Getting started with the Honeycomb yoke and throttle quadrant in MSFS

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July 12, 2021

This guide will assist you to configure the Honeycomb Bravo Throttle Quadrant (BTQ) for different aircraft types. It will specifically illustrate how to map the throttle, mixture and propeller levers, and the TOGA button for a variable pitch single-engine prop aircraft, such as the Cessna 182T Skylane. The process for the establishment of this profile can then be used as the template for creating profiles for other aircraft types.

Numbers, numbers, numbers

Before getting into configuration procedures, however, it is worth coming to an understanding of how Honeycomb has numbered all buttons, switches and axes in their products. The six lever positions, shown below (Figure 1) have been designated positions #1 to #6 – my numbering, not Honeycomb's. When any lever is inserted, the axis binding for that position must be applied to that lever, regardless of what function you want the lever to perform.

Figure 1: Lever position designation

This resource should also be seen in context with the article, '*Aircraft list and profile classification*' found at www.flightsimaus.com.au/resources-1. The article provides a suggestion on how aircraft in your virtual hangar can be categorised in a manageable fashion using the Control function of Microsoft Flight Simulator 2020 (MSFS). Table 1 below shows how the current twenty-eight aircraft in the MSFS suite can be classified into seven categories. These categories have been applied throughout this resource.

Alpha Flight Controls	CAT	Bravo Throttle Quadrant	CAT
Default Profile (Twin Prop)	-	Default Profile (Twin Prop)	-
Master Profile	-	Master Profile	-
Single Engine Prop #1	A	Single Engine Prop #1	A
Single Engine Prop #2	B	Single Engine Prop #2	B
Single Engine Turbo Prop	C	Single Engine Turbo Prop	C
Twin Engine Prop GA	D	Twin Engine Prop GA	D
Twin Engine Jet Airliner	E	Twin Engine Jet Airliner	E
Four Engine Jet Airliner	F	Four Engine Jet Airliner	F
Four Engine Prop	G	Four Engine Prop	G

Table 1: Categorisation of aircraft types

The following seven illustrations indicate the axes that apply to the six lever positions of the Honeycomb throttle quadrant. Note how each lever position has a designated axis, regardless of the function it performs. For example, with CAT A and CAT B, position #3 for both it is R Axis Z, however, in CAT A #3 is for Mixture, yet in CAT B it is for Propeller.

Twin-engine prop
(Default profile)

#1: Throttle 1 – L Axis Y

#2: Throttle 2 – L Axis X

#3: Propeller 1 – R Axis Z

#4: Propeller 2 – R Axis Y

#5: Mixture 1 – R Axis X

#6: Mixture 2 – L Axis Z

Single-engine prop variant 1 (CAT A)

#2: Throttle 1 – L Axis X

#3: Mixture 1 – R Axis Z

Single-engine prop variant 2 (CAT B)

#2: Throttle 1 – L Axis X

#3: Propeller 1 – R Axis Z

#4: Mixture 1 – R Axis Y

Single-Engine Turbo Prop (CAT C)

#2: Throttle 1 – L Axis X

#3: Propeller 1 – R Axis Z

#4: Mixture 1 – R Axis Y

Twin-Engine Prop GA (CAT D)

#1: Throttle 1 – L Axis Y

#2: Throttle 2 – L Axis X

#3: Propeller 1 – R Axis Z

#4: Propeller 2 – R Axis Y

#5: Mixture 1 – R Axis X

#6: Mixture 2 – L Axis Z

Twin-Engine Jet Airliner (CAT E)

#1: Speed Brake – L Axis Y

#3: Throttle 1 – R Axis Z

#4: Throttle 2 – R Axis Y

#6: Flaps – L Axis Z

Four-Engine Jet Airliner (CAT F)

