



SimWorks Studios RV-10 Aircraft Manual





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Revision history

>**January 5, 2023:** Initial version

>**February 6, 2023:** Addition of GTN650Xi



1. About the aircraft

The RV-10 is a true four-person kit aircraft from Van's Aircraft, Inc. capable of carrying four full-sized adults with comfortable leg and headroom. Add to that full fuel and sixty pounds of baggage and you have a four-seat kit aircraft that is a viable alternative to four-seat production aircraft. It is capable of operating out of short runways -grass or paved- and climb well even at high density altitudes, while its powerful engine and clean aerodynamic shape allow it to cruise at up to 200mph! The SWS rendition of the Van's RV-10 comes equipped with the 260hp Lycoming IO-540 engine and features a carbon fiber, custom interior by Aerosport Products.



RV-10 Specifications		RV-10 Performance	
Wing span	31ft 9in.	Never exceed speed (kts)	200
Length	24ft 5in.	Normal operating speed (kts)	156
Height	8ft 8in.	Flaps up speed (kts)	120
Engine (hp)	260	Climb speed (kts)	78
Gross weight	2700bs	Best glide speed (kts)	85
Empty weight	1645lbs	Approach speed (kts)	70-80
Propeller	Hartzell constant speed	Rotation speed (kts)	60-70
Fuel capacity (US gallons)	60	Clean stall speed (kts)	65
Baggage (lbs)	100	Full flaps stall speed (kts)	50



2. Credits

The SWS RV-10 was created under license from Van's Aircraft, Inc. and Aerosport Products and made possible because of the hard work of the SWS development team. The plane underwent many iterations and rebuilds to ensure that it holds up to the highest standards.

- Kevin Miller: 3D Modelling, textures, animation
- Thomas Meixner
- SimAcoustics: Aircraft & cockpit audio
- Alex Vletsas: Programming, animations, project coordination

Finally, we would like to thank our testing team for their patience and help during the long testing period, without which a lot of major issues would go unnoticed.

3. Installation and Settings

In-game, we recommend that the Flight Model is set to Maximum Realism, Modern Flight Model. Control axes should use linear profiles to ensure accurate and responsive control. If you have Sky4Sim NG 1.6.0 or later installed you will also be able to use the included tablet.

4. Product features

The SWS RV-10 is a highly detailed rendition of the real aircraft, coming with the following features:

- Accurate 3D model & animations
- Four custom liveries
- Realistic flight model tested by RV-10 pilots
- Free-castering nose wheel
- Flutter animations from propwash
- Weight-based visibility of copilot in the cockpit
- Weight-based visibility of baggage behind the seats
- Opening exits and cargo door
- Animated air conditioning vents
- Realistic backlighting and floodlighting
- Realistic exterior lighting
- Sky4Sim NG Tablet support
- MSFS rain & icing effects

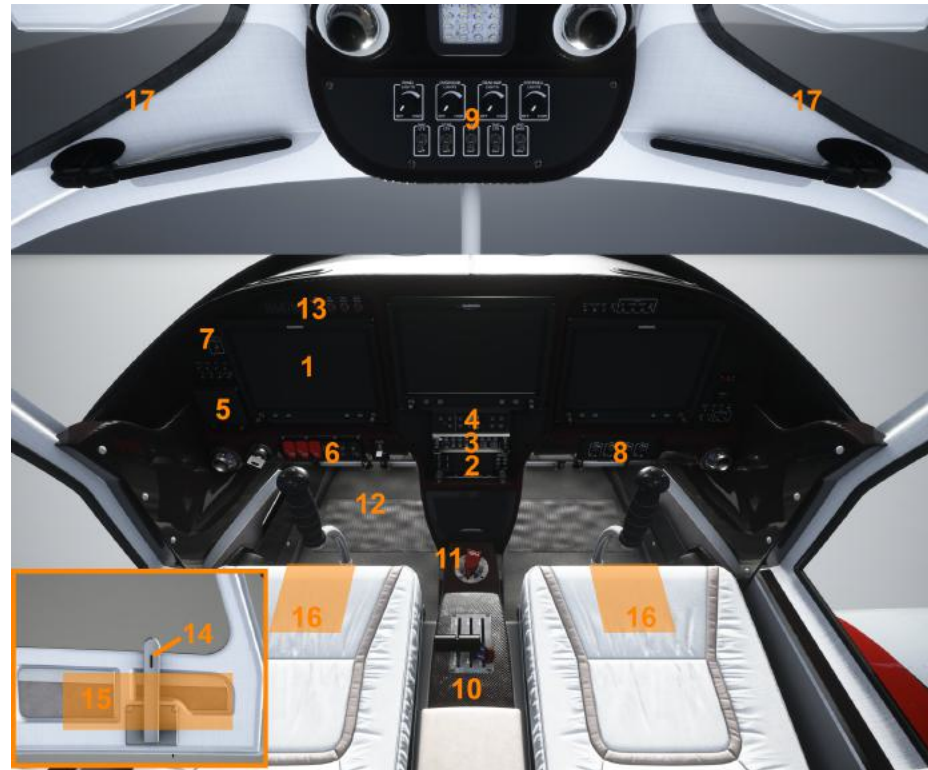


5. Cockpit

5.1 Cockpit overview

For the SWS RV-14 we went with a glass cockpit featuring:

