

## SECTION 4 ADDITIONAL FEATURES

### 4.1 GPS STEERING (GPSS)



**NOTE:** This section is only applicable to non-Garmin autopilots.

When installed with the appropriate interfaces, the G5 can interface to some third-party autopilot systems.

#### 4.1.1 GAD 29B (OPTIONAL)

The GAD 29B (optional) is an adapter that converts digital heading and course data into analog signals used by analog autopilot systems. The GAD 29B is installed remotely between the G5 and an existing autopilot. The analog signals from the GAD 29B mimic those of spinning-mass heading gyros that provide data to the autopilot and allow the gyro to be replaced by the G5 and GAD 29B combination. The GAD 29B is also used to interface certain Garmin IFR navigators with the G5.

The GAD 29B sends analog information about the G5's heading bug to a third-party analog autopilot, allowing it to operate in HDG mode and follow the G5 heading bug. The navigation course selected on the G5 is also sent to the analog autopilot, enabling proper operation of the autopilot's NAV mode.



**NOTE:** If multiple navigators are configured, course data is sent by the GAD 29B for navigator #1 only.



Figure 4-1 GAD 29B (Optional)

GPS Steering (GPSS) provides roll command signals calculated by the GPS navigator to the autopilot in order to allow the aircraft to anticipate turns, make smooth transitions when passing waypoints, and fly leg types such as procedure turns and holding patterns.

Some autopilots have built-in support for GPS Steering (GPSS) commands from a GPS navigator. These autopilots receive digital GPSS commands directly from the navigator. Refer to the Airplane Flight Manual and autopilot system documentation for instructions on how to use the autopilot's GPSS function.

For older autopilots that do not have built-in support for digital GPSS signals, GPSS functionality may be emulated using the analog heading bug output of the G5 and GAD 29B, by operating the autopilot in HDG mode and selecting GPSS from the G5 menu.



**NOTE:** If multiple navigators are configured, GPSS emulation is supported for navigator #1 only.



**NOTE:** GPSS commands are not sent to the autopilot when a VLOC source is displayed on the HSI.

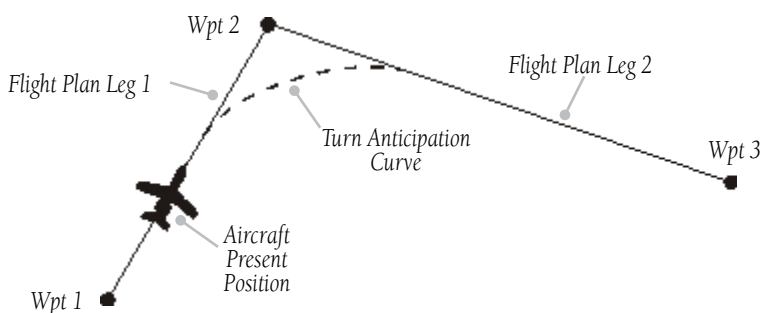


Figure 4-2 GPSS Turn Anticipation

### Enabling/Disabling GPSS Mode:

- 1) Press the Selection Knob to display the Menu.
- 2) Turn the Selection Knob to select **GPSS**.
- 3) Press the Selection Knob to enable/disable **GPSS** Mode.

When GPSS is selected on the G5, the heading bug will change to a hollow outline, and a crossed-out heading bug symbol appears on the G5 indicating that the autopilot is not coupled to the heading bug. The heading bug is still controllable and may still be used for reference.

When the G5 and GAD 29B are providing analog GPSS emulation, GPSS turn commands from the navigator are converted into a heading error signal to the autopilot. When the autopilot is operated in HDG mode, the autopilot will fly the turn commands from the GPS navigator. If the GPSS data is invalid (for example, if there is not active GPS leg) or the selected HSI source on the G5 is not GPS, the annunciated "GPSS" text will turn amber and a zero turn command will be sent to the autopilot.



Figure 4-3 GPSS Enabled - PFD

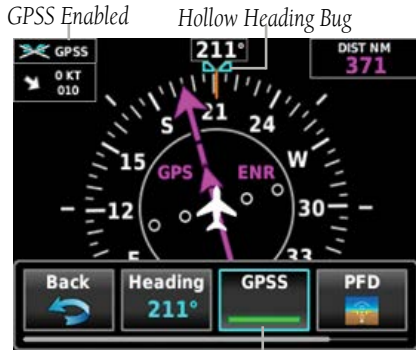


Figure 4-4 GPSS Enabled - HSI

## 4.2 GAD 13 (OPTIONAL)

The GAD 13 (optional) is an adapter that converts Outside Air Temperature (OAT) probe information for use by the G5. When installed appropriately, the GAD 13 communicates OAT, True Airspeed (TAS), and Winds (direction and velocity) to one, or multiple, G5 units.

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Figure 4-5 GAD 13 - PFD



Figure 4-6 GAD 13 - HSI