TRUE COURSE
SIMULATIONS

User Manual

C172 (*LITE*) VR ITD

Operation & Support Guide

Version 2.1 | WWW.TCSIMS.COM | 2025

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C172 VR ITD – Quick Start Guide Checklist

1. Power & Login

- Confirm power cord is plugged in
- Set power switch to ON
- Press power button to power on
- Login password: 8347 (unless otherwise set)

2. Auto Software Launch

Wait for the following to start automatically:

- Windows Mixed Reality Portal
- SteamVR
- True Course Simulations Website (in fullscreen)

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- P3D Free-Flight: Double-click desktop icon
- TCS Courseware: Log in at website
    - Use your email + password & start a lesson from the dashboard

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📞 **Need Help?**

Support@tcsims.com | +1 (928) 800-5960

AJ@tcsims.com | +1-928-547-0762 | Call/Text/Whatsapp

Overview

Below is the operation guide for the C172 VR Immersive Training Device (ITD). ITD is the abbreviated term that we use to refer to the simulator. This guide gives a general overview of using the ITD from logging in, navigating the courseware, troubleshooting and more. We respond as quickly as possible to any support inquiries, but we ask that you please refer to this document first before reaching out for support to reduce the workload of the support team. Thank You.

Startup

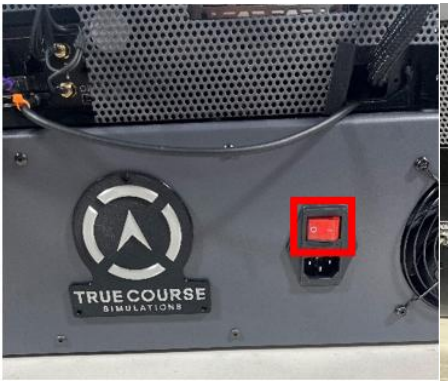
Wake screen/login

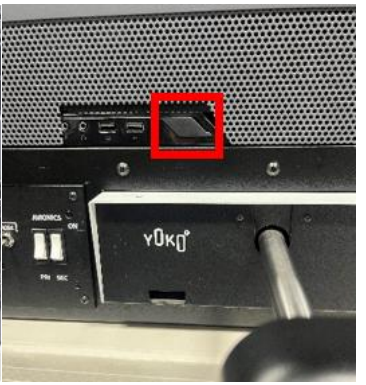
The ITD should be left on unless there is a specified reason for it to be shut down. To wake up the computer, move the mouse or click any key on the keyboard for the screen to pop-up if it hasn't already.

If the ITD is shut down and needs to be turned on, follow the steps below.

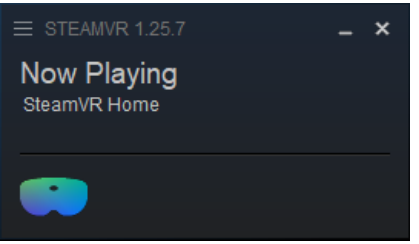
Turn on/login

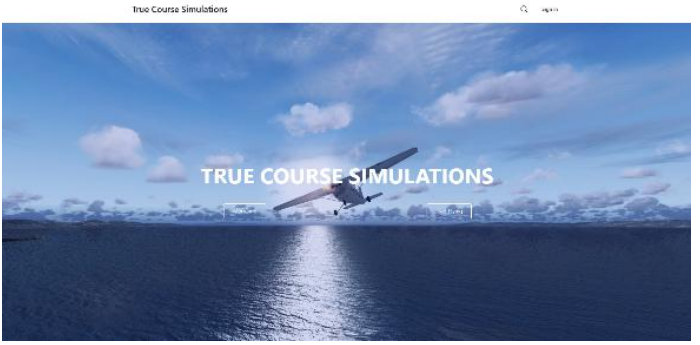
Make sure the power cords are plugged into the back of the ITD and the power switch is in the "on" position. Turn the ITD on using the power button that is located just above the Yoko flight control on the front.





When logging in, the password is **8347** as default. This may be different if your institution has opted to change it. Once the computer has logged in, please wait for the automatic programs to open. These programs should include Windows Mixed Reality Portal, Steam VR, and True Course Simulations website.





The website should load in full screen. If the Windows Mixed Reality Portal launches in the way of the website, you can minimize the page. The headset should connect automatically and connect to SteamVR.

Before loading any simulated lessons, follow the steps below giving an overview of the HP Reverb G2 VR headset and basic adjustments and calibration methods to make sure it works best for you.

Hp Reverb G2

Headset Adjustment

The headset can be adjusted by using the three straps (one on each side and one on top) and the IPD (Inter-Pupillary distance) located on the bottom right (with the headset on).

The top strap adjusts the depth that the back of the headset rests on your head and the side straps adjusts the tightness to

your face. On the underneath of the headset there is a slider adjustment that will adjust the IPD (Inter-Pupillary distance).