#1: Speed Brake – L Axis Y

#2: Throttle 1 – L Axis X

#3: Throttle 2 – R Axis Z

#4: Throttle 3 – R Axis Y

#5: Throttle 4 – R Axis X

#6: Flaps – L Axis Z

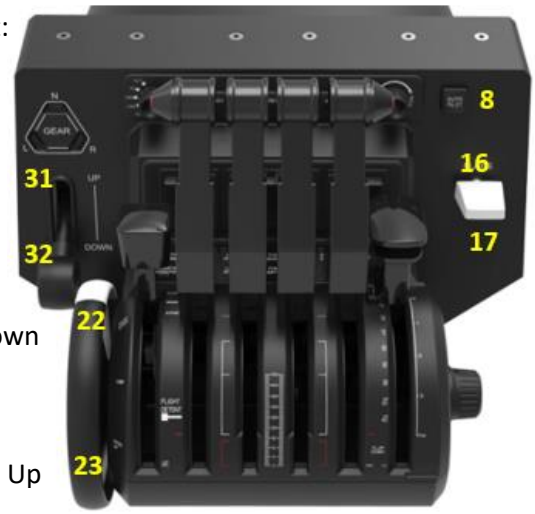
Engines Reverse Thrust:
12 / 9 & 11/10

31: Gear Up

32: Gear Down

22: Trim Wheel Nose Down

23: Trim Wheel Nose Up



8: Autopilot toggle button

16: Flaps Up

15: Down

Figure 2: Throttle Quadrant Switch Panel

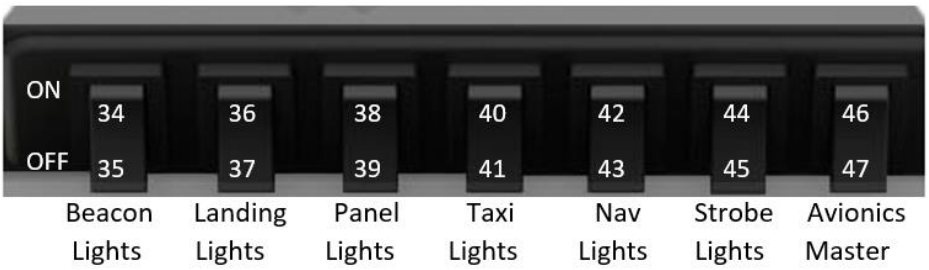


Figure 3: switch panel assignments in Default Profile

The designations shown in Figures 2 and 3 are those for the Default Profile. If you have both the yoke and the throttle quadrant, you will see there are duplications, as seen below. Therefore, it makes sense to assign the switches on the throttle quadrant switch panel to other functions. The same would apply if you also have Saitek/Logitech panels in your sim (see p. 5). Assignments made could vary according to the aircraft category you are dealing with.

Figure 4:
Yoke switch panel designations – left side

Figure 5:
Yoke switch panel designations – right side

Figure 6: Combination of Honeycomb and Saitek/Logitech panels

Figure 7: Yoke handle assignments

Profile configuration guide

Out of the box, the Honeycomb Bravo TQ is configured for multi-engine general aviation aircraft. This is called the DEFAULT profile. This profile can be duplicated, modified and saved as profiles for other aircraft types in your virtual hangar. This eliminates the hassle of changing multiple assigned bindings when you switch from one aircraft type to another. You simply select the profile created for an aircraft type within the MSFS Controls page.

Five different profiles can be established for general aviation and commercial aircraft:

Single-engine prop basic | Single-engine prop complex | Twin-engine prop | Twin-engine jet | Four-engine jet

Getting started

After you open MSFS, go to Options > Controls. You can see that the default profile is identified in the system as the BRAVO THROTTLE QUADRANT | DEFAULT (Figure 8).

