

# Bendix/King KI 825: An HSI goes glass

Over the past four years, multifunction displays (MFDs) have changed the face of general aviation cockpits. MFDs are standard gear in many new airplanes, improving situational awareness and forming a platform on which to display everything from basic moving-map functions to data-linked weather and traffic to terrain data. Even existing airplanes have had their panels tweaked and stretched to accommodate these newfangled conveniences. But pity the pilot who doesn't have the panel space to accept the big displays.

Honeywell's Bendix/King business unit, hearing the frustration, has introduced the KI 825 electronic horizontal situation indicator (EHSI). More than just an HSI replacement, the unit is a "safety display system," according to King, because of its ability to interface with various other sensors. More on that later.

Those seeking some of the functionality of an MFD, but with a tight panel, may find the \$12,000 list price a bargain com-



## Smarter than your average HSI

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pared to having to reconfigure the panel to accommodate a larger display. Regardless, the 825, like any HSI, also requires a remote compass system. Sized to the ATII standard of 3.26 inches by 3.26 inches, the unit should fit most panels. It is 7.67 inches deep and weighs 3 pounds. It's not real particular about voltage—anything from 11 to 33 volts is fine. Those flying with a conventional King KI 525 HSI should check with their dealer about the prospects of a trade-in program that can be worth between \$600 and \$2,000, depending on the model of KI 525. The KI 825 is designed to be an easy replacement for the mechanical HSI.

The all-solid-state 825 with its color active-matrix liquid-crystal display (LCD) performs all of the functions you

would expect of an EHSI. A touch of the Menu button on the bottom center of the display brings up the many configuration options that allow the pilot to quickly turn on and off features, and swap navigation sources. With the menu options displayed, the pilot uses the knobs to move a cursor around to select choices.

Besides the usual VHF and GPS navigation inputs, the system also can receive information from the L-3 Communications Stormscope WX-500 and from a variety of traffic alert systems.

The KI 825 can be operated in one of three modes: HSI mode, 360-degree map mode, and arc map mode, which shows information about 45 degrees on either side of the aircraft heading.

In the HSI mode, the display shows a compass card, navigation source, heading bug, bearing pointer, course arrow with course deviation indicator and course readout, to/from indicator, groundspeed and time to station, and glideslope indicator. A change to map mode removes the course arrow and moves the CDI and to/from indicator to the bottom of the display. If sourced to a GPS, the display can depict flight plan and direct-to waypoints, course lines, and map scale. With a Stormscope on board, lightning information can be overlaid on the map.

Two types of navigation sources are possible: VOR and GPS. If in the VOR mode and a localizer frequency is tuned, the VOR annunciation on the left side of



In the GPS Map mode (previous page), the KI 825 depicts flight plan waypoints and route along with lightning data. In the localizer mode (left), a glideslope indicator appears on the right side of the display. The GPS HSI mode (right) shows a full compass rose. The white arrow in the bottom left of the image points to the tuned VOR.



The menu cursors are controlled by turning the left and right knobs (left). The KI 825 brings a lot of situational awareness to the cockpit of this Beechcraft Baron (right).



the display changes to a LOC annunciation. When a localizer with glideslope is tuned, glideslope symbology appears down the right side of the display directing vertical guidance.

A knob on the bottom right of the display moves the heading bug, which can be auto-synchronized to the current heading by tapping the Menu button and then holding the Menu button for a second. In the VOR/LOC mode, the knob on the bottom left moves the course pointer. In GPS Leg mode, the course pointer is replaced with desired track. When in the GPS omni-bearing selector mode, the course set knob selects the desired OBS course.

Honeywell does a nice job of using color to help orient the pilot to what is displayed and what mode the unit is in. For example, cyan is used to depict GPS course information in the en route mode. When changed to the approach mode or when using VOR mode, the information switches to green. It's a handy reminder during a GPS approach that

the GPS receiver has truly switched to the active approach mode.

Using the menu options, the pilot can choose what gets displayed. For example, in a GPS map mode, the flight-plan route might be displayed, with the active leg in magenta and subsequent legs in white. The name of the active waypoint will be shown in white type overlaid on a magenta block. The pilot might also choose to overlay a second bearing pointer, tuned to a nearby VOR, for example. Or the second pointer could be used to point to a second waypoint if the aircraft has two GPS receivers. If the aircraft has two VOR receivers, the pilot can navigate to one and use the bearing pointer to show the other.

When GPS information is available, the display shows the usual calculated information you would expect, such as distance to the waypoint and the pilot-selectable choice of either groundspeed or time to station below it.

We had the opportunity to fly behind the KI 825 on a sunny day and found

the display to be highly readable both straight on and from an angle. In fact, the screen is easy to read even from angles as great as 80 degrees.

Honeywell has been making electronic displays for many years and seems to have concentrated its efforts on making this one visible in all conditions. An avionics technician who has installed several KI 825s praised the simplicity and elegance of the design. From an installation standpoint, the KI 825 is largely self-contained, requiring no external relays and fewer wires in general than most EHSIs. In addition, the unit is easily configured to accommodate a variety of avionics.

**i** Links to additional information about EHSIs may be found on AOPA Online ([www.aopa.org/pilot/links.shtml](http://www.aopa.org/pilot/links.shtml)). Keyword search: EHSI.

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