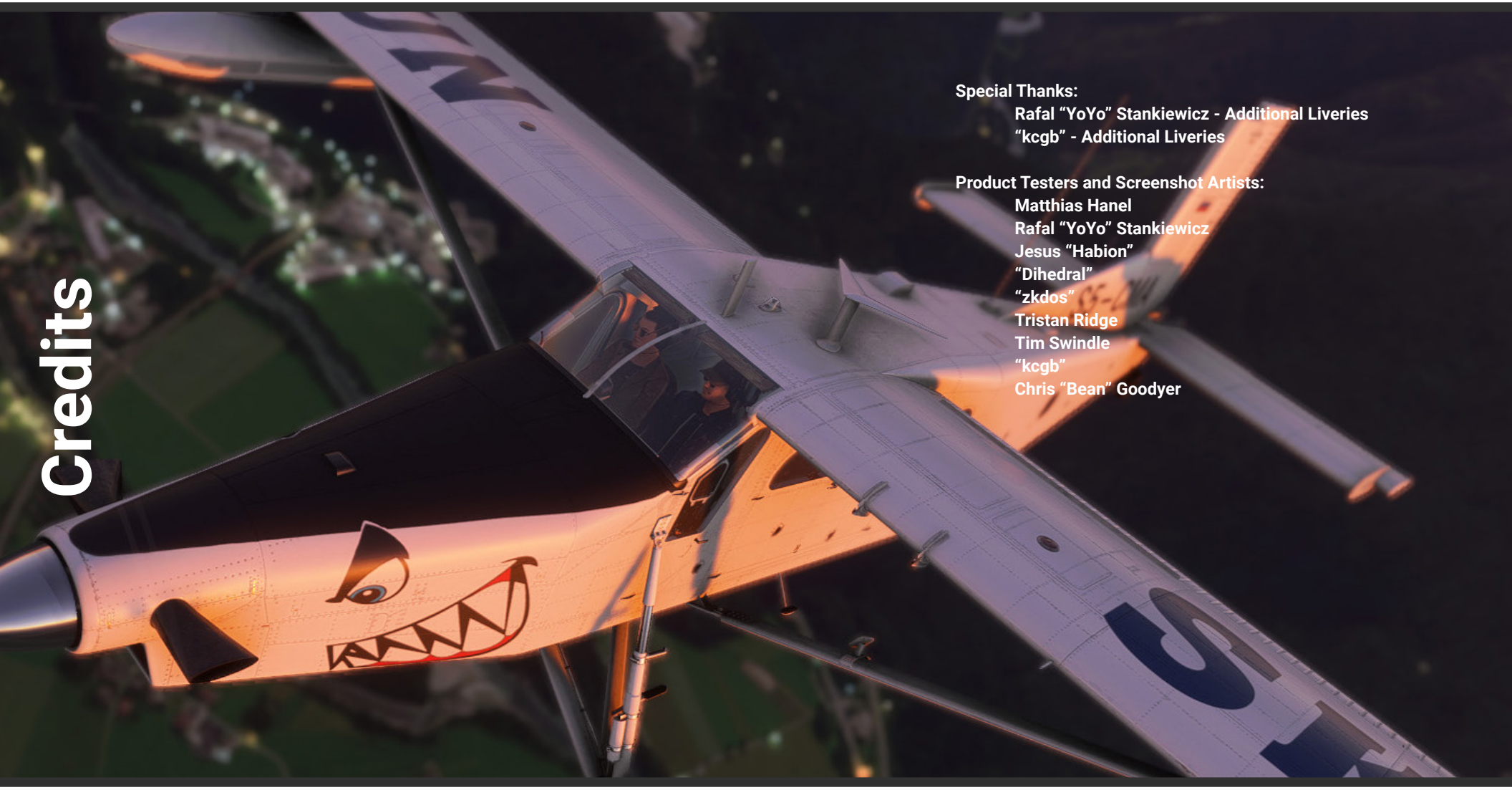
CONDITIONS		OUTSIDE AIR TEMPERATURE					
	Altitude (Feet)	ISA -30°C	ISA -20°C	ISA -10°C	ISA 0°C	ISA +10°C	ISA +20°C
TAKE-OFF DISTANCE		m	m	m	m	m	m
Distance required to take-off and climb to 15 m (50 ft.)	S.L	425	430	435	440	445	455
» Take-off Power	2000	435	440	445	450	455	470
» Flaps TO 28°	4000	440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