LUVCARS 5 INTERACTIVE CO-PILOT GUIDE

Revised: 08/29/2024

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Changelog

NAME	DATE	CHANGE	VERSION
Braden T	08/28/24	5.0.27 Checklist Updates	1.1
Ryan F, Matt G, Braden T	03/23/24	Initial Draft Release	1.0

Purpose

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This manual is designed to educate the pilots of Southwest Virtual Airlines on the new features of the LUVCARS 5 interactive co-pilot.

Scope

This manual is approved by the Executive Team at Southwest Virtual Airlines specifically for the release of LUVCARS 5 install, set-up, and use.

Mission

Southwest Virtual Airlines is dedicated to the highest quality of flight simulation with a sense of realism, warmth, friendliness, and company spirit.

Assumptions

The use of the new Interactive Co-Pilot features requires pilots to be familiar with the appropriate procedures for each crew position within the cockpit. Please ensure that you are familiar with Southwest Virtual Airline's Aircraft Operations Manual and the associated responsibilities for the Captain (CA) and First Officer (FO) as well as the responsibilities for the Pilot Flying (PF) and Pilot Monitoring (PM).

New features

LUVCARS 5 introduces many new features that will enhance the flight simulation experience and bring it to the next level. *Updates in latest version

Some new features of LUVCARS 5 (L5) are:
- Non-Normal Landing Configurations
- Tankering Fuel
- Taxiway Markings and Gate Numbers
- Interactive Co-Pilot
- Updated Performance Calculations
- Checklist/Flows integration
- Legs not flown option
- Custom Announcements
- Advanced Audio settings
- Load Dispatch Fuel Option
- SDK Auto Check for PMDG Aircraft
- Cancel Uplink Button
- Bug fixes for WX/Perf Data*
- New Checklist steps for Interactive Co-Pilot*

System requirements

For LUVCARS 5 to operate correctly, pilots must ensure that they meet these parameters.
- Valid and updated version of Windows 7+ with .Net 8.0
  - NOTE: LUVCARS 5 is **NOT** compatible with macOS!
- Valid copy of any flight simulator (MSFS, FSX, P3D, XP)
- FSUIPC/XPUIPC, depending on the simulator being utilized.

Simulator Compatibility

The new Co-Pilot consists of four (4) main features: checklists, commands, procedures, and announcements.

The checklists and announcements work across all Windows based simulator platforms (P3D, XPlane, MSFS, etc).

They are not based on any one simulator.

The commands and procedures are compatible with PMDG for MSFS only.

Initial setup

Prior to user set up in the LUVCARS Application it is recommended that members complete the following Voice Recognition set up:

Navigate to your Control Panel > Ease of access > Speech Recognition

Select Train your computer to better understand you.
> Users who completed this step achieved a greater response from the Interactive Co-Pilot feature.

