

# Synthetic Vision EFIS for Helicopters

# COBHAM

3D terrain, traffic and towers. A new dimension in safety. The lightest, most comprehensive system including HTAWS, Highway-In-The-Sky (HITS) and Hover Vector.

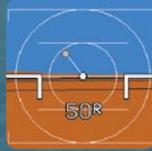
The most important thing we build is trust



**3D SYNTHETIC VISION / HIGHWAY-IN-THE-SKY**  
Unprecedented situational awareness and navigational command



**"LOOK AHEAD" TAWS**  
Immediately know if you're turning into danger so you can recover before it's too late



**HOVER VECTOR**  
Enables precise static hover by providing precise feedback during exacting procedures



**TOTAL INTEGRATION**  
Fully integrates with your existing avionics for a seamless experience





## 3D Synthetic Vision

See your surroundings even when visibility is less than ideal



### What is conformal 3D Synthetic Vision?

The image at right shows the Primary Flight Display while flying into the valley pictured above. Note how accurately the display *conforms* to the actual terrain. That's conformal 3D Synthetic Vision.

Now imagine the situation—not as sunny VFR—but as a nighttime medical evacuation under deteriorating weather conditions. How much more confident would you feel with 3D Synthetic Vision showing you exactly where the surrounding hazards are?



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3D Synthetic Vision EFIS  
A new dimension in safety

1 The HITS tunnel is always 400 feet wide by 320 feet high, spaced at 2000 feet intervals.

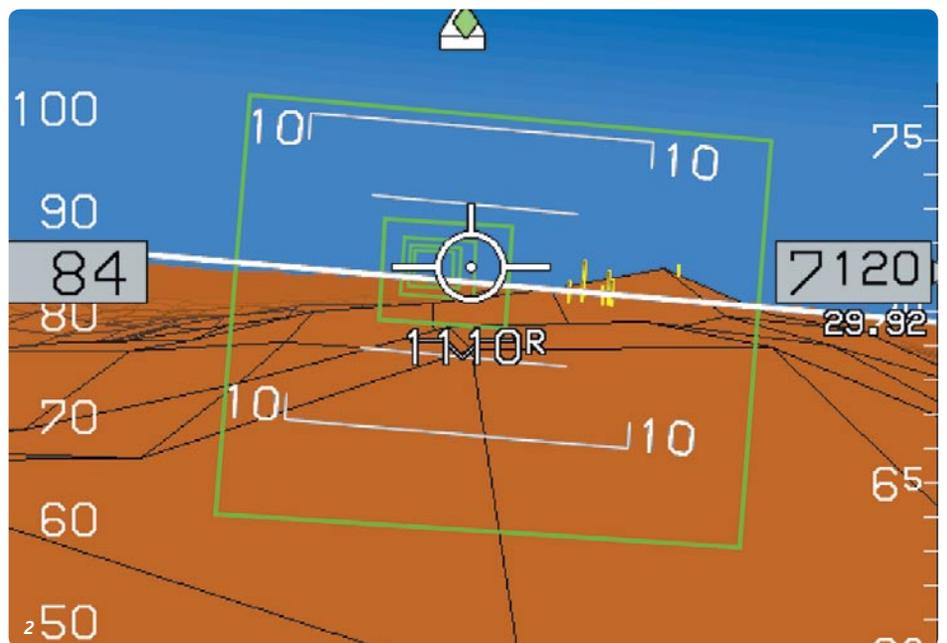


## Highway-In-The-Sky (HITS)

Highway-In-The-Sky (HITS) allows you to fly with ILS precision to any point in the world. Your route appears on the PFD as a series of green boxes superimposed over the flowing terrain of the 3D Synthetic Vision. You simply fly through the boxes to follow your route.

The applications are endless. For example, to comply with noise abatement regulations, you can create a GPS course just once, then fly it exactly the same way every time. Or quickly plot a course to latitude/longitude coordinates received while en route to an emergency scene. HITS is simply the surest, easiest, most accurate way to fly. Period.