1. Garmin G3X screen (3x)
2. GNS430 GPS and radios
3. GMA347 audio panel
4. GMC305 autopilot
5. G5 backup instrument
6. Switch panel
7. Backup battery switch
8. Defrost & air conditioning controls
9. Lighting panel
10. Engine control levers
11. Fuel tank selector
12. Parking brake clickspot (invisible, between pedals)
13. Warning lights
14. Door unlock handles
15. Door open/close clickspots (invisible)
16. Seat adjustment clickspots (invisible)
17. Sun visors



5.2 Switch panel

The switch panel is located on the pilot's side, under the G3X PFD unit, with the backup battery switch located to the left of it. It contains the following switches, in a left to right order:



- **Engine starter switch (top left) - unlit**
- **Master Battery switch:** Located at the left-most position of the switch panel under the pilot's G3X unit, the switch is used to toggle the master battery.
- **Backup Battery switch:** The switch is located to the left and top of the pilot's G3X unit and is used to toggle the backup battery.
- **Alternator switches:** The SWS RV-10 comes equipped with two alternators, each controlled by its own switch.
- **Avionics Master switch:** Moving this switch to the ON position will provide power to the MFD and right side G3X PFD.

- **Fuel pump switch:** Moving this switch to the ON position will energise the electrical fuel pump. Moving back to OFF will turn the pump off.
- **FLAPS:** This spring-loaded switch is used to set the aircraft's flaps in the desired position. Clicking the UP or DOWN position once will allow you to move the flaps one notch in the desired direction. The available settings are -3°, 0°, 15°, 30° of flaps.

5.3 Pedestal

The pedestal is located between the two front seats.



At the front of the pedestal is the fuel tank selector (1)
Behind the tank selector is the throttle quadrant. From left to right:

- Throttle lever (2)
- Propeller lever (3)
- Mixture lever (4)

Aft of the throttle quadrant is an armrest which can be opened to expose a storage space.

5.4 Lighting panel



The top row of contains four rheostats that are used for interior lighting. From left to right:

- **Panel:** controls the backlighting of the switches on the main and overhead panel
- **Overhead:** controls the intensity of the overhead reading light
- **Rear map lights:** controls the intensity of the rear reading lights
- **Footwell lights:** controls the intensity of the footwell lights

The bottom row contains five switches that control exterior lighting. From left to right:

- **NAV LTS:** Navigation lights switch
- **STRB LTS:** Strobe lights switch
- **LAND LTS:** Landing light switch. Setting this switch to ON will set the landing lights to 100% intensity, overriding the TAXI LTS switch.

- **TAXI LTS:** Taxi lights switch. Setting this switch to ON while the LAND LIGHTS switch is OFF will set the landing lights to 50% intensity, to be used during taxi.
- **WIG WAG:** When ON, this will alternate the landing light brightness from 50% to 100%, enabling them to be used as forward-facing strobes

5.5 G3X

The SWS RV-10 uses the default G3X displays contained in Microsoft Flight Simulator. Three G3X displays are available:

- 2xPFD, one on each side of the cockpit
- 1xMFD in the middle

The Engine Display has been customised to provide you with the necessary information to operate your aircraft.



5.6 GNS430/GTN650NXi



The SWS RV-10 comes equipped with the GNS430 which can be used for flight planning and managing the navigation radios. If the plane detects that you are running the TDS GTN650Xi then it will automatically replace the GNS430 with the GTN650Xi unit. NOTE: The GTN650Xi is only available on PC.

5.7 GMA347



The GMA347 Audio Panel is located in the middle of the instrument panel and can be used alongside the integrated audio panel of the G3X displays.

5.8 G5

The G5 Electronic Standby Instrument is bundled with Microsoft Flight Simulator and can operate as a standby Attitude indicator and as a Horizontal Situation Indicator in the event that the G3X displays are rendered inoperable.



The G5 can be powered by clicking the power pushbutton at the lower left corner of the bezel. The knob on the right side can be rotated to adjust the altimeter barometric reference setting when in Attitude mode, or the course when in HSI mode. Pushing the knob will open the G5's menu which can be navigated by scrolling.

6. Tablet

The tablet is located in the pocket left of the pilot's rudder pedals. You can click on the pocket to stow and unstow the tablet.

For the tablet to work, installation of Sky4Sim NG version 1.6.0 or later is required, otherwise you will get a message on the screen that Sky4Sim is not installed.



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RV-10



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