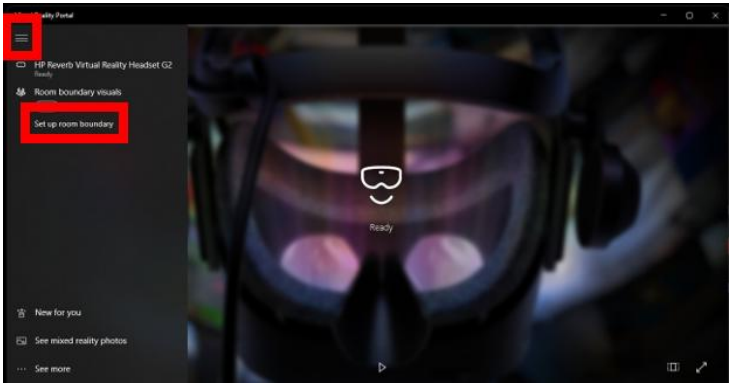
NOTE: if the visual is at first blurry, try adjusting all three straps so the headset fits snug against your face with your eyes centered with the lenses. You can also make minor adjustments up and down to find this center point. Think of this like looking through binoculars. There is a “sweet spot” where the image is clear.

Headset Calibration

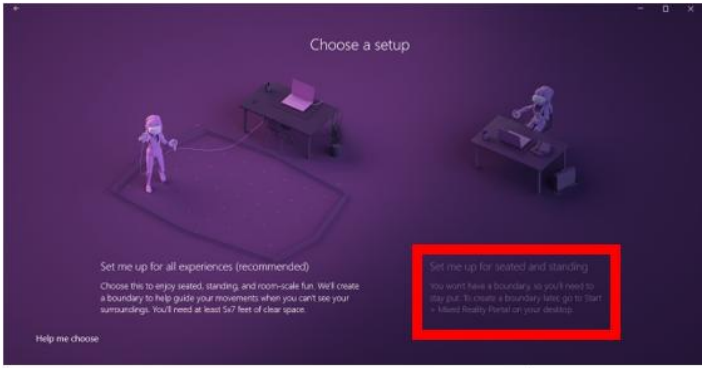
If, when in the simulated environment, the headset is working but the “depth” is not, meaning as you shift your head forward and back, the image moves away from you rather than you getting closer, follow these calibration steps.

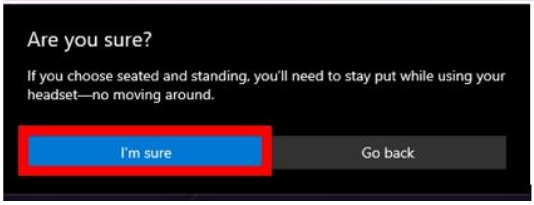
NOTE: this calibration shouldn’t have to be done every time you use the ITD. This calibration uses the various censors on the front and sides of the headset to determine a centered point that allows for special recognition resulting in the ability to get closer to and further away from objects in the simulated environment. Enough light is required for this to calibrate properly and remain calibrated. Varying lights conditions may cause calibration to be needed more frequently.

Open the windows mixed reality portal and navigate to the top left where the three lined icon is. Click on the three lines then on “set up room boundary”



Choose the setup for seated and standing and choose “I’m sure” when prompted.





Before clicking “center” to calibrate the headset, have the headset positioned center in relation to the ITD. This can easily be done by having the headset rested on your head above your eyes so you can still click the center button. Once the headset is in a centered position, click “center”.

You can now minimize this window.

NOTE: the computer will need to be thawed using deepfreeze for this calibration to save. You can learn more about deepfreeze in the Support and Maintenance section.

If the above images do not match what your computer screen is showing, navigate the troubleshooting page and find the section for the headset.

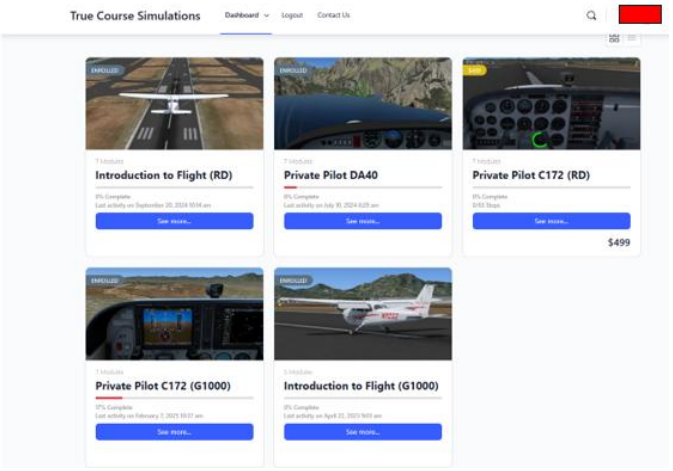
Operation of the ITD

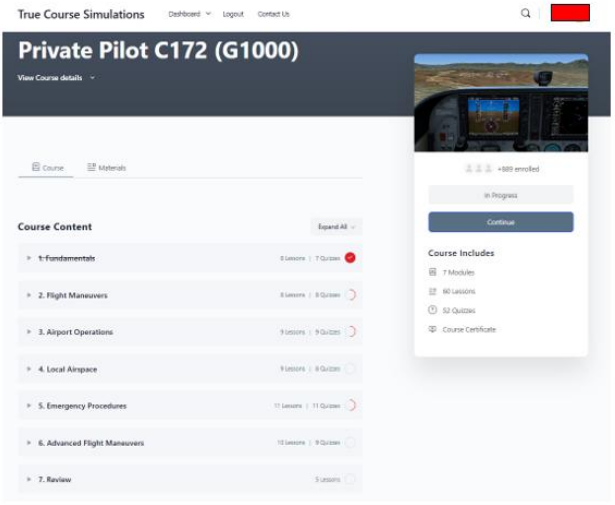
There are two ways the ITD can be flown; in “free flight” or through the courseware that is loaded using your unique login through the TCS website.

