

Green Castle Aero Club Foundation



Green Castle Advanced Aviation Training Device (AATD)

INSTRUCTOR'S OPERATOR STATION (IOS) MANUAL

2154 250th St NW,
Oxford, IA 52322

<https://www.greencastleaeroclubfoundation.org/>

Attention: Meindert Niemeijer

Email: gcacsim@gmail.com

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Revision #1

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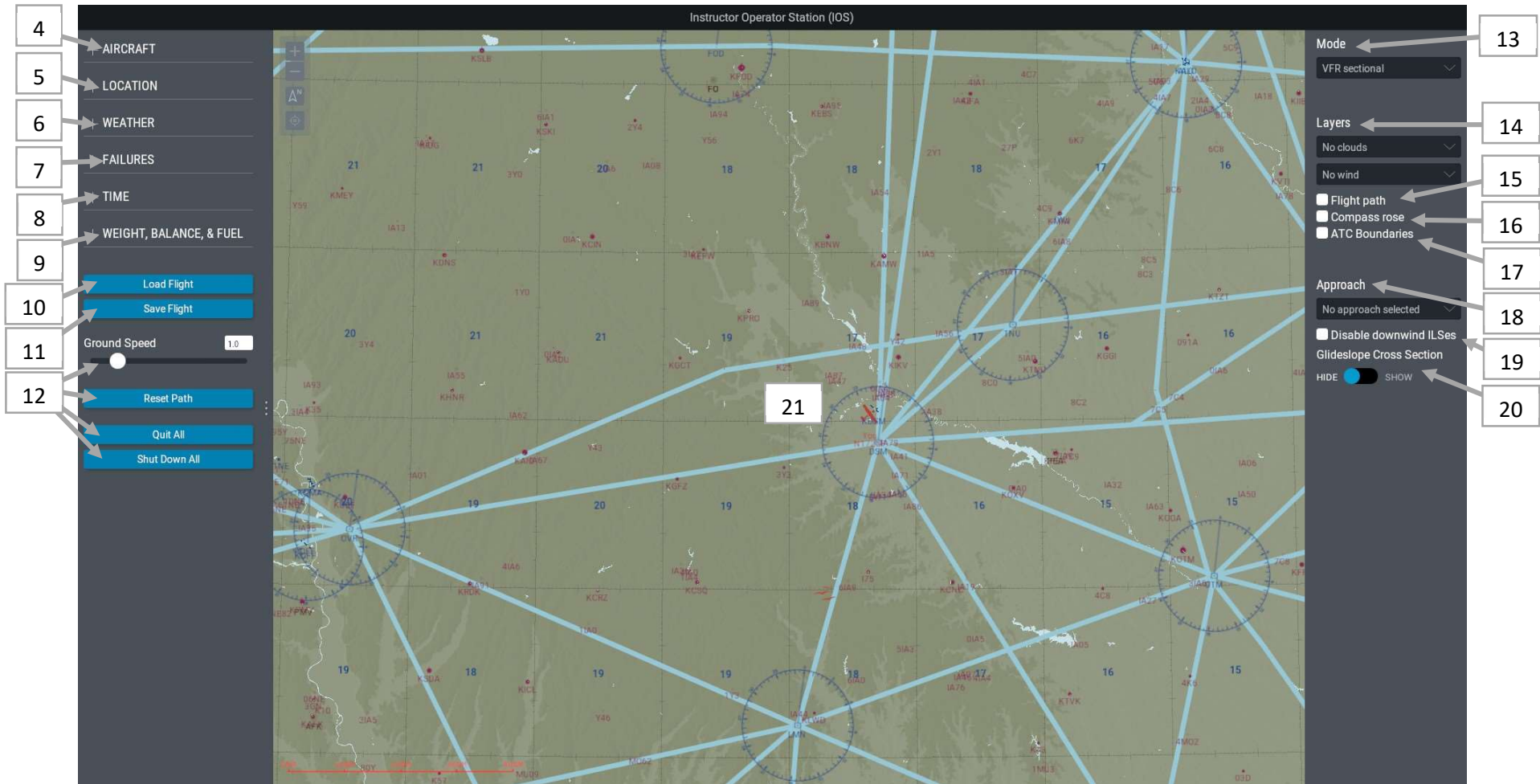
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2. Log of Revisions

| Description of Changes | Revision | Affected Pages | Edited By |
|------------------------|----------|----------------|-----------|
| Initial Version | 1 | All | MN |
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3. Instructor Operator Station Layout



In the Figure above, the relevant manual Section numbers are shown for every part of the IOS graphical user interface.


4. Introduction

The Instructor's Operator station (IOS) is the command center of the training device. From here, you can perform many custom functions, including aircraft setup, initial position selection, replay a flight, induce aircraft failures, change weather parameters, and many more. You will probably spend more time using this page than any other.

Section 2 of this guide shows a screen shot of the X-Plane 12 IOS. The IOS is divided into 19 main instructor functions:

| Left Side | Right Side |
|---------------------------|----------------------------|
| ➤ Aircraft | ➤ Mode |
| ➤ Location | ➤ Layers |
| ➤ Weather | ➤ Flight Path |
| ➤ Failures | ➤ Compass Rose |
| ➤ Time | ➤ ATC Boundaries |
| ➤ Weight, Balance, & Fuel | ➤ Approach |
| ➤ Load Flight | ➤ Disable Downwind ILSes |
| ➤ Save Flight | ➤ Glideslope Cross Section |
| ➤ Ground Speed | |
| ➤ Reset Path | |
| ➤ Quit All | |
| ➤ Shut Down All | |


5. Aircraft

The Green Castle AATD only supports a single aircraft, the “Cessna Skyhawk.” This model aligns closest with Green Castle’s Cessna 172SP simulator cockpit. If you have selected a different aircraft by mistake, you can change back to the supported aircraft using the Aircraft menu. Click ‘+’ to see your current aircraft. Click  to see the “Search” box. Once you have selected the “Cessna Skyhawk” aircraft model, click on the “Change Aircraft” button.

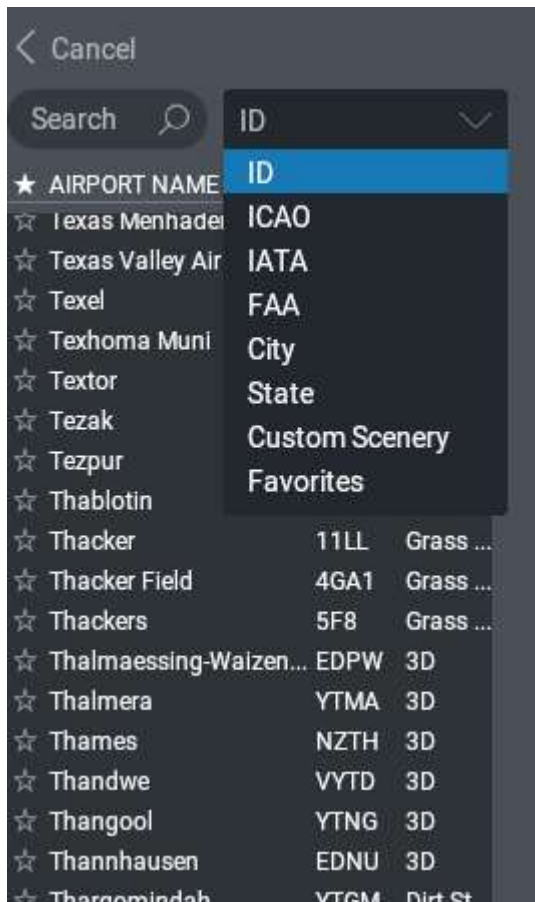


Note that the “Change Aircraft” button is at the bottom of the screen.

6. Location

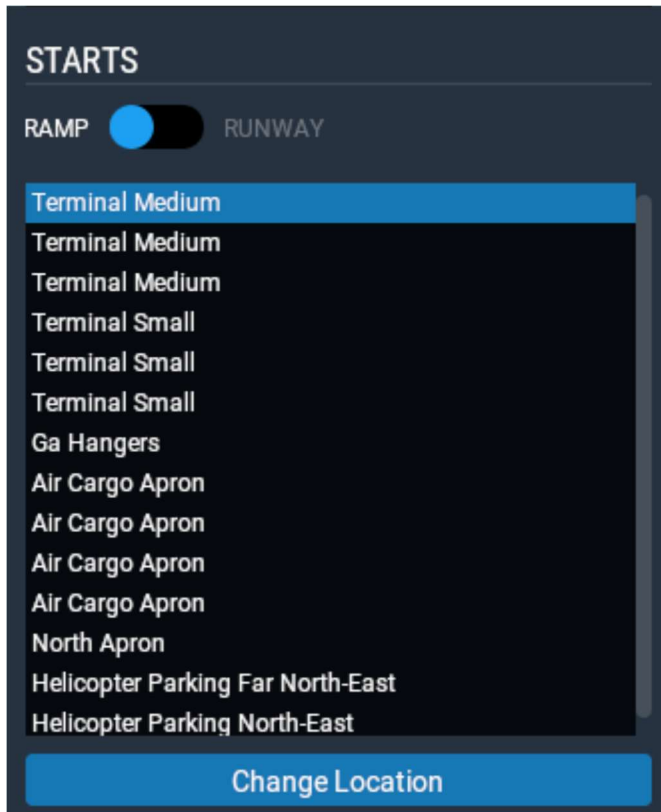
The Location menu will allow you to see and change your current location. Click '+' to see your airport or the one you took off from. Click  to see the "Search" box and collapsed drop down menu.

Use the drop-down menu to select the type of search you wish to perform. On this sample we searched by ID. X-Plane will list the available "Ramps" or "Runways" for that airport based on the position of the "Starts" toggle.



6.1. Starts Selection


Within “Starts,” toggle between “Ramp” and “Runway” for the corresponding list of available starting locations. Click on your chosen starting location in the list, and then click the “Change Location” button at the bottom of the window to move the aircraft. In the following example, the aircraft would start the simulation scenario on the “Terminal Medium” “Ramp” position.



Similarly, to start on a “Runway,” click the slider to “Runway” and then select a runway from the list. Also available in the “Runway” toggle position is an option to start the aircraft on a 3 nm or 10 nm approach. To do this, click on the drop menu under the “Ramp/Runway” toggle and make your selection. Click the “Change Location” button at the bottom of the window to move the aircraft. The following images show a “Runway 09” start (left example) and the drop-down menu for selecting “On runway,” “3 nm approach,” or “10 nm approach” (right example).



7. Weather

The “Weather” menu will allow you to see and change your current weather. Click '+' to see the “Current” weather. Click  to see the list of different weather-related features you can change. After making changes, you must click on the [Change Weather](#) button on the bottom of the page to apply the new weather.