2 The green boxes that create the Highway-In-The-Sky route on the PFD lead you safely along your pre-planned route to your destination.



Highway-In-The-Sky  
Experience the future of flight management



3

3 The screens inset in the photo above illustrate how Highway-In-The-Sky (HITS) makes flying to any spot on the face of the earth simple. The nav display on the the Multi-Function Display (MFD) shows your overall course. On the Primary Flight Display (PFD), the green HITS boxes lead you unerringly to the landing pad on an oil platform, a rooftop, or any lat/lon or radial/distance point you choose. Highway-In-The-Sky is also ideal for water search and rescue. You can easily program a search grid that blankets a sector and then fly it with unerring accuracy to ensure that no area within the sector is missed.

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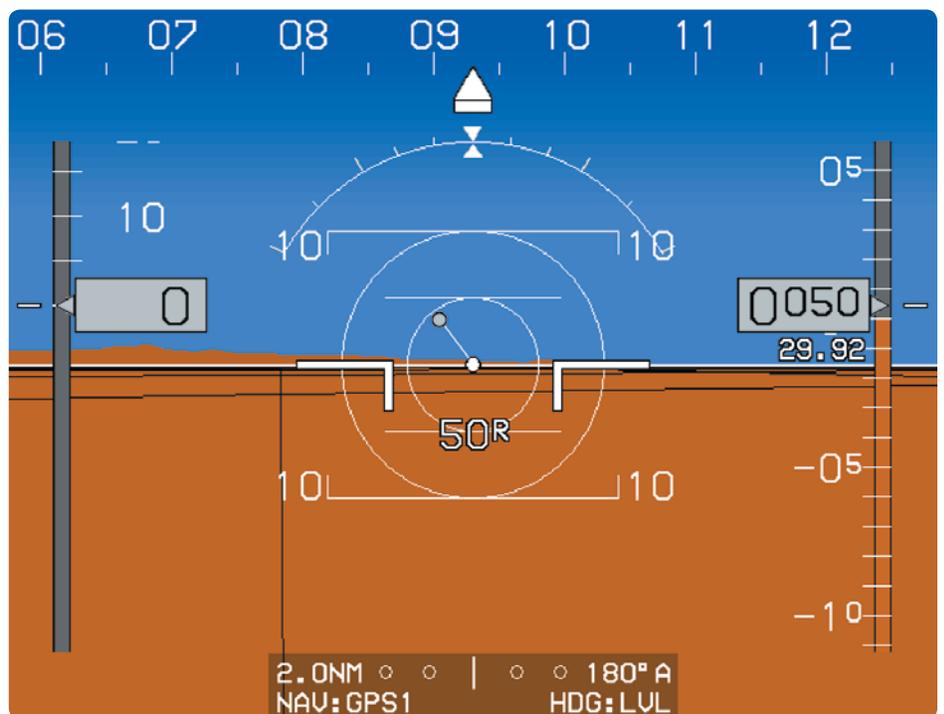
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## Hover Vector

The Hover Vector enhances productivity and control, providing precise feedback during surveillance, long-line work, and other precision procedures.

When airspeed drops below 30 knots, the Flight Path Marker on the Primary Flight Display converts to a “bull’s-eye” ringed by concentric circles that delineate 15- and 30-knot ground speeds. Simply center the gray dot (which represents your helicopter’s ground speed and direction of drift) on the white bull’s-eye for a precise static hover.

In addition to the depiction on the Primary Flight Display, the Cobham EFIS also provides an expanded version of the Hover Vector on the Multi-Function Display. This makes it easier for pilots to quickly identify and respond to small changes in aircraft position.