Courseware

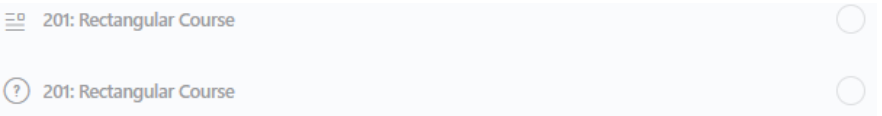
Your login for the courseware, once your account has been created, will be your full email as the username and the password will be “changeme”. This is the default password and can be changed by going to your account once logged in. This is located at the top right of the page. Once you are logged in, you can select the course from the dashboard page which will

take you to the module tabs. Each module can be expanded using the drop-down arrow and individual lessons can be completed.



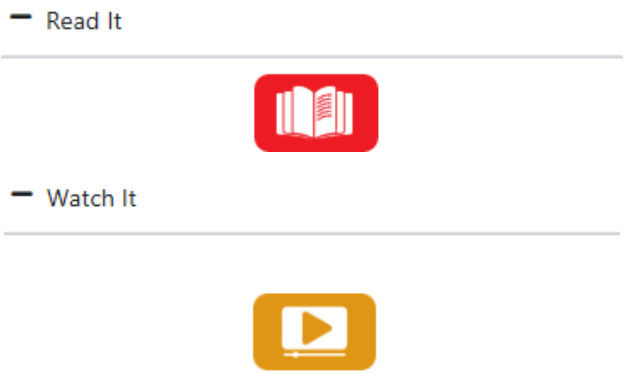


For each lesson there are two lines as shown below:



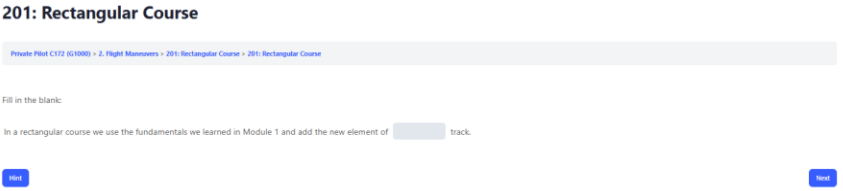
The lessons lines that have this symbol next to them:  include videos, briefings and simulated lessons. Below is what the page will look like when you click on the lesson number.

The briefings are located under “read it”. The video(s) are located under “watch it”. The simulated lessons are located under “do it”.



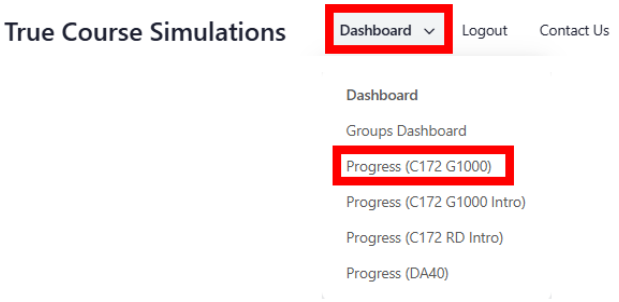
Note: there may be more than one briefing / video / simulated lesson.

The lesson lines that have this symbol next to them: ? indicate the quiz associated with what was learned in that lesson.

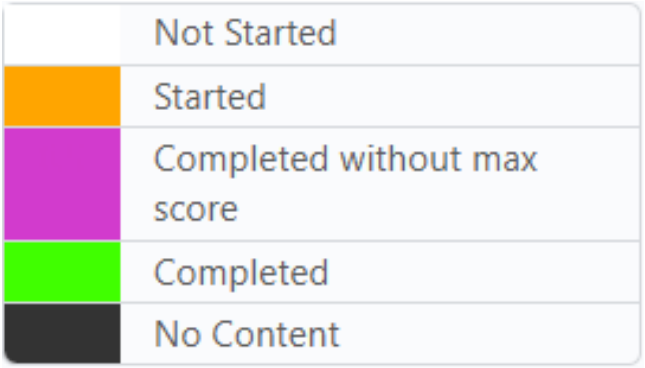


The quiz contains boxes to fill in with your answer and once completed, are graded with feedback on what you got correct/incorrect.

All this information, once completed, is recorded and can be found on the dashboard dropdown on the homepage of the website, under progress.



Under your progress page you can keep track of what you have successfully completed, started but haven't finished, or still need to start. The color-coded legend below explains what each color means:



Note: each element in each lesson can be done as many times as the student wants until the desired score is achieved.