7.1. Quick Set

“Quick Set” allows you to select preset conditions. Click '+' to show the menu, then click the drop-down menu to select from the list. After selecting one of the preset conditions, click the [Change Weather](#) button.



Descriptions of “Quick Set” Conditions:

- *Clear* – clear skies; winds calm; visibility 25 sm
- *VFR Few Clouds* – sunny skies with a few clouds; winds calm; visibility 20 sm
- *VFR Scattered* – scattered clouds (additional cloud layers); light winds; visibility 25 sm
- *VFR Broken* – broken cloud layer with other prominent cloud layers; more wind; visibility 20 sm
- *Marginal VFR Overcast* – 2,000 ft ceiling; gusting winds; visibility about 4 sm
- *IFR Non-Precision* – weather fitting for a non-precision approach; 400 ft ceiling; visibility 5 sm
- *IFR Precision* – weather fitting for a Category-I ILS approach; 200 ft ceiling; 2,400 ft RVR
- *Convective* – adds severe precipitation; 2,000 ft ceiling; visibility 25 sm
- *Large-Cell Thunder-Storms* – adds heavy precipitation and storms; 2,000 ft ceiling; visibility 25 sm

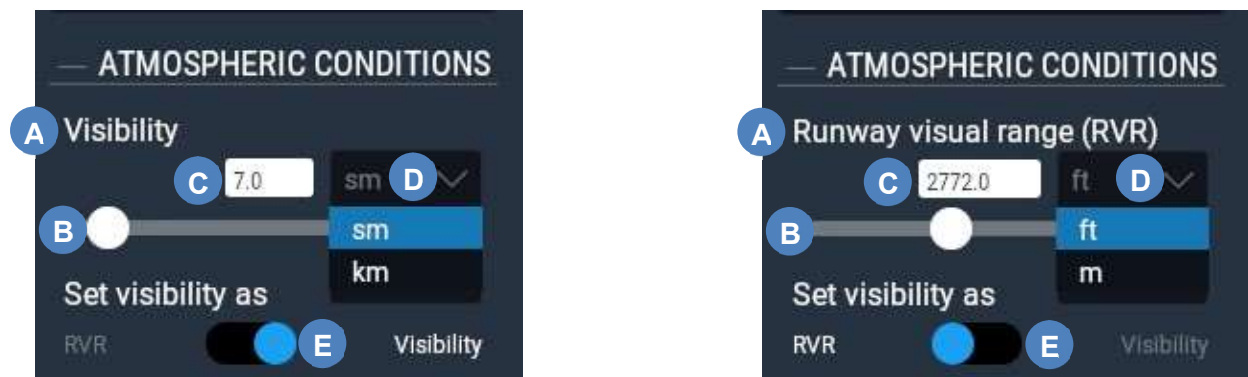
7.2. Atmospheric Conditions

“Atmospheric Conditions” allows you to configure the different parts of the atmosphere. Click '+' to show the options for “Visibility,” “Precipitation,” “Storminess,” “Temperature,” and “Barometric Pressure.”

After selecting the changes, click the [Change Weather](#) button to apply the new settings.

7.2.1. Visibility

The “Visibility” section allows visibility customization.



The visibility section as shown in Figures 1 and 2 above have the following functions:

| | |
|-----------------------------------|--|
| A. Current Visibility Setting | Changes from “Visibility” to “Runway visual range (RVR)” depending on the “Set visibility as” toggle (E) |
| B. Visibility Distance Adjustment | Slider adjusts visibility distance |
| C. Visibility Setting Readout | Current visibility setting based on slider (B) position |
| D. Unit Selector | Choose statute miles (sm) or kilometers (km) for visibility, or feet (ft) or meters (m) for RVR |

E. "Set visibility as" Toggle

Toggle between "RVR" and "Visibility"

7.2.2. Precipitation

The "Precipitation" slider allows adjustment between "None," "Light," "Moderate," "Heavy," and "Severe." After setting the slider in the preferred position, click on the [Change Weather](#) button to apply the new setting.

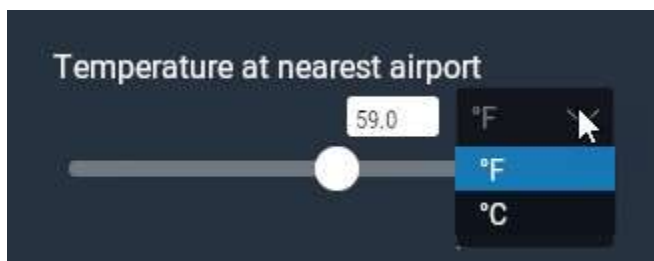


7.2.3. Storminess

The "Storminess" slider allows adjustment between amounts of storm cells including "None," "Light," "Moderate," "Heavy," and "Severe." Moving this slider will also move the precipitation to the same level. You can set the storminess lower than precipitation but not higher. After setting the slider in the preferred position, click on the [Change Weather](#) button to apply the new setting.

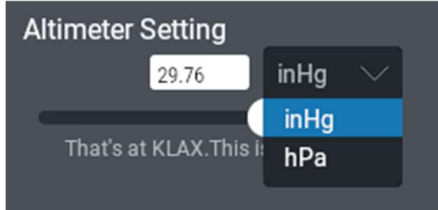
7.2.4. Temperature at Nearest Airport

The "Temperature at nearest airport" slider allows adjustment to the temperature range from -10°F to 125°F (-23.3°C to 51.7°C). You can also click on the box to manually enter the temperature. You can set temperature as precise as one decimal. Temperature range when typing is -459.7°F to 18,032.0°F (-273.1°C to 10,000.0°C). After setting the slider or typing in the temperature click on the [Change Weather](#) button to apply the new setting.



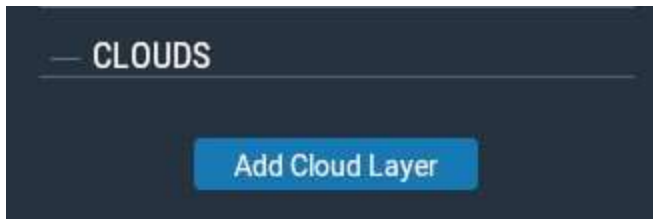
7.2.5. Altimeter Setting

The “Altimeter Setting” slider allows adjustment of the barometric pressure setting. The slider range is 29.00 to 32.00 Inches of mercury (inHg) or 982 to 1084 Hectopascal (hPa). You can also manually enter the barometric pressure setting in the box. The range when typing is 0.00 to 7500.00 inHg or hPa.

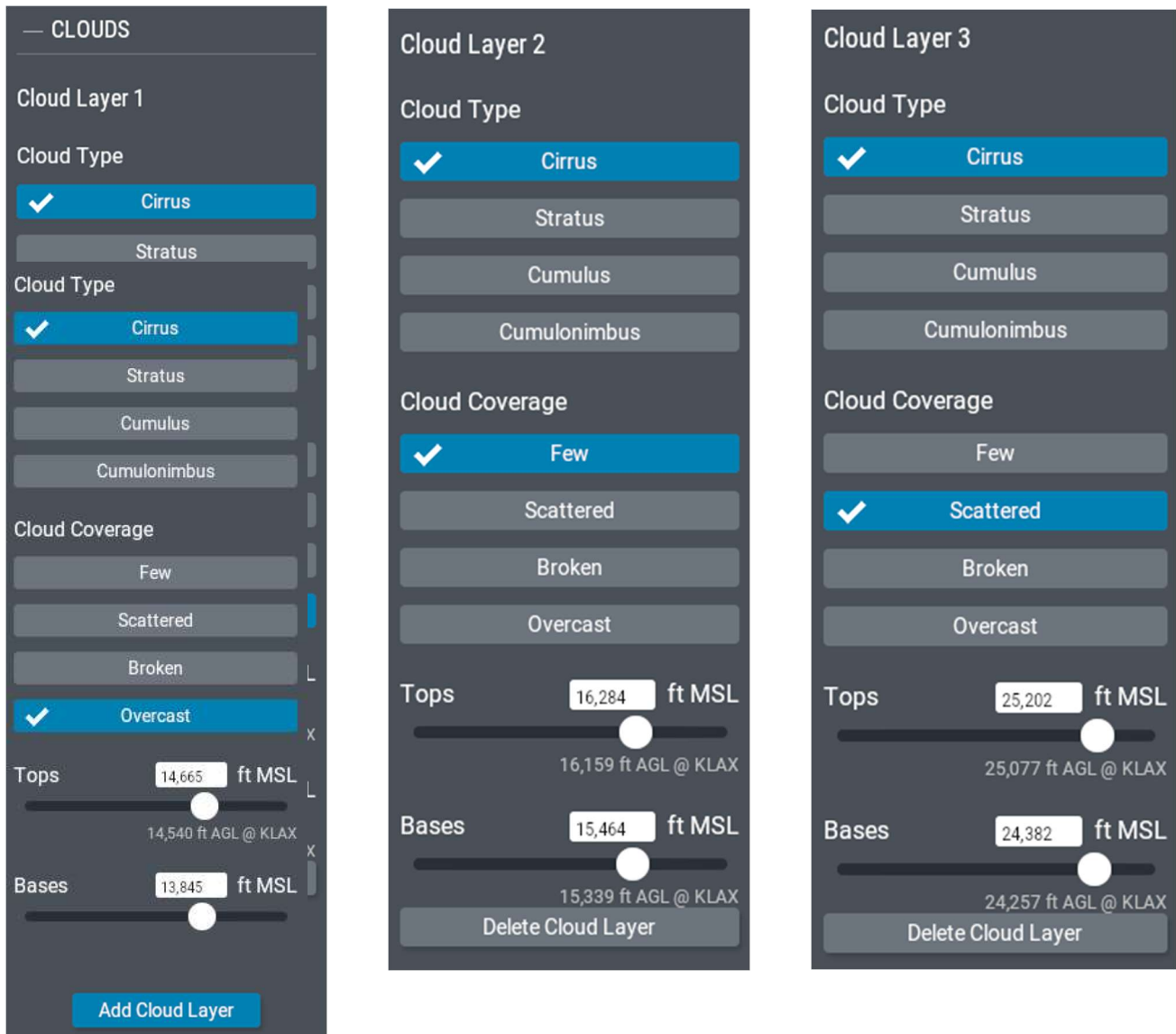


7.3. Clouds

“Clouds” allows inserting/modifying up to 3 different cloud layers. Click '+' to show the menu. If no cloud layers exist, click the “Add Cloud Layer” button.