Figure 1.0 – Resources Tab
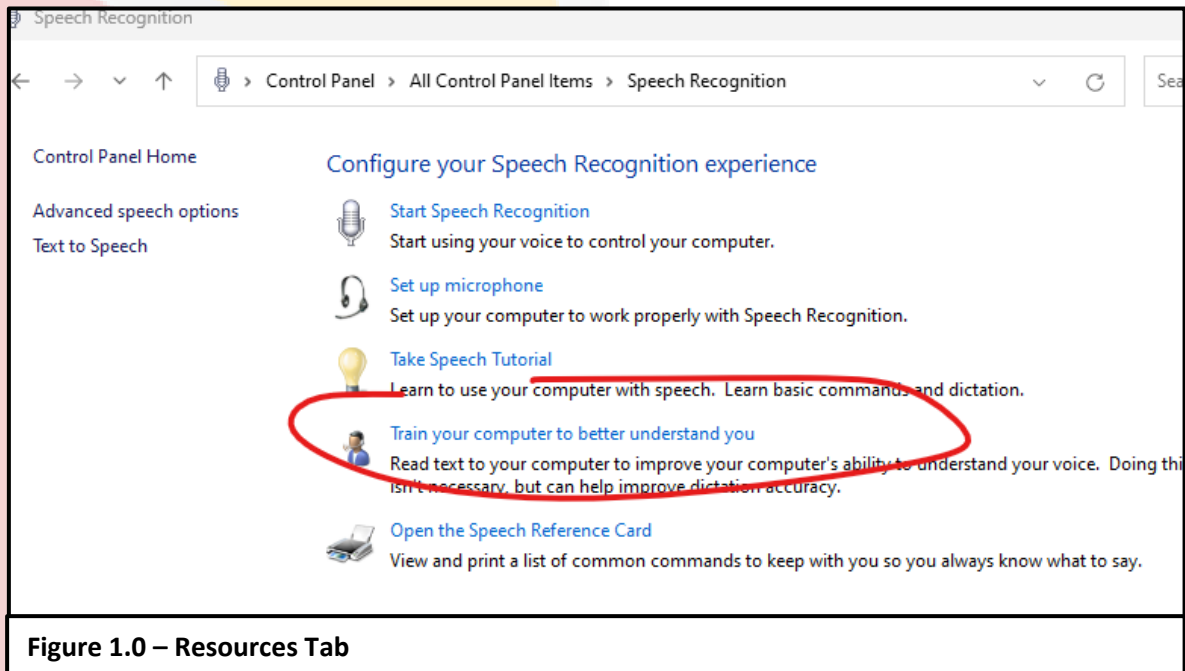
Once the Speech Recognition Training has been accomplished launch the L5 application and Login

Figure 1.1 – LUVCARS 5 Log-In
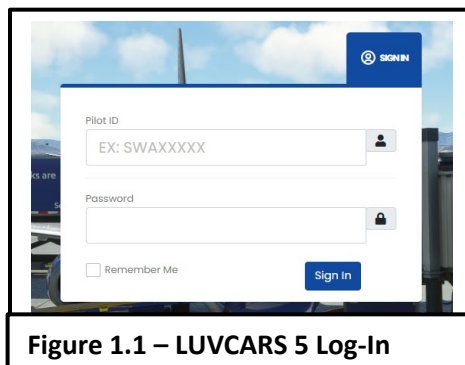
Click on the drop down next to the name and select Settings.
Review the announcements desired, the alert notifications, and input the SimBrief username of the pilot.

Other settings to adjust that are specific for Interactive Co-Pilot:

General Audio: Output = PA announcements from Flight attendant/Captain

First Officer Audio: Input = Microphone used to communicate with FA/FO

Output = Where the FO audio is routed (Checklist responses)

Announcements: Select which announcements you wish to have played through the General Audio Output Device.

Note: If you are going to utilize the custom announcements features deselect the Captain Announcements box.

SimBrief Settings: Options for the use of SimBrief integration into the Dispatch/Performance Tabs of L5.

Co-Pilot Settings: Click the Blue *"Set PTT"* Button then the key(s) on keyboard/Button on Controller you wish to use to activate the voice recognition for Checklists and First Officer interaction. For Keyboard Commands you can select up to 4 keys in the pattern to enable the PTT feature in L5. You can also Clear the PTT setting, Enable/Disable the Co-Pilot as well as calibrate the microphone to increase the software's ability to understand your inputs. Options like "Use Physical Hardware for Flaps/Landing Gear" will enable manipulation of hardware based on its current positioning. Upon selecting either of these options, users assume responsibility for physically adjusting the hardware to ensure alignment with the desired settings for that procedure, including tasks such as raising or lowering the gear lever and positioning the flaps appropriately. The FO will not command flaps/Gear with this feature selected.

For a more realistic experience: Users may deselect the "Procedure Complete Notification" which is a tool added to aid pilots in tracking when and what the Co-Pilot is doing and when the actions being accomplished are complete.

