

OAZ Flight Control System (FCS) and Auto Pilot

With new people being converted onto the Saratoga, and following its upgrade, we've asked Peter Hocking, who has a lot of time on this beautiful machine, to write a few notes on the auto pilot operations. This is not a substitute for the FCS manual which every Saratoga pilot should have available for reference - but the summary of key points.

Firstly it is basically unaffected by the Garmin upgrade.

The most common cause of confusion is with the vertical (pitch) trim, so let's talk about it first.

With the FCS Master Switch turned on after start and with:

- The auto pilot off, you trim using the thumb switch on the control column
- The auto pilot on, you trim using the rocker switch at the left of the auto pilot control box. (Using the thumb switch with auto pilot on turns the auto pilot off)
- The auto pilot on, altitude hold off, the rocker switch operates like a conventional trim - the nose will keep rising or lowering for as long as you maintain pressure on the switch.
- The auto pilot on, altitude hold on, the rocker will initiate a standard rate of climb or decent until you release the pressure on the switch. It will then hold the new altitude you have reached.

Typical flight operations:

- Enjoy flying by hand at least till you've intercepted the outbound track.
- With altitude set for your desired rate of climb, set the heading bug, turn on the auto pilot and press Heading Hold (HDG). Adjust trim as required using the rocker switch on the left of the auto pilot control box.
- At top of climb, trim Forward using the rocker switch until flying level
- Then press Altitude Hold (ALT) if you wish. Be gentle to the equipment. Don't push ALT until you have the aircraft level
- In turbulence press ALT again to disengage the altitude hold - chasing the altitude is too rough on equipment and occupants.
- Approaching top of decent, press ALT to disengage the altitude hold if it is on.
- Slowly reduce power as you have been taught and trim forward to achieve the desired rate of decent. The Saratoga is a slippery machine and the nose will not fall away much by power reduction alone.
- When you are ready to manoeuvre around the destination area, turn the auto pilot off and enjoy flying by hand again trimming with the thumb wheel on the yoke. Also at this time press Flight Director (FD) on the auto pilot control box to get rid of the Yellow Bird on the Artificial Horizon which can be distracting.

NAV Tracking

- I prefer to fly headings with reference to GPS or ground-based aids rather than Autopilot Nav Tracking (I think it keeps you more aware of what is happening as to the progress of the flight. Also you don't get the oscillations e.g. with VOR station passage) but Nav Tracking has its place and works fine. The auto pilot uses the information provided by the HIS. The HSI in turn uses either VHF ground based aids or the GPS - whichever you have asked mr Garmin to select for you. Establish yourself on track and press NAV instead of HDG.
- For Nav intercepts and more advanced features, you should study the FCS manual. Some of the highly automated and complex procedures require lots of practice and recent experience and in Alpha, are seldom or not at all used.