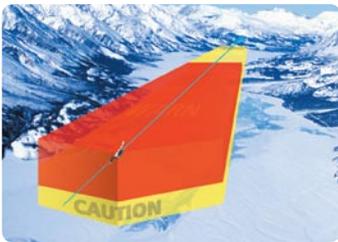
Hover Vector  
Simplify exact stationkeeping



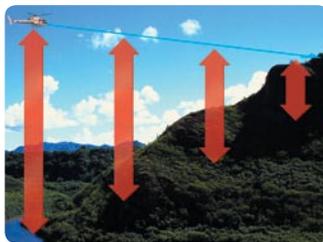
1 Two separate Hover Vector displays—one on the PFD and an expanded version on the MFD—provide added confidence and safety in low-visibility conditions.

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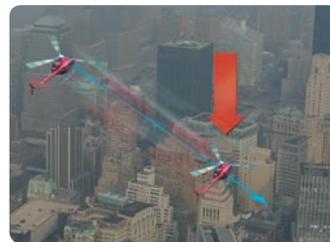
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Forward-Looking Terrain Alerts



Excessive Closure to Terrain



Excessive Rate of Descent



Sink Rate after Takeoff or on Missed Approach



## Helicopter TAWS (HTAWS)

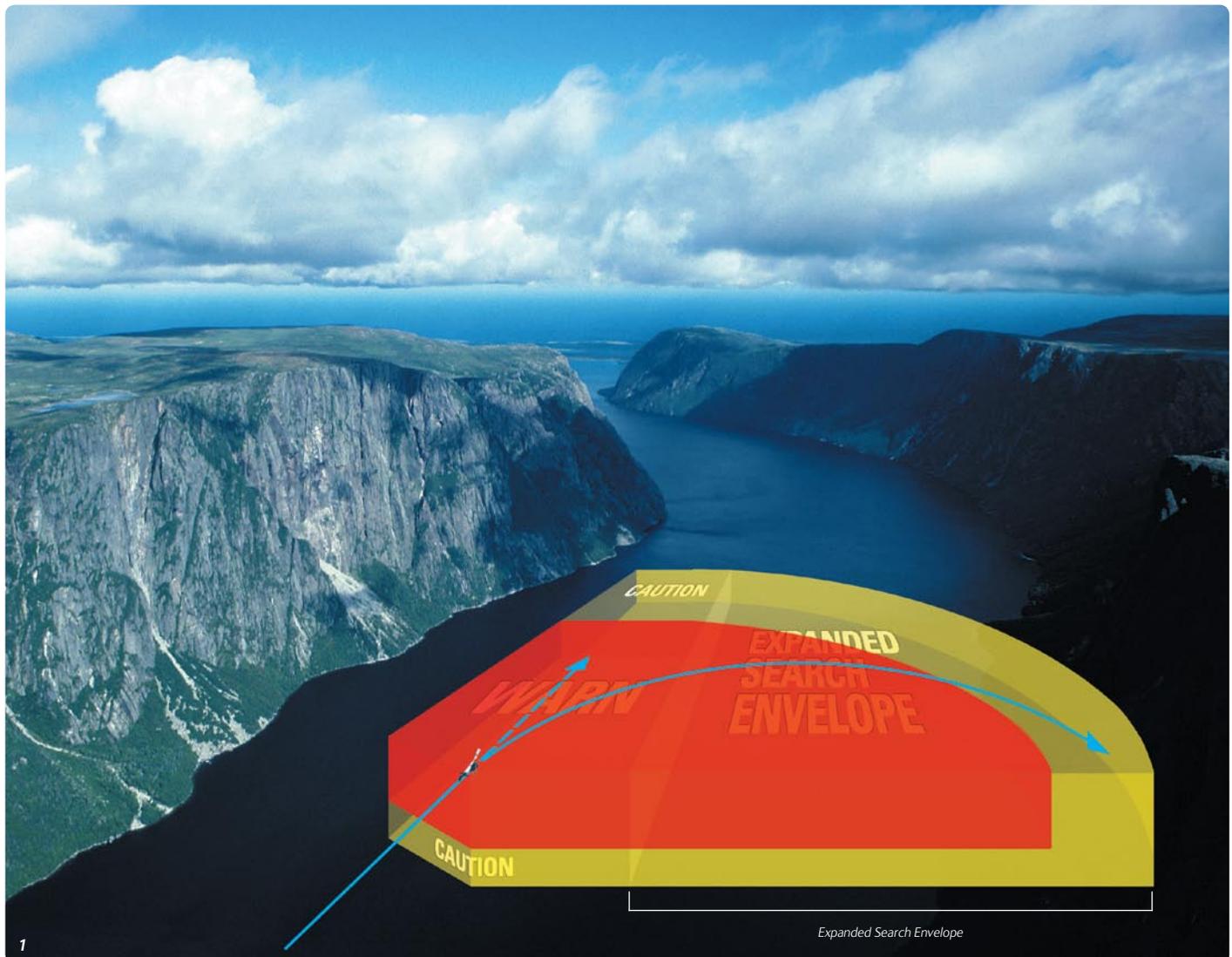
Helicopter TAWS (HTAWS) gives you critical visual and audio cues when terrain or obstacles present a hazard. The Class A or B HTAWS in the Cobham EFIS monitors the situations listed below to dramatically increase situational awareness and safety. An inhibit switch minimizes false alarms. And a low-altitude mode provides enhanced safety when operating at lower-than-normal altitude.