PMDG Settings: Options for you to select what PMDG interaction features you want displayed on L5.

General Settings: Options to set the L5 application as the top most application on your desktop, enable/disable real world schedules as well as the option to show that you are playing LUVCARS in your discord status.
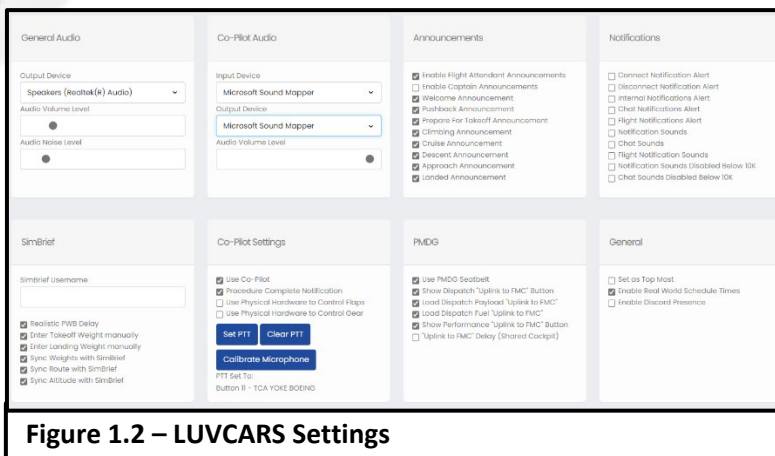

Figure 1.2 – LUVCARS Settings

First Flight

These steps do not need to be performed in this exact order. However, these are the steps we found the most efficient in setting up the aircraft.

1. REQUEST DISPATCH
   a. Using SimBrief either through L5, the SVA Website or SimBrief directly, request and load a Dispatch Release into LUVCARS.

2. REQUEST TAKEOFF PERFORMANCE DATA
   a. Using LUVCARS, request and load your takeoff performance data. Some of this information is needed for the first FO procedure of the day.

3. FIRST OFFICER FLIGHT DECK PROCEDURES:
   a. First flight of day - say "**Flightdeck preparation**."
      i. The FO will follow the First Officer procedures as outlined in the SVA Flows document on SVALife.
   b. Second flight of day and subsequent flights - say "**Through flight procedure.**"
      i. The FO will follow the First Officer procedures as outlined in the SVA Flows document on SVALife.

If using "Uplink to FMC", be sure to wait until "Flightdeck preparation" or "Through flight procedure" is complete.

4. 5-15 min prior to expected pushback time
   a. Start APU - say "**Start APU**"
      i. FO will need at least two minutes after saying this before they will be ready for pushback - please plan accordingly.

CHECKLISTS

In this guide, FO actions/comms are in **GREEN** – Responses from you as CA are in **BLUE.**

In LUVCARS 5 there is a new co-pilot tab which lists out all checklists and the progress of that checklist.

Black/White = Not complete yet | **Orange** = In Progress | **Green** = Complete

Figure 1.3 – Co-Pilot Tab

When utilizing voice commands through checklists there are times when the co-pilot may get stuck on a command and will not take the response you are providing.

To skip a checklist item and move on to the next one simply state: "**Set**" or "**Checked**"

If you need to start over on a checklist, state: "**Cancel Checklist**"

BEFORE START CHECKLIST

To start checklist, say "**Before Start Checklist**"
FMC .... **Programmed**
Briefings .... **Complete**
Oxygen Masks and Qty ...... **Checked**
EECs .... **On**
Navigation Switches .... **Normal**
Display Switches .... **Auto and Normal**
Fuel .... **xx.x Cleared with xx.x Center Pumps Off or On**
   (i.e. 17.3 [seventeen point three] Cleared with 17.3 [seventeen point three] Center Pumps Off)
     Fuel weight is from the FMC based on what is actually loaded into the aircraft.
Passenger Signs .... **On**
Window Heat .... **On**
Hydraulic Pumps .... **A's off, B's on**
Pressurization .... **Set, auto**
Flight Instruments .... ___.___ **Set (i.e. 29.99 [two nine nine nine], set)**
Autobrake .... **RTO**
Takeoff warning horn ...... **Checked**
Parking brake .... **Set**
Transponder .... **TA RA**
Aileron and Rudder Trim ... **Centered**
OFP/Fit for Duty........... **Accepted/Signed**