Pre-existing cloud layers are listed first, followed by the “Add Cloud Layer” at the bottom. This button will not be shown if the maximum 3 cloud layers already exist. Click the “Delete Cloud Layer” button to remove the corresponding cloud layer.



Cloud layer columns are order lowest (left) to highest (right). Therefore, “Cloud Layer 1” is closest to the ground and “Cloud Layer 3” is the highest. Cloud layers are separated by a minimum of 2,000 feet.

7.3.1. Cloud Type and Coverage

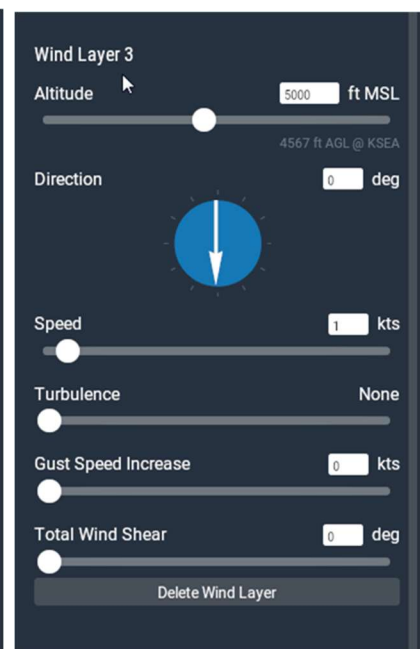
Each cloud layer has a “Cloud Type” and “Cloud Coverage.” Check marks reflect your selections.

Cloud altitude “Tops” and “Bases” can be set by using the slider or by manually entering them into the boxes. If your selection or entry exceeds the minimum or maximum thickness, X-Plane will automatically adjust them to within limits.

Remember to click on the **Change Weather** button to apply the new cloud settings.

7.4. Wind

“Wind” allows inserting/modifying up to 3 different wind layers. Click '+' to show the menu. Click “Add Wind Layer” to add a layer or “Delete Wind Layer” to remove the corresponding layer.

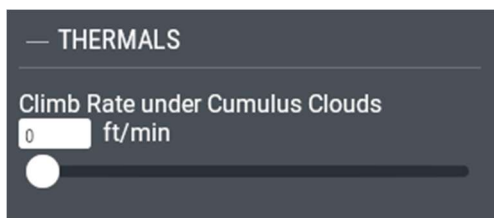


7.4.1. Wind Adjustment

Each wind layer allows custom adjustments to “Altitude,” “Direction,” “Speed,” “Turbulence,” “Gust Speed Increase,” and “Total Wind Shear.” Adjustments are made using the slider or by manual entry into the associated boxes. Remember to click on the **Change Weather** button to apply the new settings.

7.4.2. Thermals

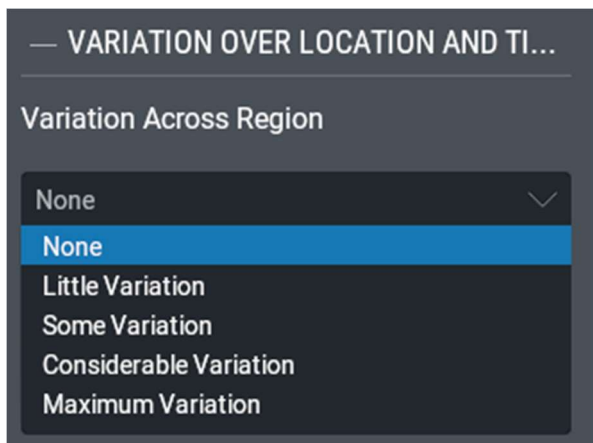
“Thermals” settings are mainly used for glider operations and are less relevant for the Green Castle AATD. Similarly, X-Plane runs air up and down terrain (such as mountains) to simulate effects that glider pilots must take into account.



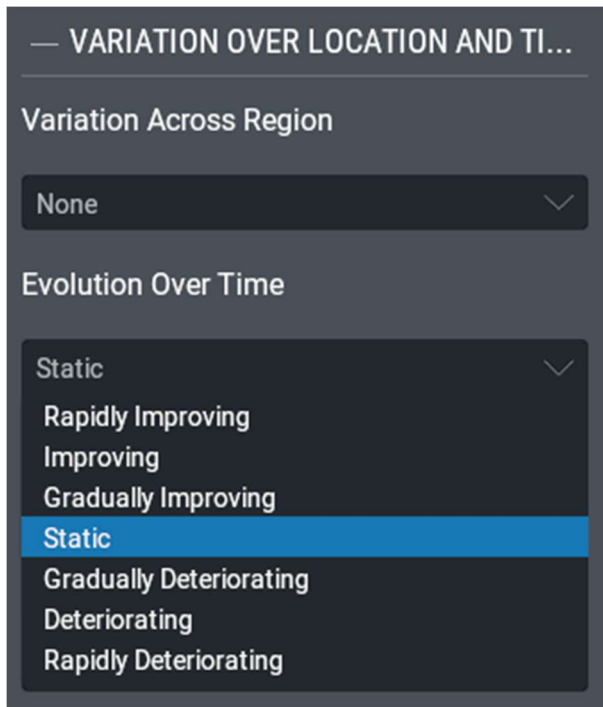
“Climb Rate under Cumulus Clouds” may be adjusted using the slider or by manual entry in the box.

7.5. Variation Over Location and Time

By changing the rate of “Variation Across Region,” it is possible to increase the number of varying weather patterns experienced over a geographical area. These weather patterns vary randomly, so you do not have exact control over what or where they may appear.

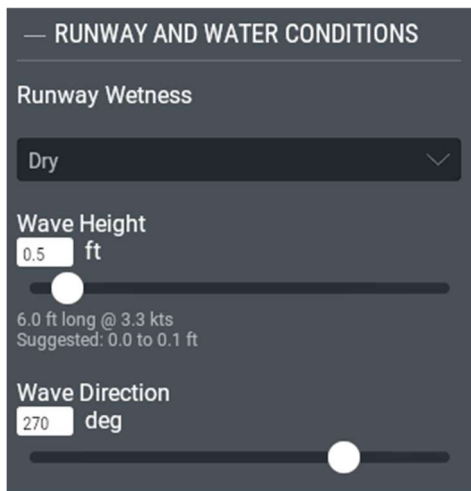


“Evolution Over Time” allows you to select how quickly the local weather changes and in what direction. To prevent weather from changing, use the default setting, “Static.”



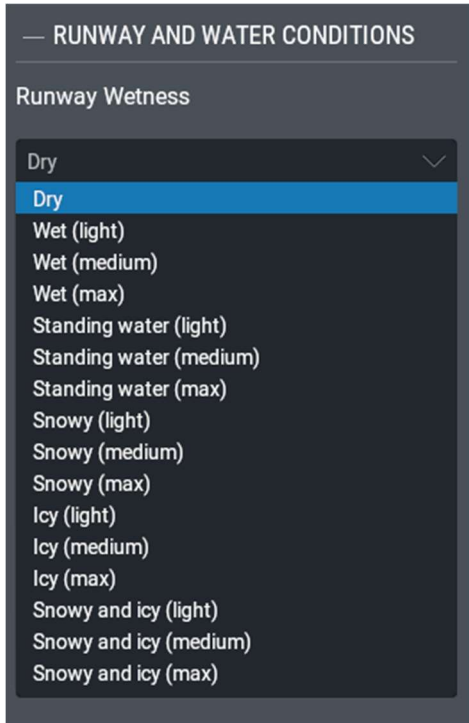
7.6. Runway and Water Conditions

“Runway and Water Conditions” allows for setting the state of the runway. “Wave Height” and “Wave Direction” are for bodies of water (mainly for floatplanes), and not relevant for the Green Castle AATD. “Runway Wetness” is the only necessary control for specifying the state of the runway.




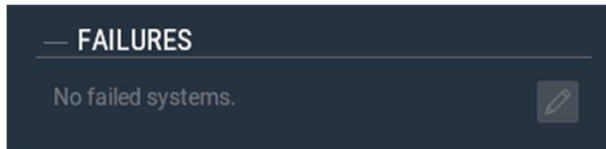
The water condition parameters (“Wave Height” & “Wave Direction”) can be adjusted by using the sliders or manual entry into the boxes.

There are several options for “Runway Wetness.” Each of which influences the way the aircraft interacts with the runway surface. For example, it will be more difficult to stop on an icy surface.



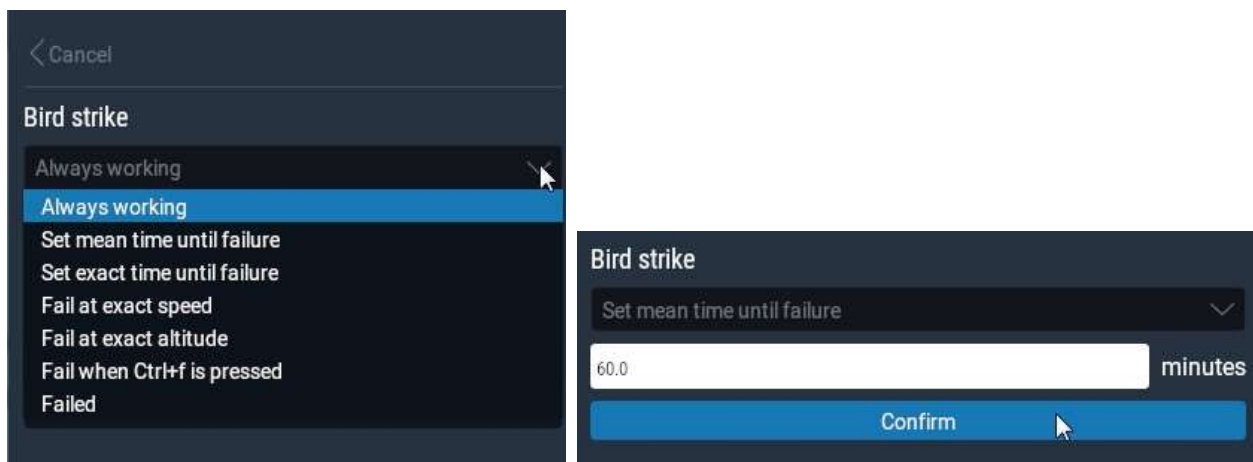
8. Failures

The “Failures” menu allows you to manipulate failure modes. Click '+' to see the current failure list. Click  to see the list of categories of possible failures. After making changes, you must click on the **Apply Changes** button at the bottom of the page to apply the failures.