- Alerts you to terrain or obstructions in a search envelope that looks ahead one minute and expands to the side when turning
- Warns you of hazardous AGL conditions (like flying level over rising terrain)
- Alerts you to a high descent rate at low altitude
- Warns you when a sink rate is detected immediately after takeoff or during a missed approach

## Helicopter TAWS (HTAWS) Always know when danger threatens

*"The combination of traffic alerts—both aural and visual—and terrain and obstruction warnings has enhanced our situational awareness greatly. Increased situational awareness is the goal of all safety organizations, and I can say without hesitation that we have specified Cobham as standard equipment on all our helicopters for this very reason."*

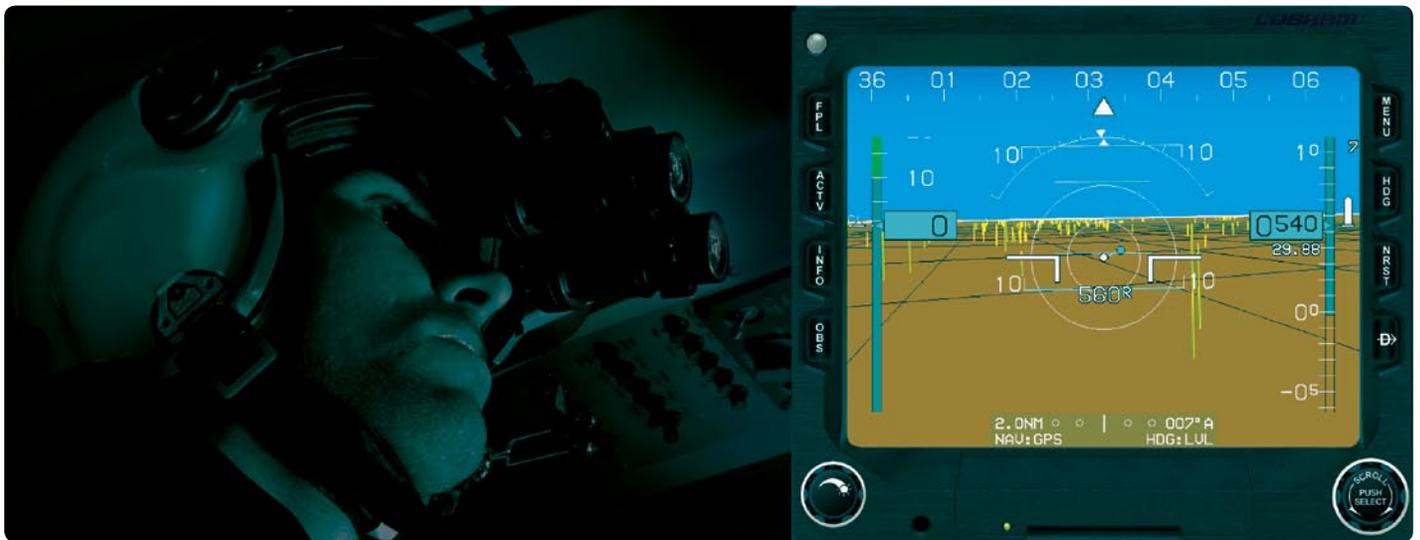
David M. Bjellos, Florida



1 Only the Cobham EFIS offers Helicopter Terrain Awareness and Warning (HTAWS) with Horizontal Projected Flight Path technology, which provides an Expanded Search Envelope that warns you the moment you start turning into trouble so you can take corrective action before it's too late.

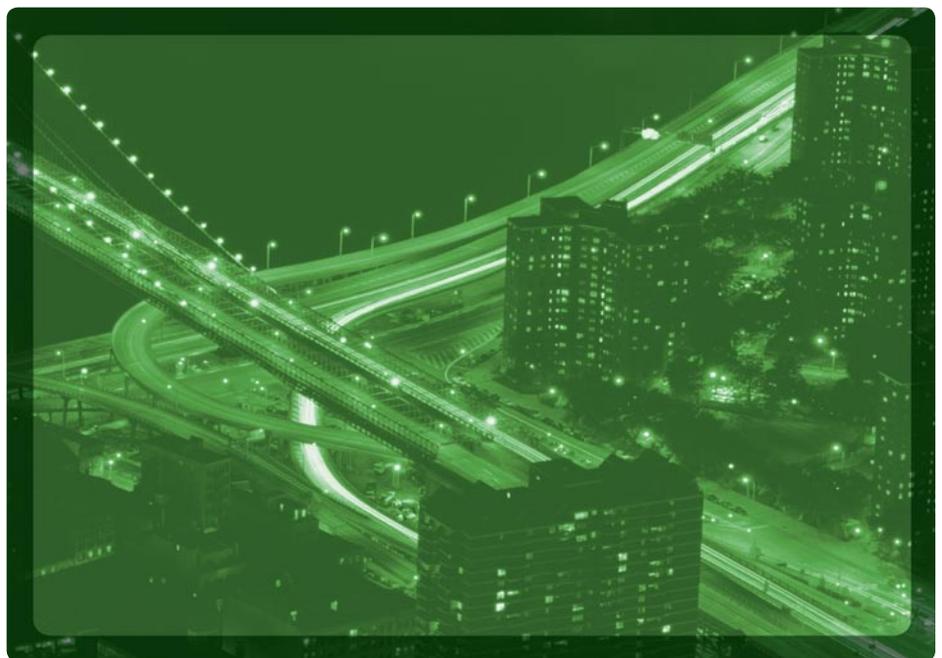
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## Night Vision Goggle (NVG) compatibility

The Cobham EFIS gives you an edge when flying nighttime police, rescue, surveillance, and homeland security missions. NVG compatibility—combined with the enhanced situational awareness of 3D Synthetic Vision and HTAWS—ensures the safest possible night flying, without the need for additional equipment or options.



## Night Vision Goggle (NVG) Compatibility Fly any mission with the Cobham EFIS

*"The Cobham EFIS is one of the most significant pieces of equipment since the introduction of GPS to enhance the situational awareness and navigational safety of pilots in the cockpit. The equipment is a major workload reliever, and as such, reduces stress in the cockpit."*

*Mark Friskel, Pilot, MD Helicopters, Mesa, Arizona*



### **Safer, more confident command of your helicopter**

As impressive as words and pictures may be, they fall far short in conveying the startling difference that the Cobham EFIS brings to flying. It is a feeling and a confidence beyond anything you have ever known before. It can only be appreciated by experiencing it in actual flight. Contact Cobham Avionics to schedule a demonstration flight and discover the next generation in helicopter avionics...today.