BEFORE PUSH CHECKLIST

Zero Fuel Weight .... **xxx.x set (i.e. 109.0 [one zero nine point zero] set)**
     Zero Fuel weight is found on the dispatch release.
Gross Weight .... **xxx.x crosschecked (i.e.. 116.9 [one sixteen point nine] crosschecked**
     Gross weight of the aircraft is found on the dispatch release/FMC PROG or INIT REF Page.
PWB Remarks .... **Reviewed**
N1s .... **xx over xx, reduced set (i.e. 27[twenty-seven] over 4 [four], reduced set)**
         xx, max set (I.e. 4[four], max set)
REDUCED THRUST TAKEOFF: SEL TEMP OVER OAT // MAX THRUST TAKEOFF: OAT, MAX SET
Runway .... **xx x set (i.e. 22L [two two left set]**
     Runway selected in L5 performance takeoff calculations
Flaps .... **PWB x, CDU x (Flaps setting from L5 - i.e. PWB 5, C-D-U 5)**
Vspeeds .... **v1, vr, v2 set (i.e. "120[one-twenty], 123[one-twenty-three], 127[one-twenty-seven] set")**
Stab Trim .... **x.x Set (i.e. 6.5 [six point five], set)**
     Trim setting is found in the L5 performance takeoff calculations.
Min Cleanup Altitude .... **xxxx, Set (i.e. 1620[one six two zero], set)**
     Min Clean Up Altitude is found in the L5 performance takeoff calculations.
Flight Deck Door .... **Lights Out**

When ready to push, say **"Pushback procedure"**. Request pushback through GSX, PMDG or any other tool you have.

** START ENGINE TWO FIRST. THEN START ENGINE ONE. **

To Start Engine Two, say "**Start Number Two.**"

Oil pressure rising .... "Oil Pressure"
20% N2 .... Cutoff Switch to Idle – Accomplished by FO
Engine ignites .... "Light Off"
EGT starts to roll back .... "Rollback"

DO NOT START ENGINE ONE UNTIL YOU HEAR "ROLLBACK, Ready to Start Number one"

Once engine two has been started, Start Engine One.

To Start Engine One, say "**Start Number One**". You will hear the same callouts for the left engine.

Oil pressure rising .... "Oil Pressure"
20% N2 .... Cutoff Switch to Idle – Accomplished by FO
Engine ignites .... "Light Off"
EGT starts to roll back .... "Rollback"

Once both engines are started, the clock will start on the FO side and will announce "ready for After start procedure".

After both engines are started and the engines are stabilized, say "**After start procedure**".

SWA policy is to wait 2 minutes at engine idle before departing.

You can turn the APU off yourself or say, "**Stop APU**".

BEFORE TAXI CHECKLIST

Electrical .... **Generators ON**
Probe Heat .... **ON**
Anti Ice .... **OFF/ON** (depending on your L5 performance takeoff setting)
Flight Controls .... **Free**
Flight Deck Windows .... **Closed and locked**
Flaps .... **CDU x, indicates x, Green Light (i.e. CDU 5, Indicates 5, Green Light)**

When crossing a runway, you can say "**Lights on**" to turn on strobes and wing lights. When clear, you can say "**Lights off**" to turn them off.

> ***The FO will only turn on/off their lights – The CA is responsible for taxi, runway turnoff, and landing lights.***

If accomplishing a Bleeds OFF Takeoff, say "**Bleeds Off Takeoff**".