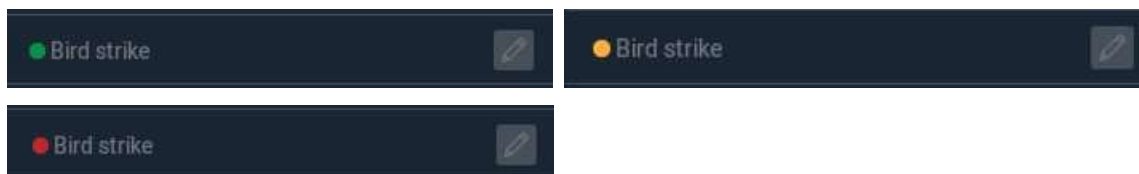
8.1. Failure Modes

Every failure option has six failure modes. After selecting a mode, you must click on “Confirm” to accept the selection.



8.1.1. Item status

After setting a failure, a colored dot will indicate the actual status of item to be failed. A green dot (●) indicates *always working*, an amber dot (●) indicates the failure is *armed to fail* and a red dot (●) indicates the failure has *occurred and is active*.



8.2. Failure Categories

There are eight failure categories and each is listed below. Items listed in each category are examples of those that can be failed.

8.2.1. World

Failures for VASI / PAPI lights, Runway Lights, Bird Strike, and Microburst.

8.2.2. Systems

Failures of various systems, including subcategories - Controls (flight controls), Electrical, and Lights.

8.2.3. Instruments

Failures of specific instruments, including subcategories - Engine, G430, Navigation, Primary, and Sensors (i.e. pitot tube blockage or fuel quantity sensor).

8.2.4. Engines

Failures of engine-related items, including subcategories:

- Accessory – Throttle, etc.
- Failure - Engine fire, engine separation, etc.
- Fuel/Air - Engine driven fuel pump, fuel flow fluctuation, etc.
- Prop - Engine drive shaft, etc.
- Start – Starter, magneto, etc.
- Wings - Removal of wings and stabilizers
- Control Surfaces - Locking of control surfaces (i.e. left aileron hard over, rudder hard over, etc.)

8.2.5. Multi Rotors

These failures apply to helicopters, and are not applicable to the Green Castle AATD.

8.2.6. NAVAIDs

Failures of navigational aids, such as VOR, NDB, ILS, etc. This list automatically changes based on your current position.

8.2.7. Set mean time until failure

When selected, failure can occur anytime between clicking to “Confirm” the failure and the maximum number of minutes you enter. For example, if you enter 15 minutes and click “Confirm,” the selected failure will occur sometime between when that button was clicked and up to 15 minutes after.

8.2.8. Set exact time until

When selected, the failure will occur at the specific time you entered.

8.2.9. Fail at exact speed

When selected, the failure will occur when indicated airspeed matches the speed you entered.

8.2.10. Fail at exact altitude

When selected, the failure will occur when the aircraft is at the same altitude (in AGL) as you entered.

8.2.11. Fail when Ctrl+f is pressed

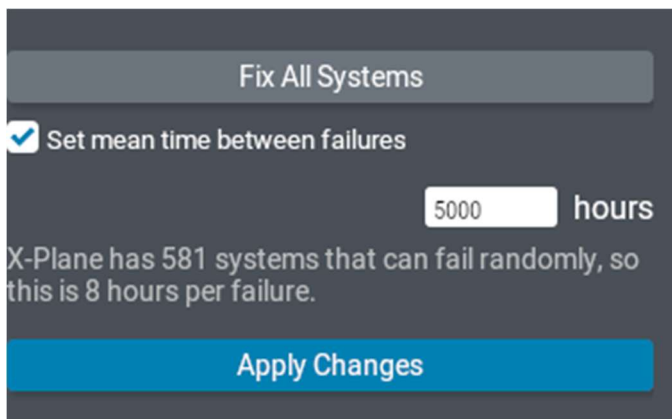
When selected, you can activate the failure by pressing the “CTRL” key and “f” key at the same time. This option is useful for simulating compound emergency situations or failing multiple items simultaneously.

8.2.12. Failed

When selected, the failure will occur immediately.

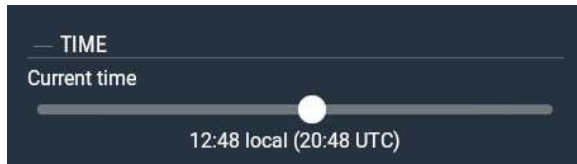
8.3. Fix All Systems and Set Mean Time Between Failures

Clicking the “Fix All Systems” button resets all systems to operational. Do not forget to click the **Apply Changes** button to confirm. The “Set mean time between failures” check box, enables random system failures within a given timespan. In the box, you may enter a specified amount of time that you wish to experience failures in the aircraft. In the example below, entering 5,000 hours for a fixed 581 systems that X-Plane can fail, the actual time for (or between) each failure is approximately 8 hours.



9. Time

The “Time” slider changes the time of day. Local time is based on the current position of your airplane. So, if your plane is in New York City, the local time is based on the eastern time zone while if your plane is located in Los Angeles, the local time is based on the pacific time zone. The X-Plane software takes care of converting the local time to Zulu time and the other way around.



10. Weight, Balance, & Fuel

“Weight, Balance, & Fuel” allows direct modification to Center of Gravity (CG) as well as adjustments to Payload Weight (including occupants and baggage) and Fuel Weight (with left & right tanks). The “Show Units In” toggle includes “US Customary” (lbs) or “Metric” (kg).

NOTE: CHANGES MADE HERE ARE IMMEDIATELY EXECUTED

— WEIGHT, BALANCE, & FUEL

Show Units In: US Customary (selected) Metric

Center of Gravity: +6.9 inches

Total Payload Weight: 589.5 lbs

Pilot: 182.5 lbs

Copilot: 127.6 lbs

Left Rear Pax: 104.4 lbs

Right Rear Pax: 104.4 lbs

Baggage: 69.6 lbs

Aft Baggage: 1.0 lbs

Total Internal Fuel Weight: 171.5 lbs

Left: 85.7 lbs

Right: 85.8 lbs

Holdover Time (Ground de-icing): 0 min

Reset Weight & Balance

— WEIGHT, BALANCE, & FUEL

Show Units In: US Customary Metric (selected)

Center of Gravity: +17.6 centimete...

Total Payload Weight: 267.4 kg

Pilot: 82.8 kg

Copilot: 57.9 kg

Left Rear Pax: 47.4 kg

Right Rear Pax: 47.4 kg

Baggage: 31.6 kg

Aft Baggage: 0.5 kg

Total Internal Fuel Weight: 77.8 kg

Left: 38.9 kg

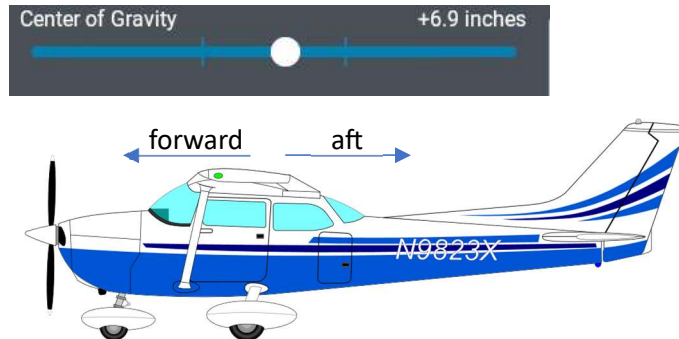
Right: 38.9 kg

Holdover Time (Ground de-icing): 0 min

Reset Weight & Balance

10.1. Center of Gravity

The “Center of Gravity” (CG) slider adjusts the position of the aircraft’s CG.



The system defaults CG to a neutral position. Sliding right (increasing) moves the CG aft while sliding left (decreasing) moves it forward.

The vertical indicators on the slider indicate the aft and forward CG limits. It is possible to configure the aircraft so it is out of CG limits. This is an effective way to illustrate overloading or incorrect loading of an aircraft and the resulting performance effects.

Note that the simulator adjusts the weights in the various positions (described in detail below) to change the CG. This does mean that some positions of the CG are not possible to attain, simply because there is not combination of weights in the various stations that would allow that CG to be attained. You will notice that when you move the CG slider it is not smooth as it jumps from configuration to configuration. To simulate a particular loading of the aircraft, it is better to adjust the loads for each individual station as described in the next sections.

10.2. Total Payload Weight

The “Total Payload Weight” slider or manual entry adjusts the aircraft’s overall payload weight by distributing it between the pilot, co-pilot, passengers, and baggage.

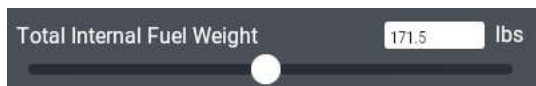


Alternatively, you can adjust the individual weights of the pilots, passengers, and baggage via sliders or manual entry. The “Total Payload Weight” will automatically adjust based these adjustments.



10.3. Total Internal Fuel Weight

The “Total Internal Fuel Weight” slider adjusts fuel weight to all tanks at the same time.

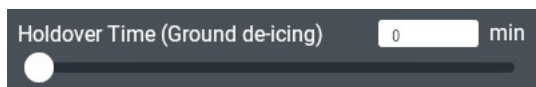


You can also adjust the individual fuel tanks using the sliders or manual entry. The “Total Internal Fuel Weight” will automatically change to reflect these settings.

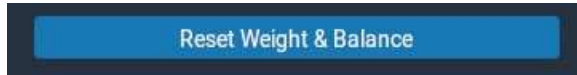


10.4. Holdover Time

The “Holdover Time” setting allows you to control the amount of time deicing fluid will stick to your plane and prevent icing. More precisely, It is the estimated time deicing/anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft. Holdover time begins when the final application of deicing/anti-icing fluid commences and expires when the deicing/anti-icing fluid applied to the aircraft loses its effectiveness. While de-icing the simulator plane is possible, this is not a common occurrence in real-life Cessna 172 flying.