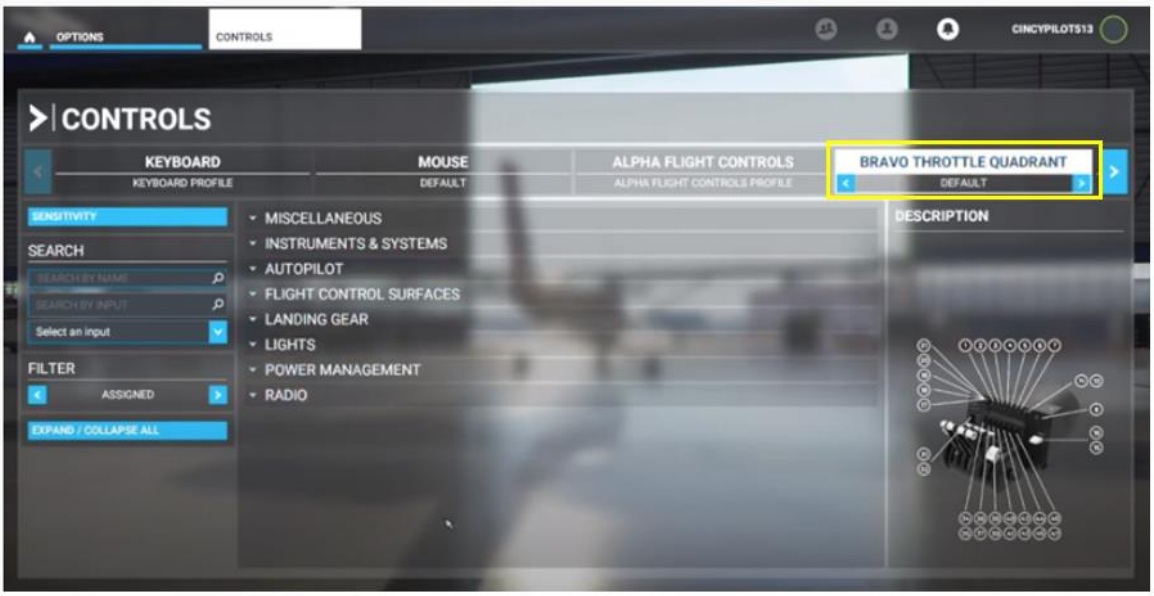


Figure 8: Default profile displayed

The DEFAULT profile is configured for a **twin-engine GA prop aircraft**. This profile must NOT be changed. Therefore, a duplicate of this profile should first be made and saved with an appropriate name.

Have the six levers inserted into the throttle quadrant as for a twin-engine prop GA aircraft. The Throttle 1 lever should be the one with the red TOGA button. To test that the levers are working in the DEFAULT profile, in Controls > Power Management, go to the Mixture 1 axis. (Figure 9). If you move the Mixture 1 lever you will see the slider [Joystick R – Axis X] moves, indicating that it is mapped to lever position #5. Do the same for the other five levers to check they are assigned and work. The Reverse Axis check box for all six lever assignments must be checked.

Figure 9: Mixture 1 axis

You will note that the slider for Throttle 1 works, but Throttle 2 doesn't. It's stuck at 50%. This is not a fault with the BTQ but a bug within MSFS. Rebinding the lever alone doesn't work. This has to be rectified. To do this, go into the Throttle 2 axis and click on the axis assignment [L Axis X] (Figure 10). Click on CLEAR CURRENT INPUT and VALIDATE (Figure 3). Whenever you change the DEFAULT profile, you're prompted to rename the profile. In this case it's 'Bravo Throttle Quadrant profile', so click OK to save (Figure 11).

By default, the keybinds are filtered to only show the assigned keybinds; so when you delete the Throttle 2 binding it's eliminated from the visible list. The simplest way to see Throttle 2 again is to go up to SEARCH BY NAME and type in Throttle 2. Select Throttle 2 axis from the list and rebind the lever by clicking on START SCANNING, move lever #2 and it will find it. Validate it and you can see that the Throttle 2 slider now works. Remember to check the box for REVERSE AXIS. The bug has now been fixed.

Figure 10: Clearing an input

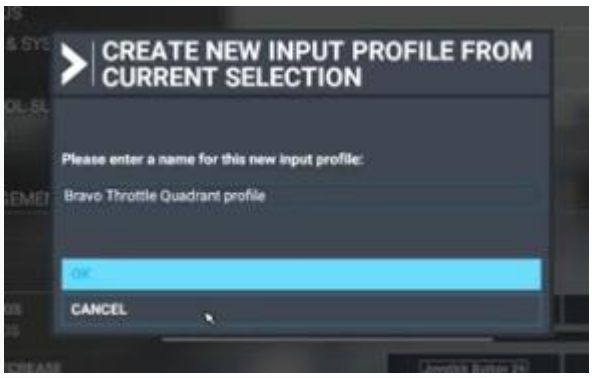
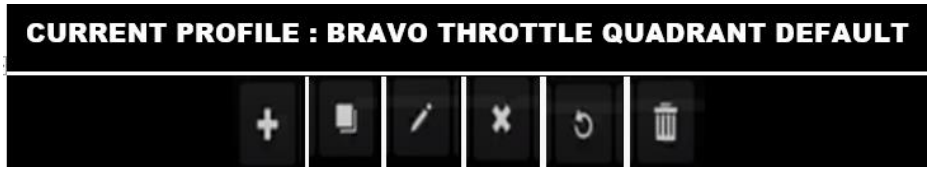