P3D Free Flight Overview

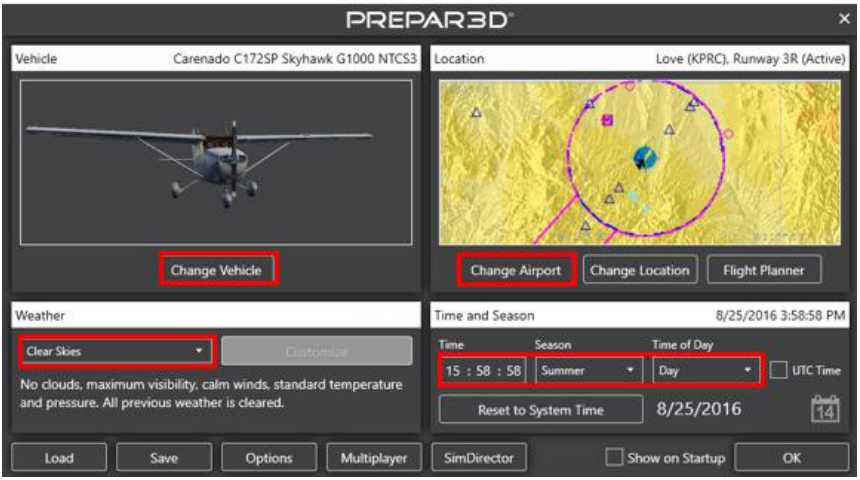
Free Flight is another option for students to practice their flying skills. Prepar3D application can be launched by double clicking the icon on the home screen. The "default scenario is what is loaded initially each time P3D is opened. In free flight,

there is no virtual instructor like in a simulated lesson from the courseware. Rather, you are free to fly however you like, and practice whatever it is you choose. You can also create your own initial conditions which allows you to save scenarios that will start in the various conditions you save them under.

For instance, if you wanted to practice the final approach and landing leg of the traffic pattern you can set up the plane on the final approach and save the scenario in that position. Once it is saved, you can load that scenario over and over and it will start you in that position each time. Below is an overview of the capabilities and tools that can be used in P3D for free flight.

Edit Scenario

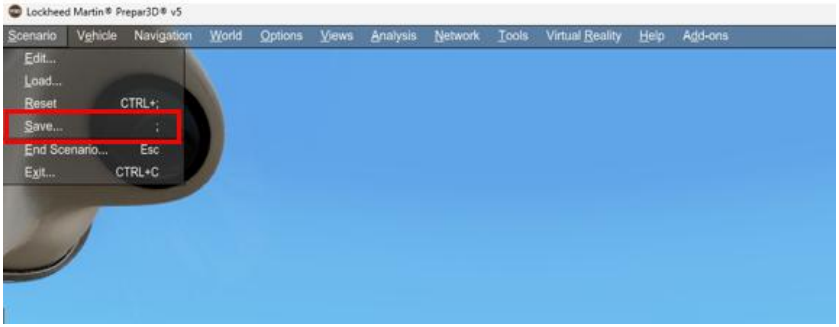
At the top left of your screen with P3D open, click on the "scenario tab" then "edit". It will open a page that looks like this:



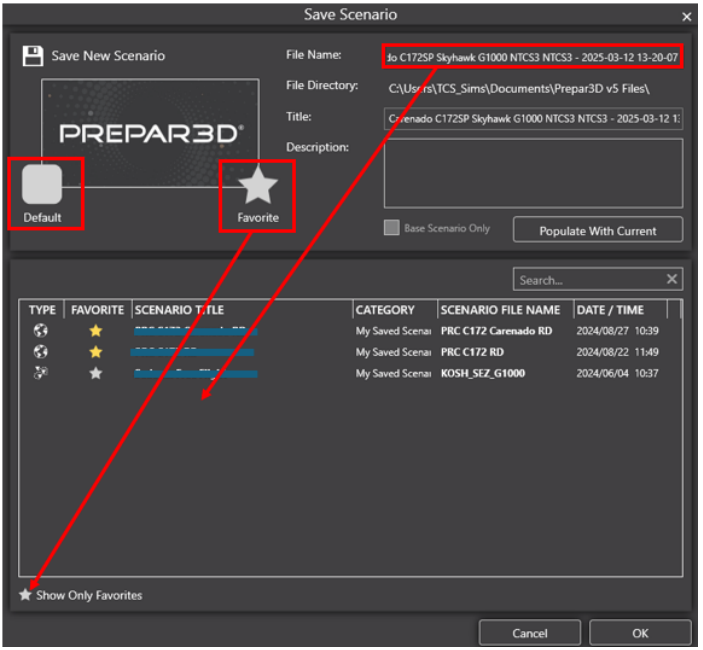
Here, you can change a variety of settings including aircraft, airport, season, time of day, and current weather. Once you have selected your desired conditions, you can click "OK" in the bottom right. This will load in the settings you have changed.

Save Scenario

Once things have loaded back into P3D, you have the option to save that scenario with the conditions you have loaded in. If you would like to save the scenario, go back to the "scenario" tab, but click on "save" this time:



This will open the following page:

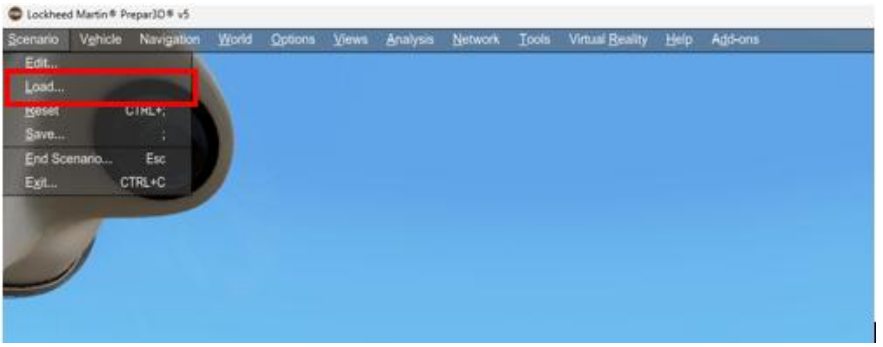


Here, you can title the scenario something fitting as described previously in the “file name” area. Once you have done this, you can click “favorite” which will star the scenario and, if desired, you can click on the bottom star “show only favorites” to only list the scenarios you have favorited. If you want to save this one as your default scenario, meaning that each time P3D is opened in free flight, this scenario will load automatically, click on the ‘default” button. Once you are happy with the selections, press “OK” at the bottom right.