> The FO will turn OFF Engine Bleeds and Turn ON APU Bleed. Once flaps are retracted after takeoff, the FO will reset the Engine bleeds to the ON position and turn the APU Bleed OFF.
> (APU must be running for this Takeoff configuration)

BEFORE TAKEOFF CHECKLIST

To start the checklist, say "**Before Takeoff Checklist**".

Min Takeoff Fuel .... **Verified**
Departure Plan .... **Complete** OR **Not Required**
Attendant Notification .... **Complete**
Electrical .... **Generators ON**
Anti Ice .... **Off** or **On** (depending on your L5 performance takeoff setting)
Packs .... **Auto**
Bleeds .... **Engines On, APU Off** OR **Engines Off, APU On**
                          (depending on your L5 performance takeoff setting)
Start Switches .... **Left, Continuous**
APU .... **Off** or **On** (depending on your L5 performance takeoff setting)
Flaps .... **CDU x, Indicates x, Green Light** (ie. CDU 5[five], Indicates 5[five], Green Light)
Start Levers .... **Idle**
Recall .... **Checked**

Optional: Turn on A/T, advance throttles to at least 40% N1, then say "**Set Takeoff Thrust**".

When airborne and a positive rate has been established, say "**Landing Gear Up**".

Once you pass min clean up altitude, you may say "**Set Speed, Flaps x, Climb Thrust**".
        For a Flaps 1 takeoff, you would say "**Set Speed, Climb Thrust**"
        For a Flaps 5 takeoff, you would say "**Set Speed, Flaps 1, Climb Thrust**"
        For a Flaps 15 takeoff, you would say "**Set Speed, Flaps 5, Climb Thrust**"
        For a Flaps 25 takeoff, you would say "**Set Speed, Flaps 15, Climb Thrust**"

When at a safe speed, you can say retract flaps by saying "**Flaps xx**" (ie. **Flaps 5**, **Flaps 1**, **Flaps Up**)

Passing through 10,000 ft (you will hear the "10,000 ft" call out), start the climb checklist.

CLIMB CHECKLIST

To start the checklist, say "**Climb Checklist**".

Pressurization .... **Checked**
Start Switches .... **Off** or **Continuous**
APU .... **Off**

Climbing through 18,000 ft, set your altimeters to standard and say, "**Eighteen thousand feet, standard set**".
        The wing and logo lights will be turned off.

Approx. 100 nm from T/D, begin running your landing performance numbers, planning for your approach and setting your baro or RA minimums based on the approach and approach type you will be flying.

To set baro minimums through L5, say "**Set Baro minimums x-x-x-x**" (ie. **"Set Baro minimums Zero Two Four Three"** to set baro minimums to 243 feet).

To set RA minimums through L5, say "**Set RA minimums x-x-x**" (ie. **"Set RA minimums One Zero Zero"** to set RA minimums to 100 feet).

20 nm before Top of Descent, perform the Descent Checklist.

DESCENT CHECKLIST

To start the checklist, say "**Descent Checklist**".
Minimums .... **Set**
VRef/VTarget .... **xxx, yyy, Set**
　　　　　　　　　　　　　(i.e. "125[one-twenty-five], 130[one-thirty], Set" – Set from L5 perf)
Autobrake .... **Off** or **2, Set** or **3, Set** or **Max, Set**
　　　　　　　　　　　　　(depending on your preference and stopping margins)
Recall .... **Checked**

When descending through 18,000 ft perform the Approach Checklist.

APPROACH CHECKLIST

To start the checklist, say "**Approach Checklist**". FO will set Wing and Logo Lights to ON – due to this there is a slight delay before the FO will read off the checklist.

Altimeters .... **___.___ Set (i.e. 29.99 [two nine nine nine], set)**
Packs .... **Auto**
Start Switches .... **Left, Continuous**

Passing through 10,000 ft (you will hear the "10,000 feet" call out), notify the Flight Attendant using the Attend button.