Figure 11: Creating a new input profile

It is recommended that you now save this profile as a master profile, from which other profiles for different aircraft types can be created. Go to the bottom left of the CONTROLS page and click on PRESET MANAGER (or press the M key on your keyboard). The following window will appear:



Click on the  icon to duplicate the current default profile. Another window will open, asking you to enter another name for the profile. Delete 'Bravo Throttle Quadrant profile 2' and enter a new name, something like MASTER PROFILE, and click OK. You will automatically go back to the CONTROLS page.

The name of your new profile will appear in the top right corner of the page. This profile will be the one you modify to create further profiles for other aircraft types, while retaining the DEFAULT profile unchanged.

The # numbers in Figure 12 below illustrate the six positions in which levers can be inserted. Each position has a designated **axis binding** as follows:

#1: Joystick L Axis Y
#2: Joystick L Axis X
#3: Joystick R Axis Z
#4: Joystick R Axis Y
#5: Joystick R Axis X
#6: Joystick L Axis Z

Figure 12: Six lever positions

When any lever is inserted, the axis binding for that position must be applied to that lever, regardless of want function you want the lever to perform. For example, Figure 13 below shows a lever setup for a complex twin-engine aircraft. Positions #2, #3 and #4 for throttle, propeller and mixture respectively are shown. Figure 14 shows a setup for a twin-engine jet airliner. Positions #1, #3, #4 and #6 are used for speed brake, throttle 1, throttle 2 and flaps. Note how positions #3 and #4 have different operational functions, but have the same assigned axis bindings.

Figure 13

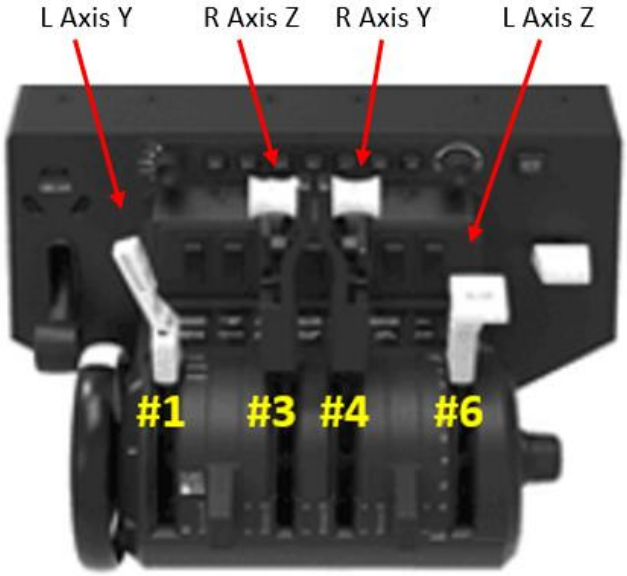


Figure 14

Creating a profile – complex single-engine prop

First, your MASTER PROFILE needs to be modified to create the new profile. The axis for Mixture 1 in the MASTER PROFILE (currently twin-engine prop) setting relates to position #5.

Figure 15: Testing the Mixture 1 axis

However, Honeycomb specifies that the Mixture lever for a complex single-engine prop should be in position #4, the Propeller in position #3 and the Throttle in position #2 (Figure 14). But you want Mixture mapped to lever position #4. The first thing to do then is to "clean up" all the current commands for the six levers.

In your MASTER PROFILE, go to POWER MANAGEMENT > MIXTURE (Figure 15) and expand for all Mixture assignments. Click on [Joystick R – Axis X] and a window opens. Click on CLEAR CURRENT INPUT for Mixture 1 Axis, then VALIDATE and OK. (Figure 15).