10.5. Reset Weight and Balance

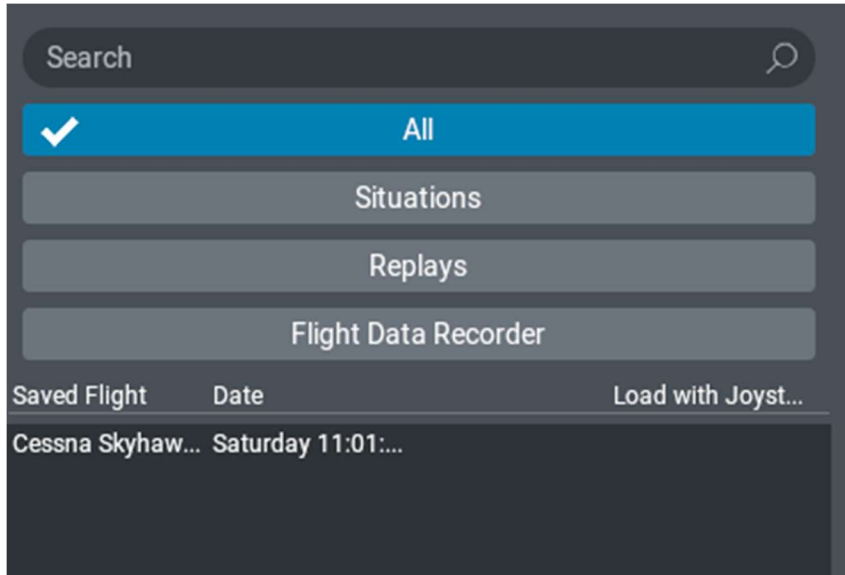


Clicking the “Reset Weight & Balance” button sets the following conditions:

- Total Internal Fuel Weight slider to 50 percent, midpoint
- Center of Gravity (CG) to neutral, midpoint
- Total Payload Weight to within about 5 percent of maximum allowable weight

11. Load Flight

The “Load Flight” button allows you to find and load “Situations,” “Replays,” and “Flight Data Recorder” information. Clicking any of these options opens a search screen which shows related file type.



- “All” - all available file types
- Other buttons – specific file types only (corresponding to the button clicked)

After selecting the file, click the “Load Selected Flight” button:



11.1. Flight File Types

There are three different ways to save flights:

- **Situations:** Saved flight simulator settings, including weight loading, position, failures, etc. For example, if the aircraft is flying in IMC, located 5 nm south of KCID at 5,000 ft with a failed altimeter; that can be saved into a situation file. This is a great way for setting up specific training scenarios. For instance, a situation file with an aircraft on a 45 degree vector to intercept a localizer course can be loaded to fly an approach under the same conditions again and again.
- **Replays:** Precise recordings of everything that happened during a flight. When you load a replay file, the simulator essentially functions as a playback device with the ability to jump to any point in the flight, replay it in real time, or speed it up or down as needed. Controls to do this, similar to the controls of a media player are shown on screen.
- **Flight Data Recorder:** Files containing information that can be exported from and imported on other simulators or even from a real airplane “black box” for accident investigations. These files are not relevant to the use of the Green Castle AATD as a training device.

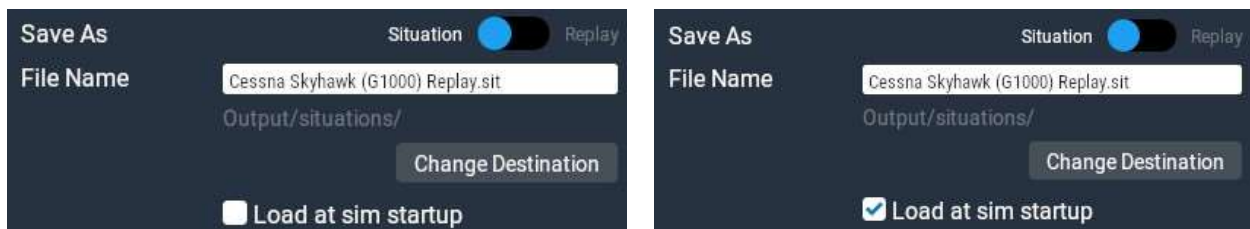
12. Save Flight

“Save Flight” is used to save “Situations” and “Replay” files.

12.1. Save As: Situation

Saving the situation allows creating a flight scenario and starting point for quick recall. This is a very convenient training tool for effective, specific scenarios that may be loaded for immediate practice. A saved “Situation” file includes the current weather, frequencies, all airplane configurations and settings as well as failures. It essentially takes a snapshot the current state of the simulator for later recall. Note that the configuration of the aircraft is connected to the physical simulator hardware. For example, if a situation file is created where the airplane has 10 degrees of flaps deployed and the throttle is at 50% but when the situation file is loaded and the throttle in the physical simulator is at idle with flaps retracted, the configuration of the airplane will immediately match that configuration set in the simulator hardware. This does not hold for the simulated GNS430 and 530 which will match the configuration as saved in the situation file.

Hardware configuration can be a problem especially if the situation file is loaded while the simulator hardware was in the parking configuration (ignition to off, mixture fully leaned, throttle idle, parking brake applied). In that case the engine will quit immediately, and the student will have an interesting time restarting the engine and configuring the plane at the beginning of the scenario. For effective training, it is important to configure the simulator hardware for the intended scenario BEFORE loading the scenario file.



Note that a “Situation” file can be saved at any time while using the simulator to save that specific, current situation to disk. It may be helpful to pause the simulator at the start of the scenario by clicking the pause button (⏸) in the top right corner of the IOS screen. You may need to move your mouse there for the button to appear. Alternatively, the controls in the IOS (as per Section 0) can be used to position and configure the aircraft directly.

To create a “Situation” file:

1. Position and configure the aircraft as needed for your scenario.
2. Click the “Save Flight” button on the main IOS screen (button 11 in Section 3).
3. Set the “Save As” toggle to “Situation.”
4. Enter a file name. It is a good practice to include a descriptive title as to the situation you are saving. If this is a particular situation you use with your students, include your name.
5. Checking the optional “Load at sim startup” check box will load this “Situation” file whenever the sim is started. **DO NOT CHECK THIS BOX**

6. Click the “Save Flight” button at the lower left corner of the IOS screen.



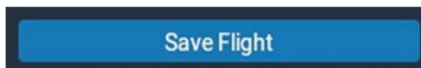
12.2. Save As: Replay

Saving a replay creates a record of the current flight up to the moment the replay is saved. You can save a replay anytime during an active flight by clicking the “Save Flight” button in the main IOS screen (see button 11 in Section 3).



To save a “Replay” file:

1. Anytime during a flight, click on the “Save Flight” button (see button 11 in Section 3).
2. Set the “Save As” toggle to “Replay.”
3. Enter a file name. It is good practice to use a descriptive title.
4. Click the “Save Flight” button at the lower left corner of the IOS screen.



13. Remaining Controls on Left Side of IOS Interface

There are a couple more controls remaining on the left side of the graphical user interface of the IOS.

13.1. Ground Speed

The “Ground Speed” slider changes the ground speed of the aircraft. This can be helpful to reduce the amount of flying time it takes to fly to a particular destination. Note that this does not affect the airspeed of the aircraft.



13.2. Reset Path

Clicking the “Reset Path” button will erase the red path that is shown following the aircraft on the IOS map. This can be useful if you want to focus only on a particular maneuver instead of the entire path of the flight leading up to the current moment.



13.3. Quit All

The “Quit All” button will shut down the IOS and the main simulation views. Using the “Quit All” button will allow the simulator software to shut down in an orderly manner and set up all instruments in their neutral positions.



After pressing this button, you will return to the main Green Castle interface. For detailed instructions on how to start and shut down the Green Castle AATD, refer to the “System Startup and Shutdown” manual.

13.4. Shut Down All

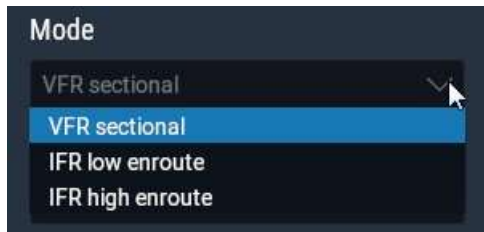
Clicking the “Shut Down All” button will shut down the simulator as well as the computer that the simulator is running on. This will not provide time for the simulator hardware to return to neutral settings which can result in a longer startup time next time the simulator is used or, in rare cases, the need to service the simulator hardware. Refer to the “System Startup and Shutdown Manual” for detailed instructions on how to shut down the simulator.

NOTE: DO NOT, UNDER ANY CIRCUMSTANCES, USE THIS BUTTON TO EXIT THE SIMULATOR. INSTEAD USE THE *QUIT ALL* BUTTON DESCRIBED ABOVE



14. Mode

The “Mode” drop-down menu offers different map modes available for the IOS.



- *VFR sectional*: Simplified version of a VFR sectional
- *IFR low enroute*: Low altitude airways; conveniently displays the ILS feather, representing the lateral deviation of aircraft while flying an ILS or LOC approach
- *IFR high enroute*: High altitude airways

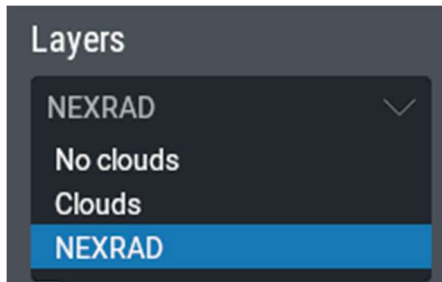
NOTE: THE ILS FEATHER IS ONLY VISIBLE IN IFR LOW ENROUTE

15. Layers

The “Layers” drop-down menu enables overlay of clouds, precipitation, and wind on the IOS map.

15.1. Overlay Clouds

Allows modification to the IOS map overlays. You may choose “No clouds,” “Clouds,” or “NEXRAD.” Clouds and precipitation overlays are based on the weather configured on the weather menu.



- *No clouds*: Nothing displayed on the IOS map
- *Clouds*: Displays an infrared representation of the clouds on the IOS map
- *NEXRAD*: Displays a colored radar representation of precipitation only

15.2. Overlay Wind

Allows modification to the IOS map overlay. You will see both wind direction and strength at a chosen altitude. The wind overlay is based on the weather configured in the weather menu.



