



HangarStack™ User Guide

Version 1.41 Build 41

Section 1: Introduction

HangarStack is a web-based/cloud-based application which enables you to create layouts of aircraft and other objects in conjunction with hangar and ramp graphics. Data is stored on the HangarStack server, enabling you to access your site via any desktop, phone, or tablet (phone use is not recommended, due to the small-size screen). All objects in HangarStack are drawn to-scale, providing accurate depictions of layouts.

Section 2: Main Menu Screen

Your ramps and hangars are listed here for selection. Be sure to read the End User License Agreement, which stipulates terms of use.

The **CONTINUE** button proceeds to the Layout Screen.

NOTE

HangarStack is used in a web browser. If you refresh the browser screen, the entire HangarStack application re-loads, and you could lose the current Layout data in your Layout. Do not click the refresh button in your browser unless necessary.

NOTE

We recommend the Chrome browser for best results.

Section 3: Layout Screen

The selected ramps or hangar is shown here, and you'll place aircraft and other objects on this screen. A Layout is a ramp or hangar graphic that contains aircraft and other objects on it. Layouts can be saved and opened (i.e., retrieved). A given ramp or hangar can have many different Layouts, enabling you to generate different scenarios of aircraft placements.

Below is a description of the various buttons, taken in order of typical use.

ADD AIRCRAFT [top] is used to add aircraft and other objects, such as Ground Support Equipment, to the current Layout. When clicked, the Aircraft Database

loads. Over 400 aircraft and other objects are contained in the Aircraft Database, all drawn accurately to-scale.

To add an aircraft manually: Choose Manufacturer > Choose Aircraft > provide a Registration > select the red/yellow/green Priority > type any notes, and click **CONTINUE**.

To search for an aircraft type: In the Search window [bottom], enter a search term. It is best to use smaller search terms. For instance, do not enter "KINGAIR," but rather enter "KING." Or, do not enter "HS125," but rather enter "125." Next, click **SEARCH**. Choose the aircraft from the Search list > provide a Registration > select the red/yellow/green Priority > type any notes, and click **CONTINUE**.

NOTE

Aircraft are drawn in HangarStack showing a certain configuration and might not represent variable features, such as winglets, tip tanks, speed mods, and other items that can vary among aircraft types. The actual aircraft you are working with in your operation might differ dimensionally from that shown here. Use caution, and take all precautions when moving actual aircraft to account for these potential variations to prevent damage.

NOTE

The Search function, described above, can be especially helpful, because many aircraft have changed manufacturers over time. For instance, a King Air turboprop aircraft might be referred to as a Beech, Beechcraft, Raytheon, etc. By using the Search function for "King," instead of using the Manufacturer > Aircraft method, it may be easier to find the aircraft you are looking for.

NOTE

The red/yellow/green Priority has default values. Those values may be customized/modified for your organization's use. To customize/modify them, please contact stevem@hangarstack.com for your requested values.

NOTE

Some Ground Support Equipment (GSE) is included in HangarStack. In the ADD AIRCRAFT window, under Manufacturer, select Ground Support Equipment > select the equipment > specify the details on the right side of the screen, as though you are adding an aircraft. When the GSE is added to the Layout, you can move it around just like an aircraft object.

When your aircraft appears in the Layout, you can select it by LEFT-clicking it. A blue Tow Target appears, enabling you to LEFT-click-drag the aircraft around to different positions. The blue Tow Target simulates a towing process, whereby the aircraft pivots around the main landing gear, being rotated by the front nose wheel.

When an aircraft is selected (i.e., yellow), the details are shown at the bottom of the screen, including aircraft type, notes, length, width, height, etc.

The aircraft has an ID tag that displays the Order Number (see below), heading (Hangar, True, or Magnetic), and Registration. The aircraft heading may be used to correlate the direction an aircraft is pointed in the current Layout with how it should be pointed in the actual hangar/ramp. For instance, if a given aircraft is pointed on a 233° magnetic heading as shown on the HangarStack screen, the ground crew can use that information when towing the actual aircraft to align it

roughly on a 233° magnetic heading [being mindful of obstructions and other real-world issues that might not be shown in the HangarStack software].

Some Layouts are larger than the screen can show. For very large Layouts, use the scrollbars on the bottom and right sides of the screen to scroll to different locations.