Figure 14: Lever positions complex single prop

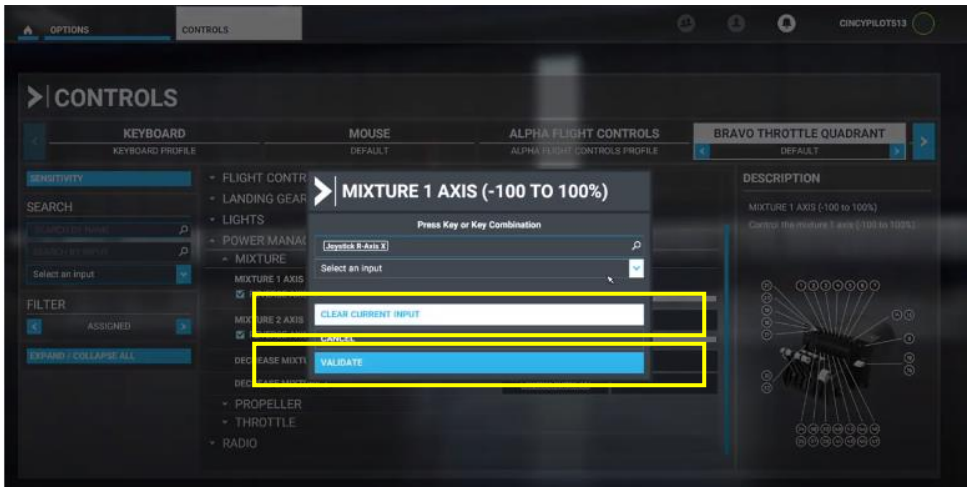


Figure 15: Clearing the currently mapped input

At this point it is important to give the profile another name. So, type in another title e.g., GA – SINGLE ENGINE and click OK (Figure 16).

When you return to the main CONTROLS page, you will note that the new BRAVO THROTTLE QUADRANT profile name has changed.

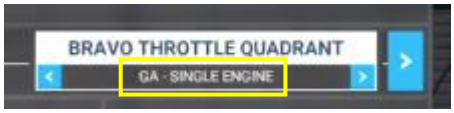


Figure 16: Re-naming the Master Profile

Mapping the new profile

From now on you use this profile to continue configuration for GA single-engine aircraft, and the MASTER profile is left unchanged to use another day.

First, you CLEAR CURRENT INPUT and VALIDATE for the remaining five axes, as you did for previously for Mixture 1.

- Mixture 2 – Joystick L-Axis Z
- Throttle 1 – Joystick L-Axis Y
- Throttle 2 – Joystick L-Axis X
- Propeller 1 – Joystick R-Axis z
- Propeller 2 – Joystick R-Axis Y.

Once current inputs are cleared, remove all six levers then re-insert levers as follows:

- Throttle – Position #2
- Propeller – Position #3
- Mixture – Position #4

Now you map the axes for the three levers for the complex GA single-engine aircraft as follows.

Throttle 1 will be lever position #2. Click on the THROTTLE 1 AXIS (Figure 17).

