

Garmin Avionics - Common Errors and Solutions

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Most flight instructors are good at teaching pilots how to do things properly. Once proficiency is attained, it's also important to teach common errors and how to properly solve them in the moment. This is especially true when using sophisticated navigation and auto-flight systems.

Below is a list of common errors and how to fix them. Instructors should create these scenarios in the simulator and/or aircraft to practice solving the errors *when* (not if) they are made.

This training aid is intended for instrument pilots; however, non-instrument pilots should find it useful as well.

Please [contact me](#) if you have questions or would like to suggest other common errors.

	Common Error	Signal(s) / Indication(s)	Recommended Solution(s)
1	Loading the wrong waypoint	This error commonly occurs when the pilot manually enters a waypoint and then loads an instrument approach that contains the same waypoint. It's important to ensure you are navigating to the one you want.	Use a memory aid like FIST every time you navigate to a new waypoint. Fix/Freq (double-check it's correct) Identify (Morse code and/or read it) Select (correct CDI/mode) Track (verify CDI on correct course)
2	Not continually verifying the "active waypoint"	The pilot focuses on turning knobs and pushing buttons but does not verify their active waypoint is correct.	The active waypoint is the one you're currently using for GPS navigation. It is shown at the top center of the PFD and should be a regular part of your scan. It's also important to understand the difference between "direct-to navigation" and "flight plan navigation." See your Garmin manual for more information. This article is also helpful. Pro tip: Always keep your active flight plan visible on the PFD or MFD so you can see what's coming next.

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3	Not watching for the 10-second countdown	The pilot ignores the 10-second flashing countdown that occurs at the top of the PFD before reaching each flight plan waypoint.	This flashing message is seen at the top of the PFD. Pay attention to the next course it is about to turn to. This is your last chance to fix an error (like the SUSP button). Pro tip: When the flashing message shows a new DTK (Desired Track), turn the heading bug to that new track before making the turn.
4	Forgetting to press the SUSP button	1) The pilot is cleared to hold and forgets to SUSP waypoint sequencing. 2) The pilot is cleared for the approach and forgets to un-SUSP waypoint sequencing.	Using memory aids like the Five T's and FIST is the best way to prevent these errors. The previous solution (10-second countdown) will also help trap this error right before it occurs. Pilots should also practice solving this error after passing the active waypoint (usually the holding fix) by: 1) Holding. Use the FMS knob to highlight the hold, then press MENU and ACTIVATE LEG. Note: This will cause the FMS to navigate using the shortest route to the holding fix. The pilot may need to use other means of navigation (i.e. outbound heading and timer) to get re-established on the inbound leg of the hold. 2) Cleared for the approach. Use the FMS knob to highlight the fix in front of them, then press MENU, and ACTIVATE LEG.
5	Not properly arming GP/GS to capture	The pilot knows they are supposed to press the APR (Approach Mode) button when cleared for the approach, but they don't really understand what it does (or what to look for).	Learn more at: https://flywithjim.com/a-z.php#apr-key Pro tip: When using the flight director and/or autopilot, always double-check the flight mode annunciator (AKA scoreboard) to verify the correct active and standby modes are selected.

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6	Improper use of Vector to Final (VTF)	The pilot uses VTF when they should not or they don't use VTF when they should. This issue has been made worse in our industry by instructors making blanket statements about VTF being "good" or "bad."	Like any tool, VTF needs to be used properly and when appropriate. In general, activating VTF causes the FAF to become the active waypoint and extends the final approach course out (with no procedure turn). Some avionics keep one or more waypoints (important for step-downs) before the FAF, and others do not. Pilots need to understand what happens when they select VTF on their avionics.
7	Activating the wrong leg	Pilots don't know where to put the FMS cursor when inserting a waypoint and/or activating a leg in the flight plan.	I recommend "Setting the table" as explained in this short video .
8	Not understanding what OBS mode does with a GPS (magenta) CDI	Pilots don't know how to intercept a bearing to/from a GPS waypoint	This 9-minute video does a good job explaining it. Pro tip: For most scenarios, it's best to deselect OBS once the desired course is set.
9	Continuing a VOR approach in GPS (magenta) without monitoring the underlying navigation	Pilots don't follow AIM 1-2-3 c. NOTE 5 .	When available, it is usually best to keep the CDI on GPS (magenta). My understanding is that having a bearing pointer tuned to the VOR satisfies the requirement to monitor the underlying navigation. The Cirrus Perspective + system provides a white/gray CDI that satisfies this requirement as well. Pilots should be trained to properly set up their radios and ensure the underlying navigation is included in their scan. Additional reference: Paragraphs 1.a.(2) and 9.a.(1) through (3) of AC 90-108.

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10	Changing the flight director mode before setting a target heading or altitude	1) The pilot selects HDG mode before bugging the target heading. This may lead to a turn being initiated in the wrong direction. 2) The pilot selects VS or FLC to climb or descend without first bugging the desired altitude. This is a dangerous habit (especially on descents) because it sets the plane to climb or descend without a stopping point.	First, it's important for pilots to understand the relationship between the flight director and the autopilot. The flight director can (and should) be used without the autopilot, but the autopilot cannot be used without the flight director. The flight director is the brains and the autopilot is the muscle. We often talk about various "autopilot modes," but it's more accurate to refer to them as "flight director modes." From there, it's just a matter of selecting the human pilot or the autopilot as the yoke actuator that will follow the flight director. The mantra to teach/practice is, "Tell it <i>where</i> to go, THEN tell it <i>how</i> to get there."
11	Not being familiar with the MFD	The pilot does not know how to access basic information in their MFD.	Practice accessing various information from the different pages in the MFD. The large FMS knob navigates "Chapters" and the small FMS knob scrolls the "Pages." Pilots should familiarize themselves with all the chapters and pages in their MFD. Pro tip: Practice with the Garmin PC Trainer that is specific to your aircraft. This 7-minute video shows the software in action.

Be sure to check out my other Garmin Avionics observations, suggestions, and resources at: <https://flywithjim.com/a-z.php#garmin-avionics-thoughts-and-suggestions>

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