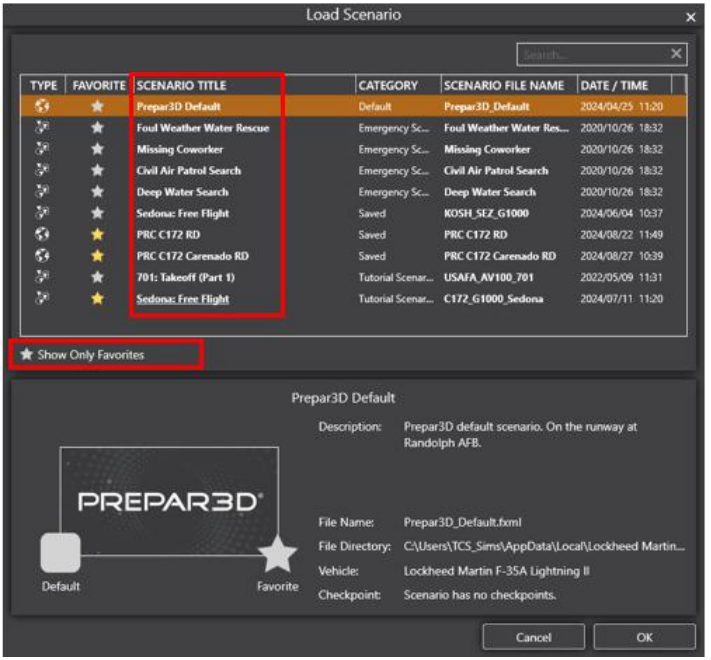
Load Scenario

Once you have saved the scenario, it will close that screen and bring you back to the simulated world. If you want to load a

new scenario, go back to the “scenario” tab, this time click on “load”.



The following page will open:



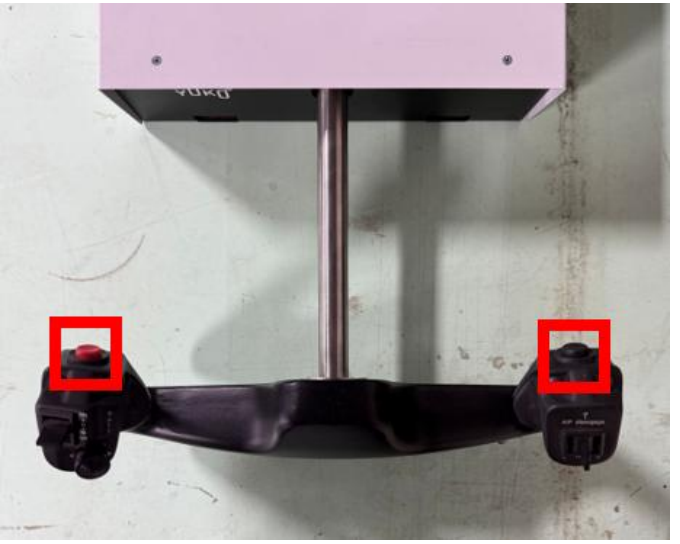
Here you can locate and click on the desired scenario you want to load. You can also narrow the search to only favorites just as previously described in the save scenario section. Once you

have the desired scenario selected, click on “OK” at the bottom right and let the scenario load.

Virtual Adjustments

Whether you’re flying free flight or a lesson from the course, you will want to make sure you’re in an accurate position in the simulation.

re-position yourself in the virtual aircraft (recalibrate origin) look straight forward with the headset on and click the black button on the right side of the Yoke. This will re-position based on the direction the headset is facing. To pause/un-pause the lesson you can either press “P” on the keyboard or use the red button on the left side of the Yoke.



If you are still not in a ideal position in the virtual aircraft, you can adjust the eyepoint using the arrow keys on the keyboard.

The up and down arrows will move you up and down respectively. The right arrow will move you forward in the aircraft and the left arrow will move you back in the aircraft.

Troubleshooting

Below are some troubleshooting guides that can help with diagnosing common problems and potentially solving them without having to contact our support team. Our support team is always available to help and will assist as soon as possible if you reach out.