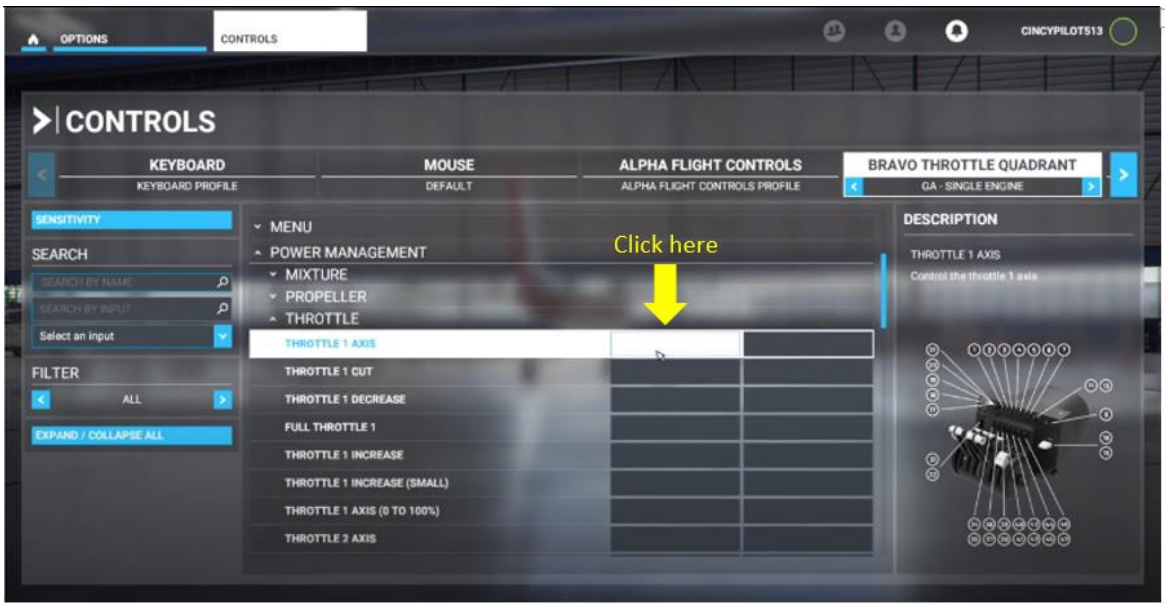


Figure 17: Mapping a new axis

When the Throttle 1 Axis window opens, click on the down arrow (Figure 18) and scroll down to and select the input [Joystick L-Axis X] and VALIDATE.

Repeat this process for the Propeller lever, position #3, by selecting input [Joystick R-Axis Z] and VALIDATE.

Repeat the process again for the Mixture lever, position #4, by selecting input [R-Axis Y] and VALIDATE.

Ensure the Reverse Axis box is checked ☑ for each lever assignment.

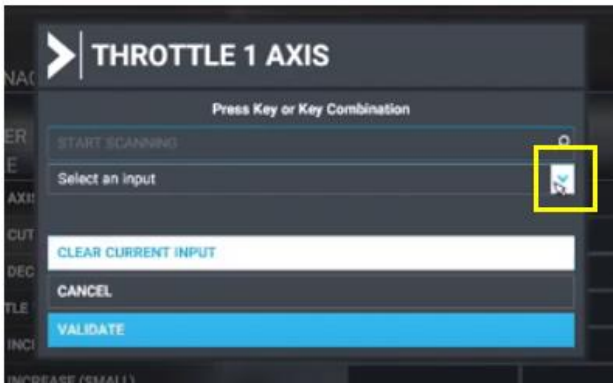


Figure 18: Selecting an input

To configure the Go Around (TOGA) switch, from the CONTROLS page with filter at ALL, select FULL THROTTLE 1. (Figure 19). When the sub-page opens, click in the START SCANNING box. When it turns grey, press the red button on the lever. [Joystick Button 9] will appear. Click on VALIDATE, and the TOGA button is now mapped.

Figure 19: Mapping the TOGA button

To complete the process, make sure you click on [F11] APPLY & SAVE at the bottom of the page. And there you have it; you have configured the Honeycomb Bravo Throttle Quadrant for a single engine prop airplane.

To ensure you have configured these properly, jump into your plane and test out the controls for operational axes.

Setting profiles for other aircraft
The same methodology applies for the establishment of profiles for other aircraft types. Use your MASTER profile as the starting point, configure as required and save the profile with a different name for each aircraft type, thus saving your MASTER profile in its original state.

Final comment
The content of this publication has been developed from the extrapolation of information from a number of videos examined on this topic. For some, an illustrated and text-based resource is a preferred way of comprehension and learning; hence this article. The knowledge and expertise of video producers is given due credit. They are acknowledged in the reference list that follows. You may opt to view the cited tutorials in conjunction with the reading of this article.

Every effort has been made to ensure that the procedures for configuration detailed in this article are accurate. However, should my interpretation of the resources used result in errors being made, it would be appreciated if you advised me by emailing info@flightsimaus.com.au.

References

RMag, Dec 27, 2020, *5 Configurations for Honeycomb Bravo Throttle Quadrant in MSFS 2020* *https://www.youtube.com/watch?v=iAVicVzF0Po&t=37s*

Rmag, Dec 27, 2020, *Throttle 2 Bug Fix for Honeycomb Bravo Throttle Quadrant in MSFS* https://www.youtube.com/watch?v=Q4VIOUqqQK8

Sporty's Pilot Shop, 6 Feb, 2021, *Honeycomb Bravo GA Single Engine Configuration (Throttle, Mixture, TOGA*, https://www.youtube.com/watch?v=q5huSXTJI3E

SimHanger, Jan 15, 2021, *Configuring the PROPS in the Bravo Throttle Quadrant | MSFS* *https://www.youtube.com/watch?v=MjovDdueafI*

Whiley, G. (2021) Flight Simulation Australia, *Aircraft list and profile classification*, www.flightsimaus.com.au/resources-1/pdf

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