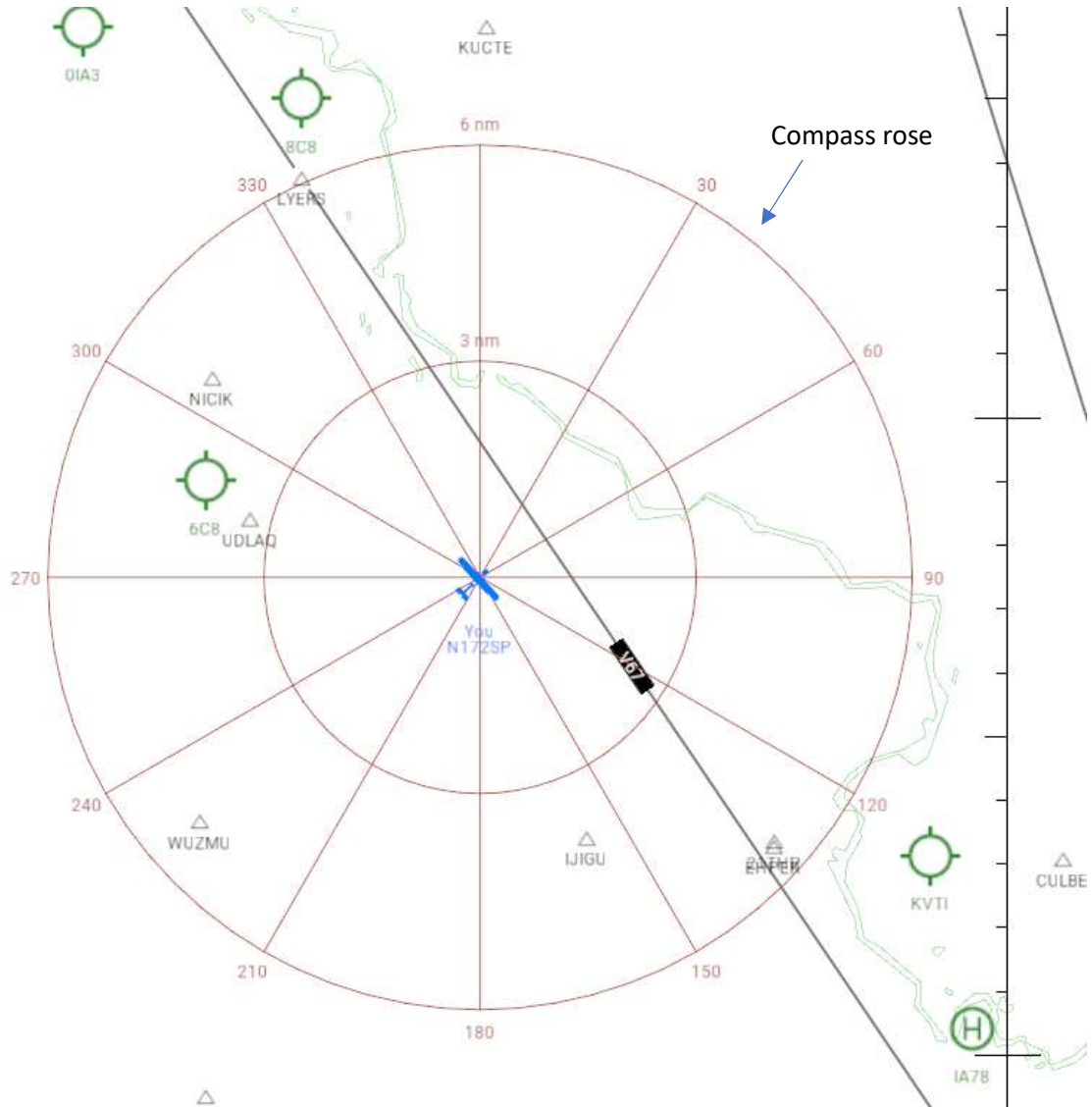
16. Flight Path

Clicking on this check box (Flight path) will show or hide the flight path that tracks where the aircraft has been.



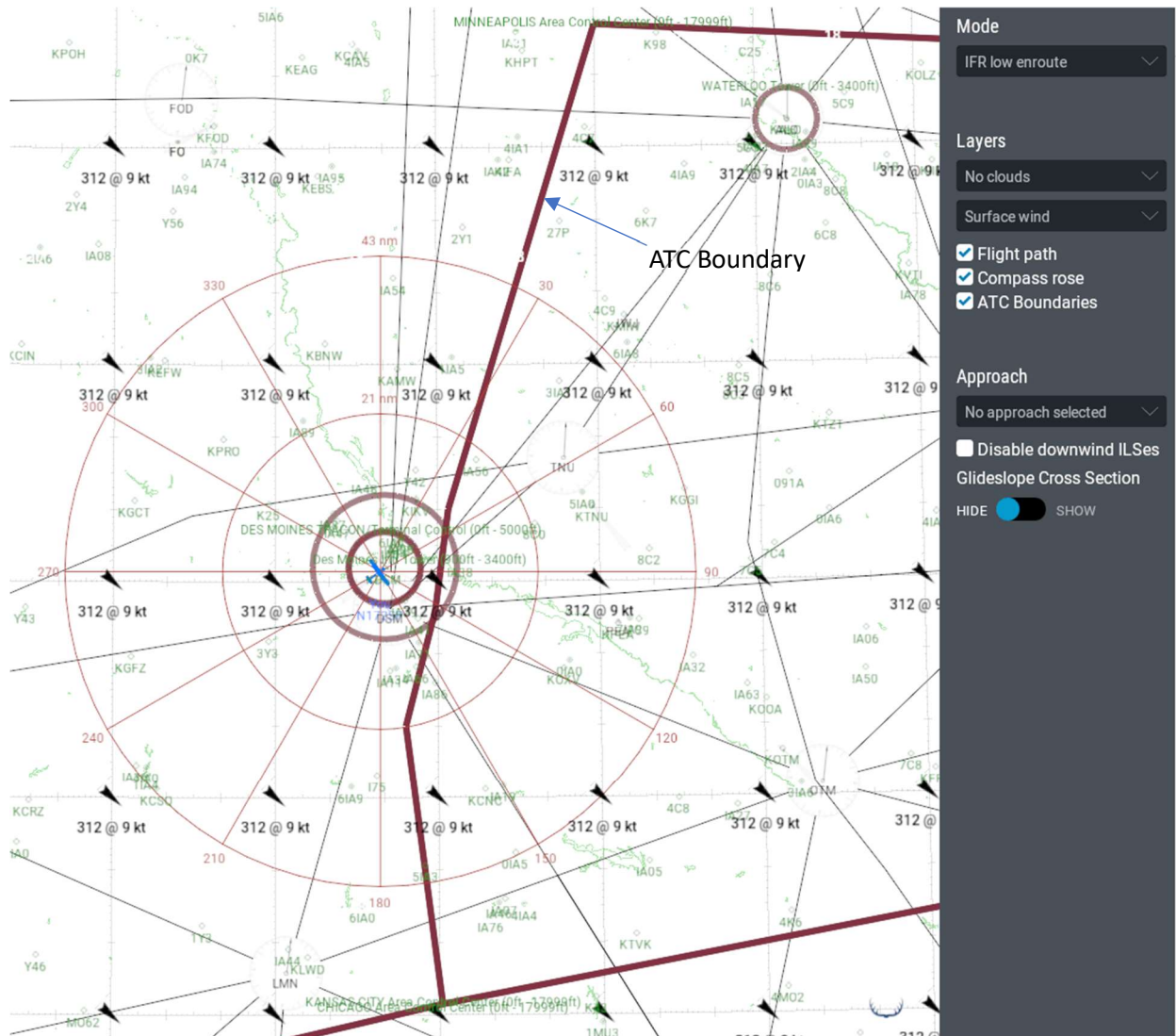
17. Compass Rose

Clicking on this check box (**Compass rose**) will show or hide the compass rose around the aircraft. This can be helpful when issuing vectors as ATC.



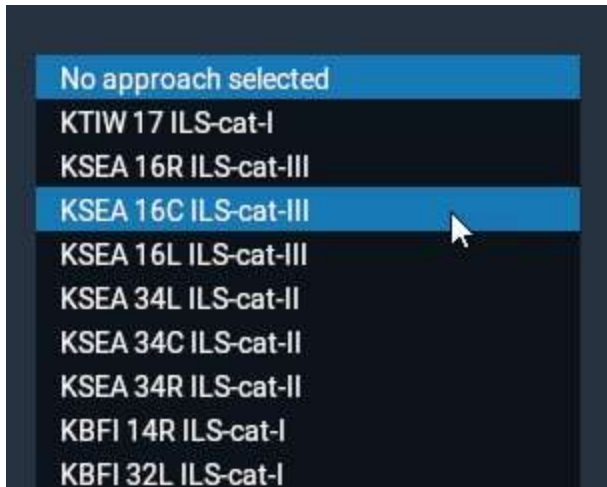
18. ATC Boundaries

Clicking on this check box will show or hide the boundaries of the air traffic control areas. This can be useful when simulating interactions with ATC. You can see when an aircraft would normally be handed over to a different controller. In the image the Class C airspace around the aircraft is clearly visible as well as the boundaries of the various center controllers.



19. Approach

The “Approach” drop-down menu works in conjunction with the “Glideslope Cross Section” toggle below it. This menu allows selection of the approach you would like see on the “Glideslope Cross Section.” If none is selected, no information will be shown on the “Glideslope Cross Section.” The picture below shows a short list of the approaches available based on the current location of the aircraft. The list will automatically change based on the location of the aircraft.