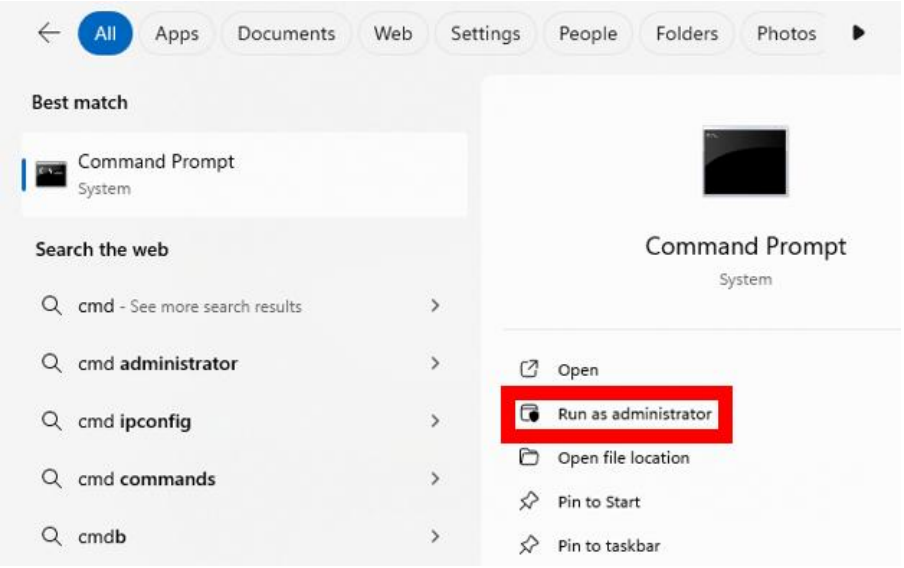
Note: for any maintenance, changes, etc., make sure the computer is thawed so progress is saved.

The best first step to any software related issue occurring is to restart the computer. The software program we use called Deepfreeze is used to maintain an image of the computer. This means that when the computer is in a frozen state (as it should remain unless one of us at True Course is working on the computer), after each restart, the computer will return to the previous state it was in before changes were made. This allows for intentional or accidental changes made to software to not be a factor in the operation of the ITD.

If a restart of the computer does not solve the issue occurring, continue through the following steps and try the various tools that may help with diagnosing the problem you are experiencing.

CMD Prompt Scripts

Open CMD Prompt. It is important that you click "run as administrator" (refer to image below).



Run the system file checker by typing the following script and clicking enter:

SFC /Scannow

Let the script run, it may take a minute or two. Once complete if it did not find any corrupt files you can close CMD prompt.

If the scan did find and replace corrupt files, type the following script and click enter:

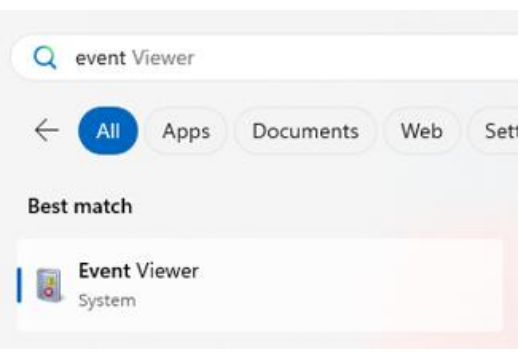
DISM /Cleanup-image /online /restorehealth

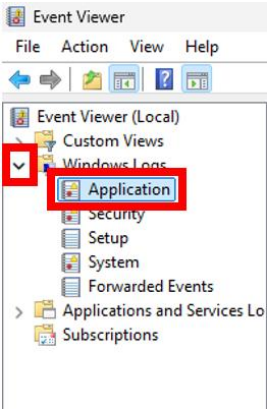
Let the script run, this will also take a minute or two. Close CMD prompt once it has completed.

Event Viewer

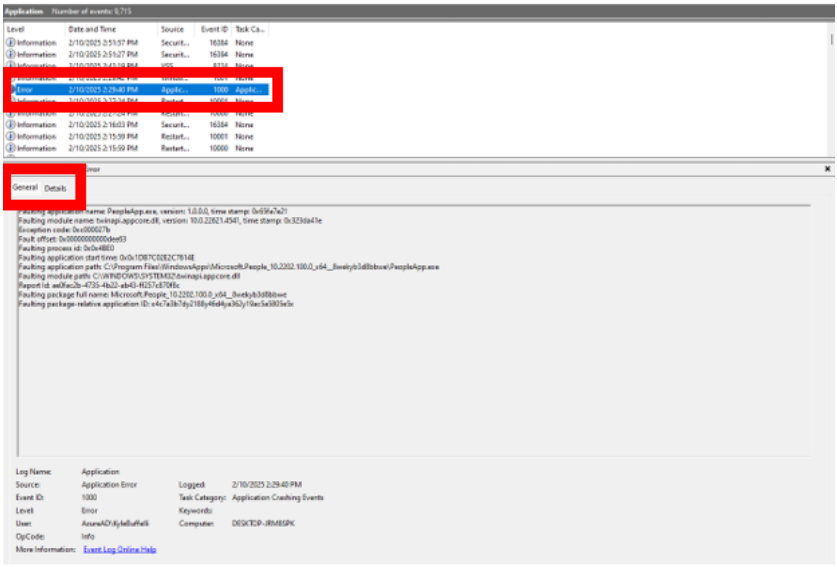
This tool can help identify possible errors occurring in the software that may be leading to or causing the issue you are experiencing. Start by opening the event viewer by searching for it in the windows search at the bottom of the screen.

Once opened, click on the windows logs dropdown (to the left) and click on application (refer to images below for help).





Here you can scroll through the various events and look for the ones labeled as Error with a red icon next to it. When you click on the event, it will populate with a description of the event and usually include an error code or identifying number (refer to image on the next page).