ORDER UP and **ORDER DOWN** buttons: When you add an aircraft, it is assigned Order Number 1. When you add a second aircraft, it is assigned Order Number 2, and so on. You can use the Order Number to visually note aircraft order. For instance, if you need a given aircraft to be first out of the hangar, you can make it Order Number 1. To do this, LEFT-click to select the aircraft. Then, at the top of the screen, use the ORDER UP and ORDER DOWN buttons to change the Order Number. You'll see all the aircraft in the current Layout and their Order Numbers change accordingly.

DELETE AIRCRAFT [top] deletes the currently-selected (i.e., yellow) aircraft from the Layout. However, it does not delete it from any saved Layouts, unless you save the current Layout.

EDIT DETAILS [top] allows you to edit the currently-selected aircraft's details, similar to the details that were entered when the aircraft was first added.

FIND AIRCRAFT [top] is used to locate a particular aircraft in the current Layout. Just specify the registration number, and the aircraft will be shown.

SAVE LAYOUT [top] is used to save the current Layout. All aircraft and objects shown on the current hangar or ramp graphic are saved to the server/cloud. You may save as many Layouts as you wish for a given hangar or ramp. The Save Layout window lets you save the current Layout to the existing name or to a new name.

OPEN LAYOUT [top] is used to open a saved Layout. When clicked, HangarStack will load the aircraft and objects for that Layout, positioning them to their saved positions.

DELETE LAYOUT is used to delete the selected Layout.

XFER A/C [top] acts similar to a Copy/Paste function for the selected aircraft, whereby you can transfer it to a different ramp or hangar. To use this feature, LEFT-click to select the aircraft you wish to transfer > click XFER A/C > at the very top of the screen, click CHANGE > select the new ramp or hangar > at the top of the screen click PASTE.

CHANGE [very top of the screen] returns you to the Main Menu Screen and is used to change to a different hangar or ramp. You will be prompted to continue or cancel, in case you haven't saved your current Layout.

PRINT LAYOUT [top] opens your browser's Print function. There, you may set printing options much like printing any document.

NOTE

We recommend the Chrome browser for printing.

NOTE

If the PRINT LAYOUT button in HangarStack doesn't function properly, please try to RIGHT-click over the Layout, and then choose the Print function from your browser.

NOTE

To print to a PDF, which might be most useful for large-format printers, please consider using the Chrome browser. In Chrome's Print function, under Destination, click Change > Save As PDF. Proceed to print the screen like any document; the Chrome browser will prompt you for a folder/file location and name to save your Layout image as a PDF.

TECH SUPPORT [top] will open a new browser window containing HangarStack technical support information.

ZOOM [bottom] is used when a given ramp or hangar graphic is larger than the screen allows. Drag the slider left and right to change the Zoom value.

Spacing Outline (Ft.) [bottom] is used to draw a green outline around all aircraft and objects in the current Layout. For instance, if you require 5' spacing between all aircraft in your hangar/ramp, select a value of 2.5'. Then, move the aircraft accordingly, such that the green outlines just touch. This will achieve a visual spacing of 5'.

Hangar Heading/True Heading/Magnetic Heading [bottom] is used to toggle the display of all aircraft's displayed headings on their ID tags. The aircraft heading may be used to correlate the direction an aircraft is pointed in the current Layout with how it should be pointed in the actual hangar/ramp. For instance, if a given aircraft is pointed on a 233° magnetic heading as shown on the HangarStack screen, the ground crew can use that information when towing the actual aircraft to align it roughly on a 233° magnetic heading (being mindful of obstructions and other real-world issues that might not be shown in the HangarStack software). The True Heading selection (i.e., not adjusted for magnetic variation) may be useful in some cases to align with maps or compasses that are not adjusted to magnetic north. The Hangar Heading selection will use the screen's "up" direction to denote "north." In other words, "north" becomes relative to the hangar graphic on the screen and not magnetic or true north.

PRINT DETAILS [bottom] will open a window that lists all aircraft in the current Layout. You may click and toggle the column headers (i.e., LEFT-click the Notes column) to sort the data based on that column.

OPEN IN PRINTER VIEW will open a new browser window that is black-and-white and suitable for printing. This printout can be helpful to give to line staff, to review Note, Priority, etc.

Section 4: Additional Features

Using Tablet Devices

HangarStack has been tested on iPad tablets. We recommend the use of the Puffin Browser app (a \$4.99 purchase on the Apple App Store). Launch the Puffin Browser app, and enter your URL (HangarStack site web address), and use HangarStack as you typically do.

NOTE

The Puffin Browser app contains a "touchpad" feature, which enables you to use your finger to navigate the mouse, much like the touchpad on a laptop computer.

Printing To PDF

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