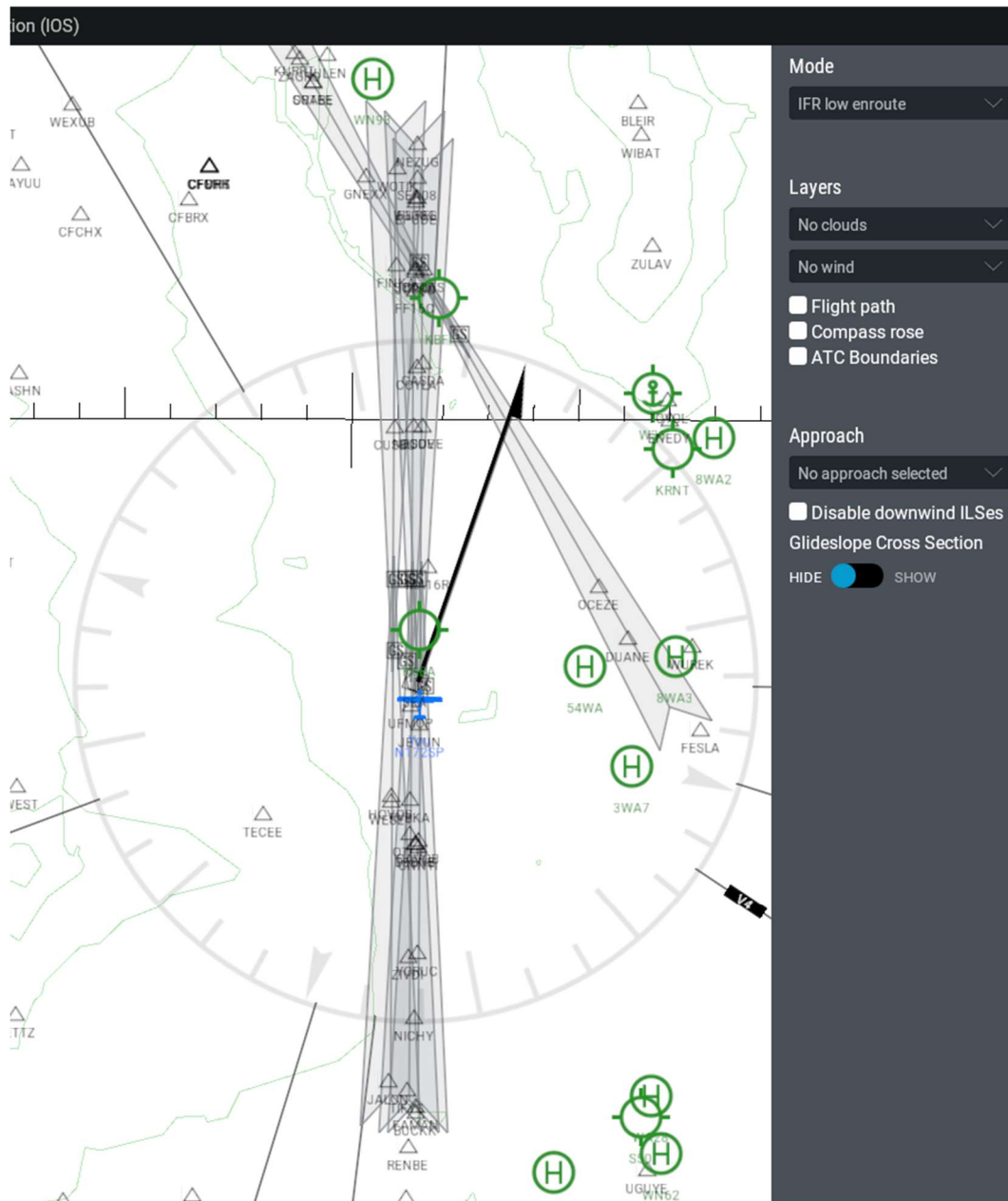


20. Disable Downwind ILSes

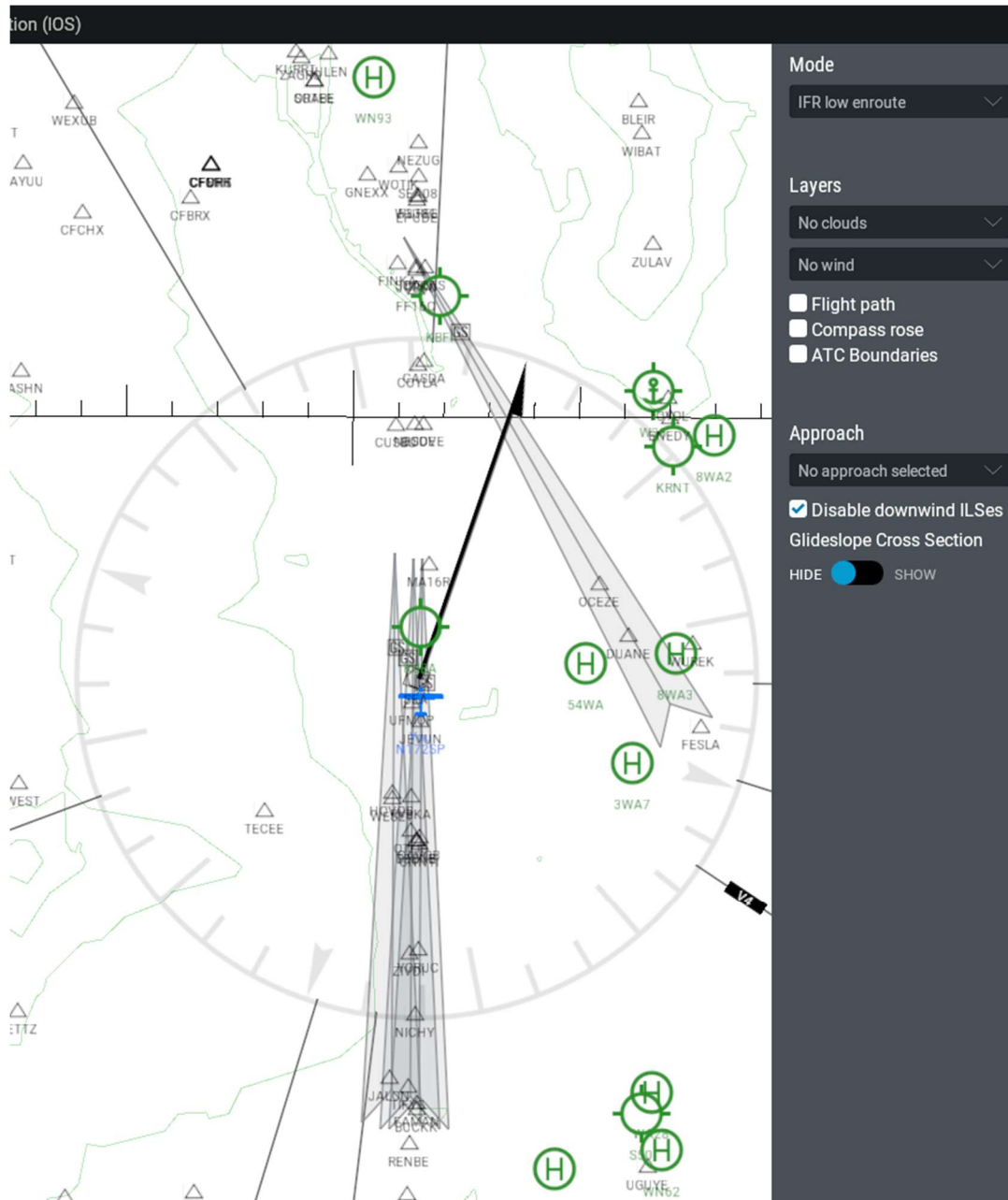
Clicking on this check box will disable downwind ILSes. Downwind direction is based on the wind direction setting only on Wind Layer 1 in the weather page. This option does not need any wind speed or other setting in Wind Layer 1. This setting is only determined by the **wind direction**. Disabled downwind ILSes will be hidden from the map.

Disable downwind ILSes

On the Figure below, the wind is blowing from 360 at 1kt. Also note that the check box for “Disable downwind ILSes” is not checked. Both up and downwind ILS feathers for KSEA ILS approaches are showing.

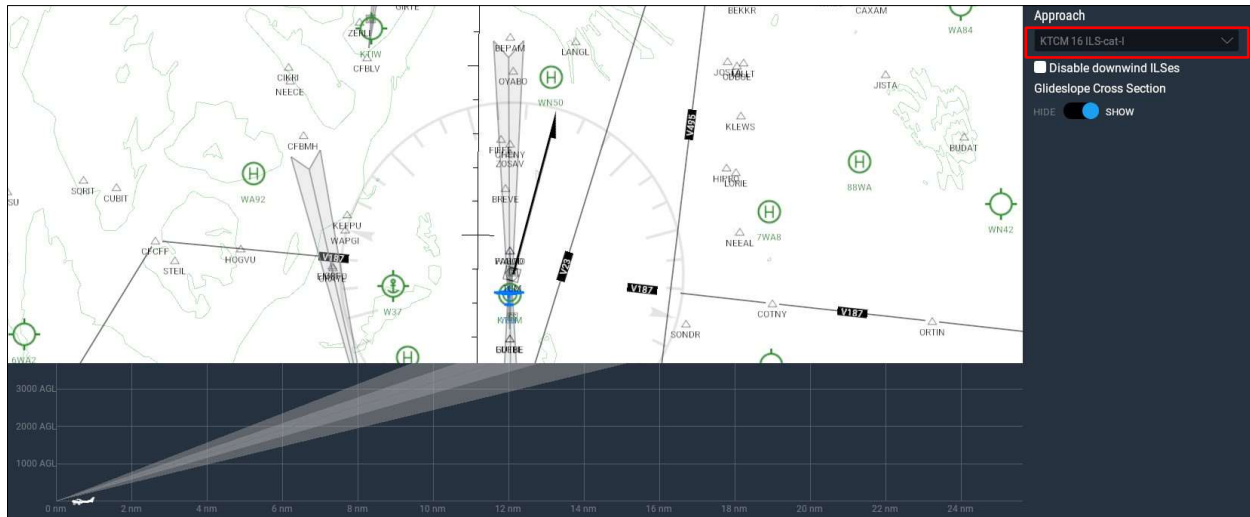


Alternatively, disabling downwind ILSes shows only the upwind approaches (see image below).

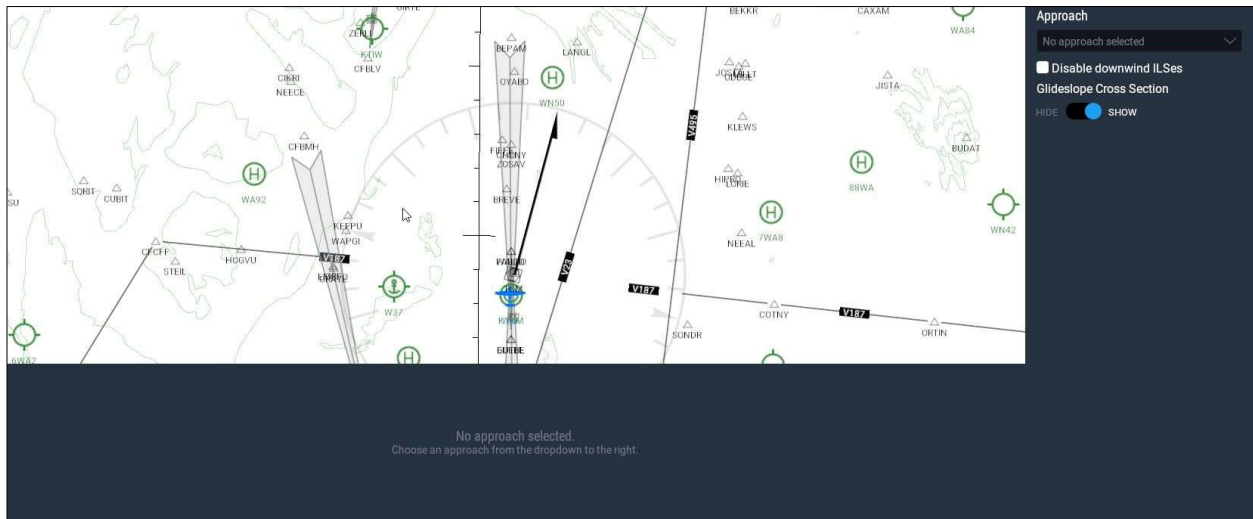


21. Glideslope Cross Section

The “Glideslope Cross Section” toggle will “Show” or “Hide” a cross section of the approach glideslope as selected in the drop-down menu. In the figure below, KTCM 16 ILS-cat-1 is the selected approach (highlighted by the red box) and the glideslope cross section is shown below the IOS map.