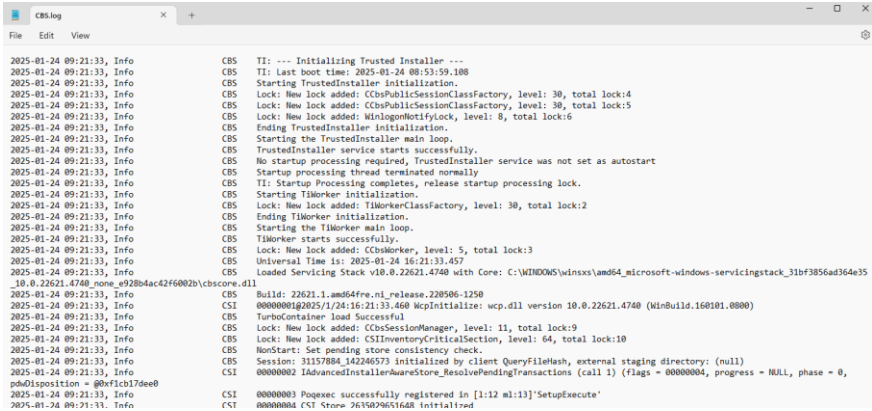


Unless you are familiar with these codes, it will not make any sense to you, but you can reach out to one of us at True Course and we will assist in troubleshooting from here.

If you are up for troubleshooting further, ChatGPT is a great resource for helping to diagnose issues. An easy way is by copying and pasting the description of the error and it will explain what could be the cause and potential ways to fix it.

Windows Logs

You can also check the Logs file for windows to see if there is any indicating messages in there. For this open file explorer on the bottom task bar and go to this location: C:\Windows\Logs\CBS and open the CBS text document. Here you can scroll to the bottom for the most recent logs. The document will look like this:

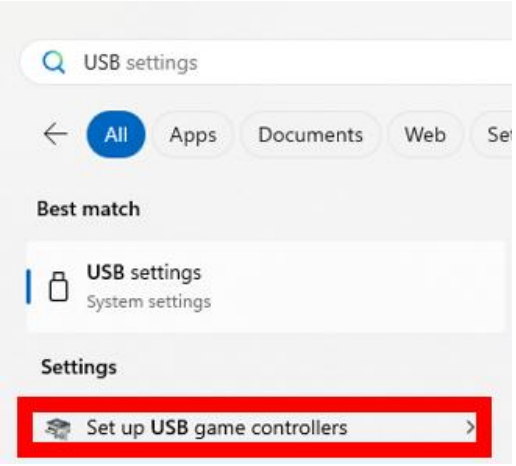


This will take a more detailed look because you will need to read the most recent lines to see if it is stating any kind of error or warning. From there, you can diagnose further on your own using ChatGPT or another source or contact True Course support and we will help with further diagnostics.

Flight Controls

The flight controls on the C172 ITD include the Yoko+ (Virtual Fly), throttle and mixture stack (Flight Sim Wings, FSW), Flap switch and Switch panel (in-house, TCS), and rudder pedals (Virtual Fly). These components are plugged into a USB hub that is in the top dashboard.

For basic troubleshooting with a flight control that is not working properly or at all, start by checking to see if the control is connected. The easiest way to do this is by opening the USB game controllers and checking to see that all the controls are showing up.



If the controller is not showing up, it may be slightly disconnected from the motherboard on the computer that is in the back of the sim. You can use the color-coded diagram below to find which color goes to which control, unplug and plug back in that USB cable, and test to see if that fixed the issue.

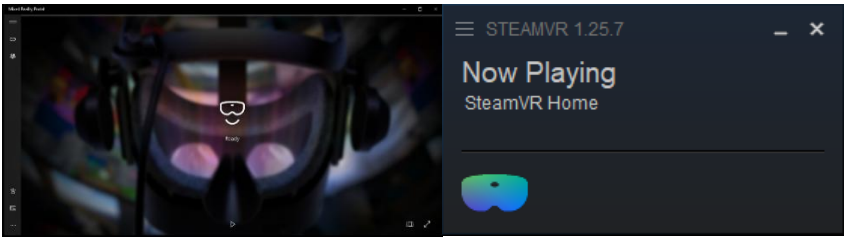
USB COLOR CODES

COLOR	DEVICE	C172	DA40	FIGHTER	LITE	COMMENTS
BLUE	YOKE / STICK	S	S	S	S	
PINK	THROTTLE	S	X	S	S	
PURPLE	SWITCHES / CONSOLE	S	S	X	S	DA40 - INCL. THROTTLE
RED	FLAPS	S	S	X	S	DA40 - INCL. DASH SWITCHES
YELLOW	RUDDERS	S	S	S	O	
GREEN	D-BOX	S	S	S	X	
WHITE	HOBBS SWITCH	S	X	X	S	
ORANGE	VR	S	S	S	S	
BLACK	EXTEND / HUB	S	S	O	X	

S - STANDARD O - OPTIONAL X - NOT APPLICABLE

Headset – HP Reverb G2

The first step for headset troubleshooting is to ensure that the headset is being recognized by the computer. SteamVR should indicate “now playing” and Windows Mixed Reality Portal should indicate “ready” (refer to image below).