## Primary Flight Display Modes



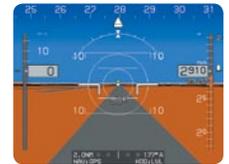
PFD with Terrain



Basic PFD



Unusual Attitude Recovery



Hover Vector

## Multi-Function Display Modes



Moving Map with Terrain



Moving Map w/o Terrain



Graphical Flight Planner



EHSI



Datalink Weather, FIS-B



Traffic



Lightning



Georeferenced Hover Vector

### Integrated Display Unit (IDU)

- Full-color, high-resolution, sunlight-readable (1,000 nit) LCD screen with fully adjustable brightness
- Black-anodized machined 6061-T6 aluminum bezel
- Integrated voice warning system
- Illuminated controls with tactile differentiation
- Recursively redundant system architecture
- Digital flight performance recording for last 5 flights
- SmartMedia data card reader
- Line replaceable components
- Upgradeable and expandable
- Level-A software
- Ruggedized for hostile cockpit environments

6.30" h x 5.50" w x 4.50" d  
Weight: 4.5 lb.

### AHRS (Attitude/Heading Reference Systems)

- Solid-state, strap-down AHRS
- 14,000 hours MTBF
- Non-tumbling, non-precessing
- Multiple AHRS configurations available
- Level-A Software

### ADC (Air Data Computer)

- Includes OAT probe
- Multiple ADC configurations available

### GPS/WAAS Receiver

- 12-channel, parallel tracking
- RAIM and FDE

### AIU (Analog Interface Unit)

- Drives virtually any autopilot
- Fly hands-free: DP's, STAR's approaches (including DME arcs, procedure turns, and teardrop and holding pattern course reversals) and missed approaches (including holding patterns with correct entries)
- Dual VOR/LOC/GS, MB, ADF, Radar Altimeter

### Primary Flight Display (PFD)

- HUD symbology
- 3D Highway-In-The-Sky navigation for waypoints and approaches
- User-defined precision approaches
- Real-time 3D terrain modeling
- Real-time 3D traffic display
- Real-time 3D towers, antennas, and obstructions
- Full VNAV capability
- Zoom/wide-angle views
- Fully integrated FMS supports all ARINC-424 leg types
- Unusual Attitude Recovery mode
- Multiple declutter options
- ASI, ALT, VSI, AGL, CDI, trends, heading, timers, bugs, and more
- Radar Altitude display

### Multi-Function Display (MFD)

- Vector-based moving map with Jeppesen NavData
- Topographic terrain display
- Datalink weather display
- Class A / B / C Terrain Awareness and Warning System (TAWS)
- TCAS-I, -II, TAS, ADS-B display
- Winds aloft / crosswind component
- Density altitude display
- ISA/Temperature
- True airspeed, groundspeed, and OAT
- Conventional HSI/ILS/RMI/ADF display
- Towers, antennas, and obstructions
- Color- and altitude-coded airspace
- Horizontal Projected Path with "look-ahead" in turns
- Waypoint information
- Multiple display options
- Multiple declutter options
- Fuel range and duration
- Built-in, graphical Flight Management System (FMS) flight planner

### Certification Basis

- STC'd on over 740 models including all King Air, Citation 501, all Cessna single and twin, all Piper single and twin, Piaggio Avanti and Pilatus PC-12 models—plus hundreds more aircraft
- TSO-C2d, TSO-C4c, TSO-C6d, TSO-C8d, TSO-C10b, TSO-C10c, TSO-C110a, TSO-C113, TSO-C145/146, TSO-C151b, TSO-C34e, TSO-C35d, TSO-C36e, TSO-C40c, TSO-C41d, TSO-C52b, TSO-C87, RTCA/DO-160D, RTCA/DO-178B, Level-A

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