A glideslope cross section cannot be seen in the figure below because no approach has been selected in the drop-down menu.



22. Click to Get Information

When clicked, several items in the map will display an information box. The information shown is different based on the selected item.

22.1. Aircraft

Clicking on an aircraft shows the current heading, altitude, speed, pitch, and the latitude and longitude of the aircraft. To indicate that the aircraft is selected, its color will change from yellow to orange. Each information element can be changed through the sliders or by manual entry in the white boxes. These changes occur instantly. To quickly move an aircraft, select it so it turns orange. Click on the orange plane with the left mouse button and keep the button pressed. Move the mouse to drag the aircraft to a different location.



22.2. Airport

Clicking on an airport changes to color of the selected airport to orange and displays a box with two information tabs. The “Move” tab shows available runways on the corresponding airport. Clicking a runway number will move the aircraft to the approach end of that runway. Clicking a “Final Approach” button will move the aircraft to the final approach of the corresponding runway.

NOTE: These “Moves” require you to end your current flight. To proceed with a move, you will need to click on “Start New Flight” when prompted by X-Plane.



The “Details” tab shows the airport’s information details including communications frequencies, current weather conditions, your aircraft’s location from that airport, and more.

Des Moines Intl (KDSM) ✕

Move **Details**

957 feet

MEAN SEA LEVEL

Communications

| | |
|----------|-------------|
| ATIS | 119.550 MHz |
| UNICOM | 122.950 MHz |
| CLNC DEL | 134.150 MHz |
| GND | 121.900 MHz |
| TWR | 118.300 MHz |
| APPROACH | 118.600 MHz |
| CENTER | 118.050 MHz |

Control Type

Controlled

Transition Altitude

18000 feet

Conditions

Sky clear, visibility 40.00. Wind 3 1
1 at 9. Altimeter 2 9 9 2.

Relative Location

| | |
|----------|--------|
| RADIAL | 233 |
| DISTANCE | 0.7 nm |

Arrival Runways

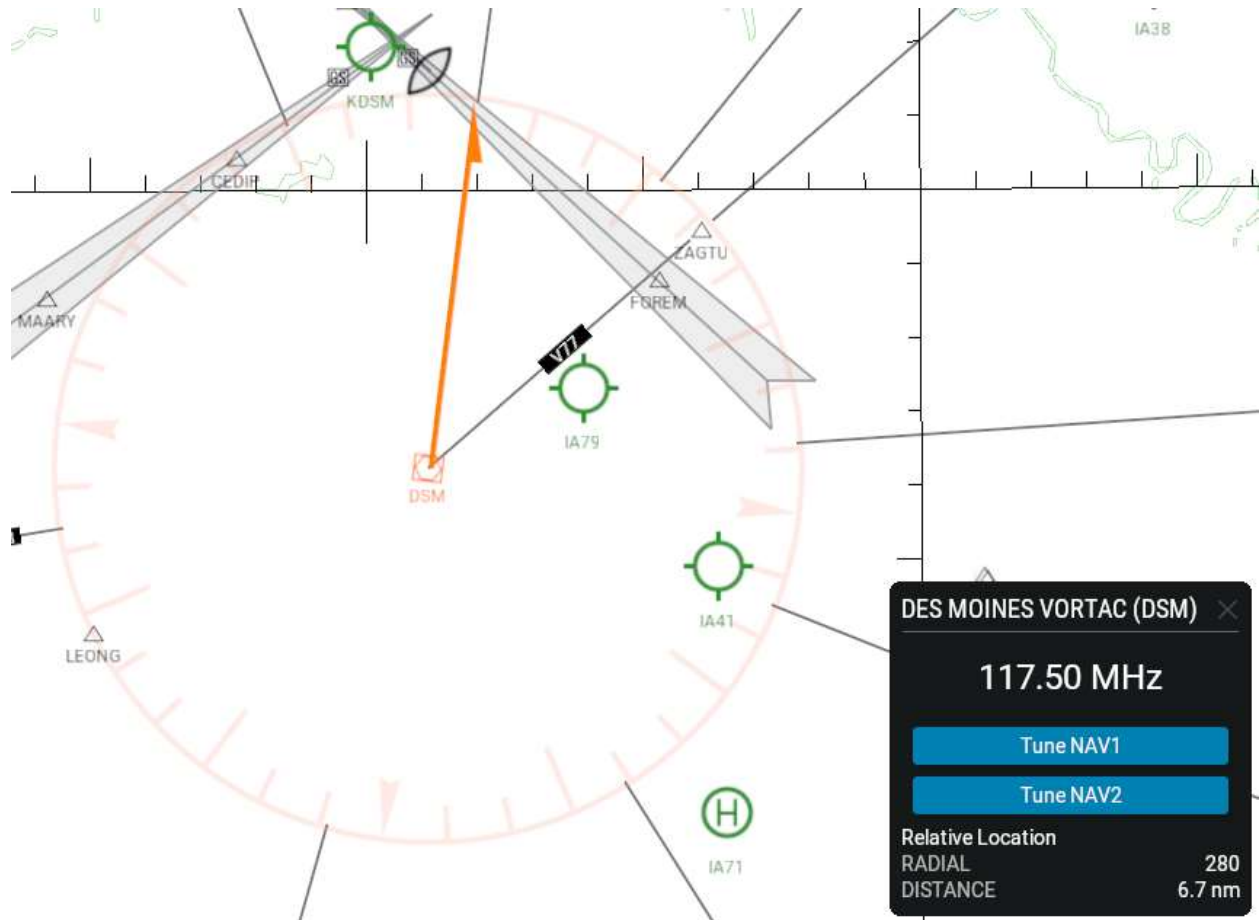
| | |
|-----|----|
| VFR | 31 |
| ILS | 31 |

Departure Runways

| | |
|--|----|
| | 31 |
|--|----|

22.3. VOR

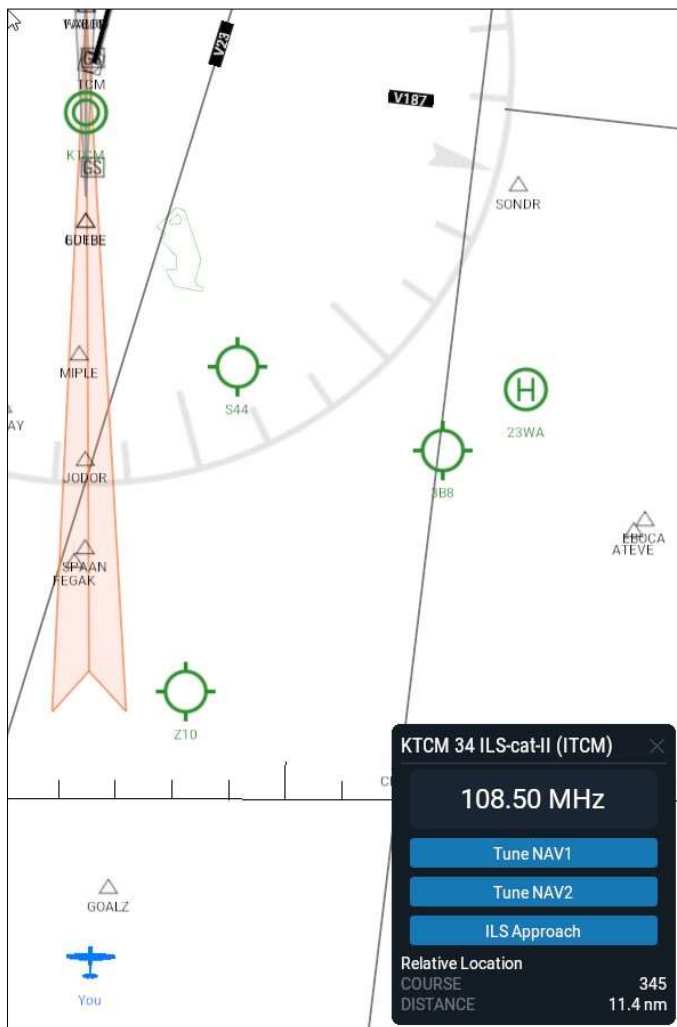
Clicking on a VOR turns its color to orange to show the active selection. Its frequency is shown and it provides the option to quickly tune the NAV1 (GNS530) or NAV2 (GNS430) system to it. The display box also shows your aircraft's location from the VOR.



22.4. ILS

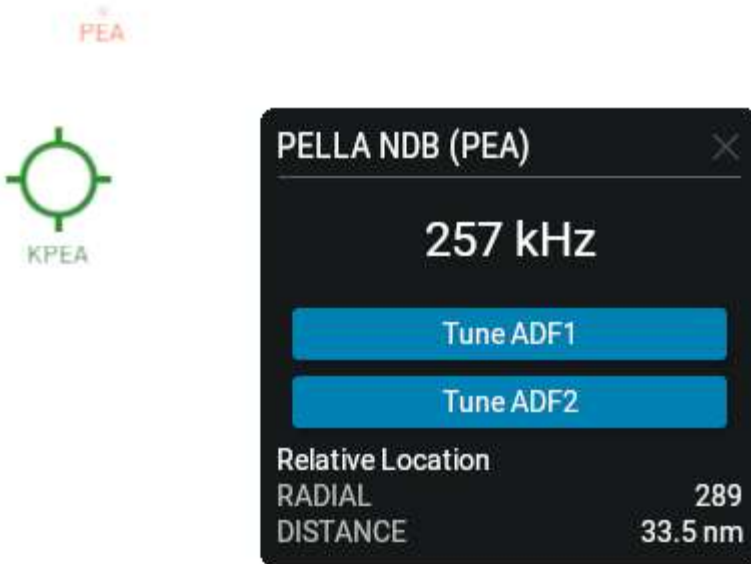
Clicking on an ILS feather highlights it orange to show the active selection. The associated display box shows its frequency and provides the option to quickly tune the NAV1 (GNS530) or NAV2 (GNS430) system to it. Additionally, you have the option to quickly move the aircraft onto the approach. Lastly, the display box gives a readout your aircraft's location from the ILS.

NOTE: Moving the aircraft to the approach requires you to end your current flight. To proceed with a move, you will need to click on "Start New Flight" when prompted by X-Plane. You will be placed on a 10nm final in line with the runway.



22.5. NDB

Clicking on an NDB changes its color to orange to show the active selection. The display box shows its frequency and provides the option to quickly tune the ADF system to it. Note: The Green Castle AATD only supports one ADF receiver (ADF1). The display box also shows your aircraft's location from the NDB.



22.6. Fix / Waypoint

Clicking on a fix or waypoint changes its color to orange to show the active selection and a box that shows your aircraft's position relative to that item is displayed.

