

S/W version 1.31 manual updates.

Setup

Add the following to the Setup section of the manual.

9. HOLD PATTERN: (Requires “P” Option): The emergency IFR hold pattern operation is available with **PortaPilot** option “P”. Once activated, the **PortaPilot** flies the aircraft towards the hold waypoint (HWPT), determines the hold entry type (Direct, Parallel or Teardrop), then guides the aircraft through the entry phase and the hold. It sequences the NAV modes through the LVL, HDG and NAV modes, as indicated by the illumination of the respective indicator. Do not confuse holding pattern with holding altitude.

Holding pattern entry and execution is one of the more complex maneuvers while flying under IFR flight rules. The **HOLD PATTERN** compound operation simplifies this process, allowing the pilot to perform it hands free. The pilot must enter the three hold parameters; inbound magnetic course, turn direction and the time or distance of the hold. Then the GPS navigator is set, and the operation is activated. Provided the **PortaPilot** is **VNAV** model, it is recommended to arrive at the HWPT with stabilized altitude.

The **PortaPilot** is not certified for IFR operation, or anything else; therefore only use it in an emergency if all other options for a safe flight outcome are exhausted.

The sequence of operations required by the pilot:

- 1) Enter the hold parameters **Setup→HOLD PATTERN**. Do this anytime prior to activation.
- 2) Set the GPS navigator for Direct-To to the HWPT and activate it.
- 3) Activate the hold using of the ▲ or ▼ key with cursor on the “**ACTIVT**”.
- 4) Once the aircraft is on the first outbound segment, the pilot is prompted to enter the inbound course. Do this by selecting the GPS Direct-To menu, then the Course-To field and entering the magnetic inbound course. Don't forget to activate the GPS.

Once the “SET GPS CourseTo” prompt is displayed, the pilot has about a minute and a half to set it to the Course-To. Do not enter it prior to the prompt, or after it is extinguished.

Once within range (about 1.5NM) the type of hold entry is determined and executed, followed by tracking the holding pattern. The aircraft remains in the hold until the **NAV** key is pressed. Once terminated, the **PortaPilot** resumes normal operation in **LVL** mode. During the hold, aircraft pitch variations are normal due to the frequent turns. These can be handled by trim adjustments. It can't be emphasized enough that the pilot must be in control, and stay vigilant at all times.

The Hold Pattern parameters:

- 1) Hold inbound magnetic heading: 0° to 359°
- 2) Direction: L – left turns, R – right turns
- 3) Time/Distance: 1m, 2m, 2nm, 3nm, 4nm, 5nm, 6nm, 7nm, 8nm
- 4) Head/Tail winds limits: 40KT

The hold parameters remain in memory as long as the **PortaPilot** is powered.

Functionality during HOLD PATTERN operation:

The only active keys during the hold are the **NAV**, **HLD**, and ▲, ▼ keys.

NAV key – Terminates the hold, resuming normal operation in **LVL** mode.

HLD key – Toggles between altitude hold and manual elevator control.

While holding altitude (**HLD** indicator illuminated), the ▲ and ▼ keys adjust the hold altitude in 20 feet steps. If not holding altitude the ▲ and ▼ keys adjust the elevator actuator extension.

Limits:

- 1) Minimum distance to HWPT required for entering hold parameters: 2NM.
- 2) Minimum distance to HWPT required for activating hold (**ACTIVT**): 1.5NM.
- 3) Maximum ground speed: 150KT
- 4) Minimum ground speed: 40KT
- 5) Once the "SET GPS CourseTo" is displayed, the pilot has about 90 seconds to enter the CourseTo value to the GPS.

Wind correction is applied to time based holds. It starts once inbound and outbound segments are flown. The outbound is adjusted as to comply with the specified inbound time. It is readjusted on each turn. In distance based holds, the distance is a DME equivalent distance. That is from the end of the outbound segment to the HWPT.

6. CENTER DISPLAY ↵ :

Add the following items to the list of displayed parameters:

GPS ground speed: Displays GPS ground speed of an active GPS navigator attached.

Wind Speed: Displays the estimated tail (TWind) or head wind (HWind).

Configuration

Add the following item to the Configuration section of the manual:

9. ▼--KEY=NOSE UP ↵:

DISABLED (default): ▼ key results in **nose down** attitude and ▲ key results in **nose up** attitude.

ENABLED: ▼ key results in **nose up** attitude, and the ▲ key results in **nose down** attitude.

Add to the ***Elevator Trim Indicators*** section:

With the ▼--KEY=NOSE UP ENABLED, there is a reversal from the default sense of the trim indicators. That is, the illumination of the **TRIM UP** indicator (upper indicator) requires trimming the aircraft elevator for **nose down** attitude, and with **TRIM DOWN** indication (lower indicator), adjust the aircraft elevator trim for **nose up**.