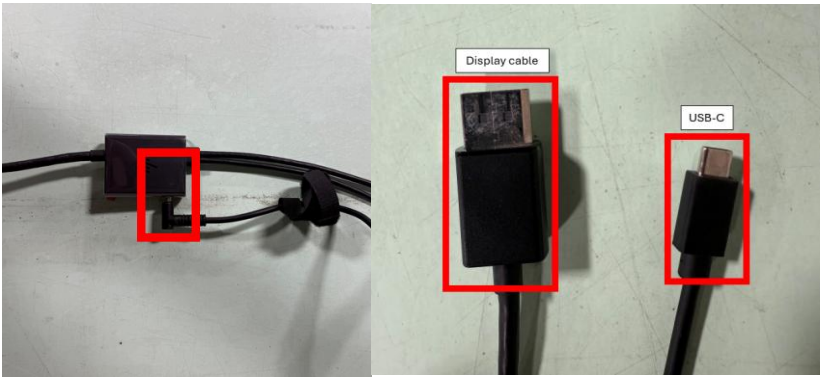


If those indications do not match, the most common problem with the headset is the power cord disconnecting by being accidently pulled from its port (this can happen if the headset is adjusted quickly and there is not enough slack in the headset power cord). Check the connection of the power cord to the headset (refer to image below) and push it all the way. The computer will make a sound indicating it has detected the headset. The HP logo on the front will be lit of white if the headset is receiving power.

The HP reverb uses a link box that connects the computer to the headset and power to the headset. This link box is found inside of the simulator and is most easily accessed by removing the switch panel control using a 3/32 allen key to remove the four bolts holding it in place.

First check that the power is connected to the link box (refer to image below). Also check that the USB-C cable and display cable are plugged into the motherboard and GPU respectively.

Note: the USB-C cable may be hard to see at first because it is under the other USB cords plugged into the motherboard.



TCS Support

Main Support Contact

Support@tcsims.com

+1 (928) 800-5960 (this number will ring all three support team contacts)

Support Team Contacts

AJ Smith (Director of Customer Success) | Aj@tcsims.com | +1-928-547-0762

Cannon Smith (Director of Technology) | Cannon@tcsims.com | +1 928-547-0764

Kyle Buffelli (General Manager) | Kyle@tcsims.com | +1-928-547-0766

Support & Maintenance

For support and maintenance on each ITD deployed we used two main pieces of software that helps us manage the numerous computers deployed across various parts of the world. Below is an overview of how they work and how we utilize their capabilities to support our customers.

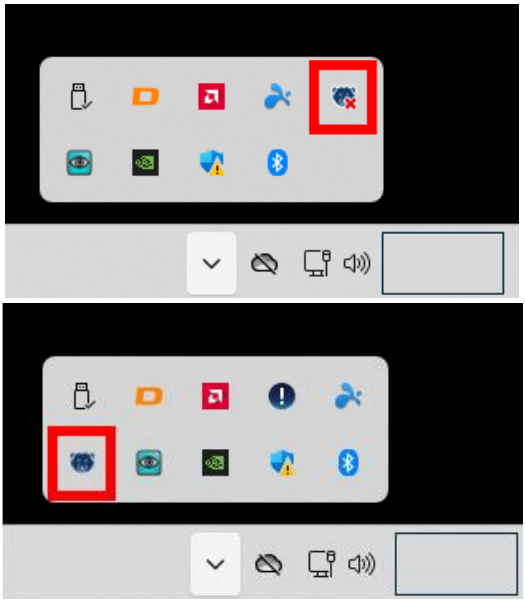
DeepFreeze

Deep Freeze is a system restore software developed by Faronics. It's designed to protect and preserve computer configurations by "freezing" the desired system setup. When Deep Freeze is activated on a computer, any changes made during a user session, whether files are downloaded, settings altered, or malware is introduced, are completely wiped out

upon reboot. The system is restored to its original, frozen state, like nothing happened.

Remember that any changes you make will not be saved unless the computer is thawed first. This software is password protected and allows our maintenance team at TCS to “thaw” the computer which then allows changes to save.

You can determine the state that the computer is in (thawed or frozen) by checking the application center from the arrow in the lower right-hand corner of the screen (refer to image below). The bear icon with the red x on it indicates the computer is thawed (changes made to the computer will save). The bear icon with no x indicates frozen (changes made to the computer will not save).



Maintenance Period

The Maintenance Period is a scheduled window of time when Deep Freeze temporarily "thaws" (disables its protection) so that updates, patches, installations, or system maintenance tasks can run and save after a reboot. When the maintenance period ends, the system can automatically re-freeze itself, preserving any legitimate changes made during that window.

These updates can include but not limited to:

- Windows updates
- Application updates
- Cleanup scripts or scheduled tasks

These maintenance periods are set by us at the backend, usually during the middle of the night, so it does not affect the use of the ITD. It all aims to keep your ITD automatically up to date, so it does not interfere with your use.

Splashtop

Splashtop Remote Support is remote access and management software designed for IT professionals, managed service providers (MSPs), and businesses. It allows IT teams to remotely access, monitor, and manage computers and servers from anywhere, without needing to be physically present at the machine.

This is the main remote desktop tool that we utilize to quickly and efficiently help customers with software or hardware troubles on their ITD. Most software related issues can be solved by us remotely due to this program. This also allows us

to quickly handle support calls since we can assist from essentially anywhere in the world if we have a Wi-Fi connection on both ends. This allows us to perform tasks such as file transfers, remote reboot, downloads, updates and more.