FLAP EXTENSION

There are a few different methods regarding flap extension while using L5.
　　You can choose to extend flaps using the command "**Flaps xx**".
　　You can also have L5 extend your flaps and set your MCP speed to the speed bug for that particular Flaps setting by saying "**Flaps xx, Set Speed**".

　　PLEASE NOTE: If you are going to use the "Set Speed" function, be sure to have the MCP speed window open. Press SPD INTV if in VNAV mode.

　　Examples:
　　"**Flaps 1**"
　　"**Flaps 15**"
　　"**Flaps 1, Set Speed**" (Flaps 1 Speed Bug Speed)
　　"**Flaps 5, Set Speed**" (Flaps 5 Speed Bug Speed)

Once you have extended Flaps to Flaps 15, then you can say "**Flaps 30, Set Target**" or "**Flaps 40, Set Target**". You can also simply say, "**Flaps 30**" or "**Flaps 40**" if you want to manage your speed yourself.

LANDING GEAR

There are two different ways to extend the landing gear using L5:
You can choose to extend the gear using the command "**Landing Gear Down**".
You can also have L5 extend the landing gear and extend flaps to 15 by saying:
"**Landing Gear Down, Flaps 15**".

No later than 1500 AGL, complete the **Before Landing Checklist**.

BEFORE LANDING CHECKLIST

To start the checklist, say "**Before Landing Checklist**".

Speedbrake .... **Armed Green Light**
Landing Gear .... **Down Three Green**
Flaps .... **xx, Green Light** (i.e.. **30, Green Light** if Flaps 30 was selected)

After landing and clearing the runway, say "**Flaps Up**". L5 co-pilot will clean up the aircraft and start the APU.

After pulling up to the gate and shutting down the engines, L5 will automatically perform the Engine Shutdown Procedure.

PARKING CHECKLIST

To start the checklist, say "**Parking Checklist**".

Parking Brake .... **Set**
Start Levers .... **Cutoff**
Anti-Collision Light .... **Off**
Fuel Pumps .... **One on** or **Off**
Window Heat .... **Off**
Probe Heat .... **Auto**
Anti Ice .... **Off**
Hydraulic Pumps .... **Electrics Off**
Start Switches .... **Off**
Oil Quantity .... **xx percent** or **Checked** (check quantity)
Hydraulic Quantity .... **xx percent** or **Checked** (check quantity)
Radar .... **Test**
Transponder .... **Standby and zeros**

MISC COMMANDS

"Set Baro minimums x-x-x-x"
>   (ie. "Set Baro minimums Zero Two Four Three")

"Set R A minimums x-x-x"
>   (ie. "Set RA minimums One Zero Zero")

"Set com 1 Unicom"
>   Sets com 1 to 122.80

"Set com 1 xxx.xx"
>   (ie "Set com one, One Two One Point Nine Zero")

"Set speed x-x-x"
>   (ie "Set speed Two One Zero") *requires speed window to be open on MCP

"Set Altitude x-x-x" or "Set Altitude Flight Level x-x-x"
>   (ie. "Set Altitude Zero Eight Zero" (8,000) or "Set Altitude Flight Level Two Eight Zero")

"Set Heading x-x-x"
>   (ie "Set Heading Two Seven Zero")
>   *Must be in HDG mode on MCP

"Set Altimeter x-x-x-x"
>   (ie "Set Altimeter Two Nine Nine Zero")

"Arm Spoilers"
>   Sets Speed-brakes to Armed position

"Bleeds Off Takeoff"
>   Sets engine bleeds to OFF, resets config automatically after Flaps retracted.

"Anti-Ice On"
>   Sets Engine Start to CONT/Engine Anti-ice to ON

"Anti-Ice Off"
>   Sets Engine Start to OFF/Engine Anti-ice to OFF

"Pre De-Ice"
>   Sets Bleeds/Packs IAW De-ice procedures

"Post De-Ice"
>   Sets Bleeds/Packs IAW De-ice procedures

"Clear Left"
>   FO responds "Clear Right"

CUSTOM ANNOUCEMENTS

To initiate a custom announcement:

>   Select the Announcement button in L5

>   >   OR
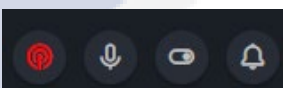
>   Select the PA Button in your *PMDG Aircraft*

Ensure that you re-select VHF-1 on comm panel after announcement is complete.

Once either is selected, press and hold the PTT to record an announcement.

-> Active PA recording

After the PTT is released, the recording will play over the L5 PA system. Bear in mind that it will take a few seconds to process and playback.

If you wish to cancel the announcement from occurring, state: "Cancel Custom Announcement"

Frequently asked questions (FAQ)

To help our staff respond to general inquiries faster, please read the following frequently asked questions to see if they answer any questions before contacting our staff team.

1. **LUVCARS 5 Won't Open.**
   After download/install ensure that "English-US" is set in your Time -> Language -> ->Language and Region settings. Also make sure that you have a headset plugged into the computer that L5 is installed on.

2. **FO isn't responding/Not recognizing my commands?**
   When making commands ensure that the microphone icon on the top of L5 does not have a line through it when your PTT is enabled. If it has a line through it when commanding the PTT check your settings tab., Ensure Microphone gain is increased and initial set up is complete.

3. **Altimeter/Baro/RA not setting on Captain's PFD**
   Ensure Baro/Minimum Sync is set to Sync from Captain. FO input will then apply to both PFDs.

4. **FO is stuck on a checklist item.**
   You can skip a checklist item and move on to the next one by simply stating: "Set" or "Checked". If you want to start over on the checklist, state: "Cancel Checklist."

5. **How do I use my PTT?**
   Simply Press and hold the PTT and state the command or response to the checklist item. The Co-Pilot will accomplish the action once the specific phrase has been heard.

6. **Is Interactive Co-Pilot a part of FS2CREW?**
   Interactive Co-Pilot is a feature of LUVCARS 5 and is not a part of FS2CREW.

7. **Do I need FS2CREW to use the Interactive Co-Pilot?**
   FS2CREW is not required to utilize the Interactive Co-Pilot feature of LUVCARS 5. The interactive Co-Pilot Feature is built into L5.

8. **Are there different voices for the Co-Pilot?**
   No, for now, Rachel is the only voice option for the Co-Pilot. Future updates may yield more options for voices for both the Co-Pilot and Flight Attendants.

9. **Can I customize the FA's announcement audio set provided by L5?**
   No, customization support is currently not available for FA announcements. Pilots can make custom announcements utilizing the new feature outlined on Page 16 Custom Announcements

10. **Can the Co-Pilot act as Pilot Flying or Captain?**
    No, The Co-Pilot cannot fly the plane or act in any capacity other than that of a First Officer/Pilot Monitoring.

11. **What are the exact steps that the Co-Pilot is accomplishing?**
    The Co-Pilot is accomplishing the steps of FO/PM in accordance with the SVA B737 NG/MAX AOM.

12. **Do I have to be a specific rank, like Captain, to use the Co-Pilot feature?**
    No, there are no rank restrictions to using the Interactive co-pilot feature!

13. **Do I have to utilize the Interactive Co-Pilot Feature at all?**
    No, The Co-Pilot feature is an additional luxury that is not required to be used. All previous features of L5 are still possible without the use of the Co-Pilot.

14. **Is the Interactive Co-Pilot feature available on other simulators that are not MSFS?**
    The checklists and announcements work across all Windows based simulator platforms (P3D, XPlane, MSFS, etc). The commands and procedures are compatible with MSFS & PMDG only.

15. **LUVCARS is saying I can only run procedures in PMDG?**

Confirm you have the PMDG aircraft in MSFS 2020 and the SDK Steps have been accomplished.