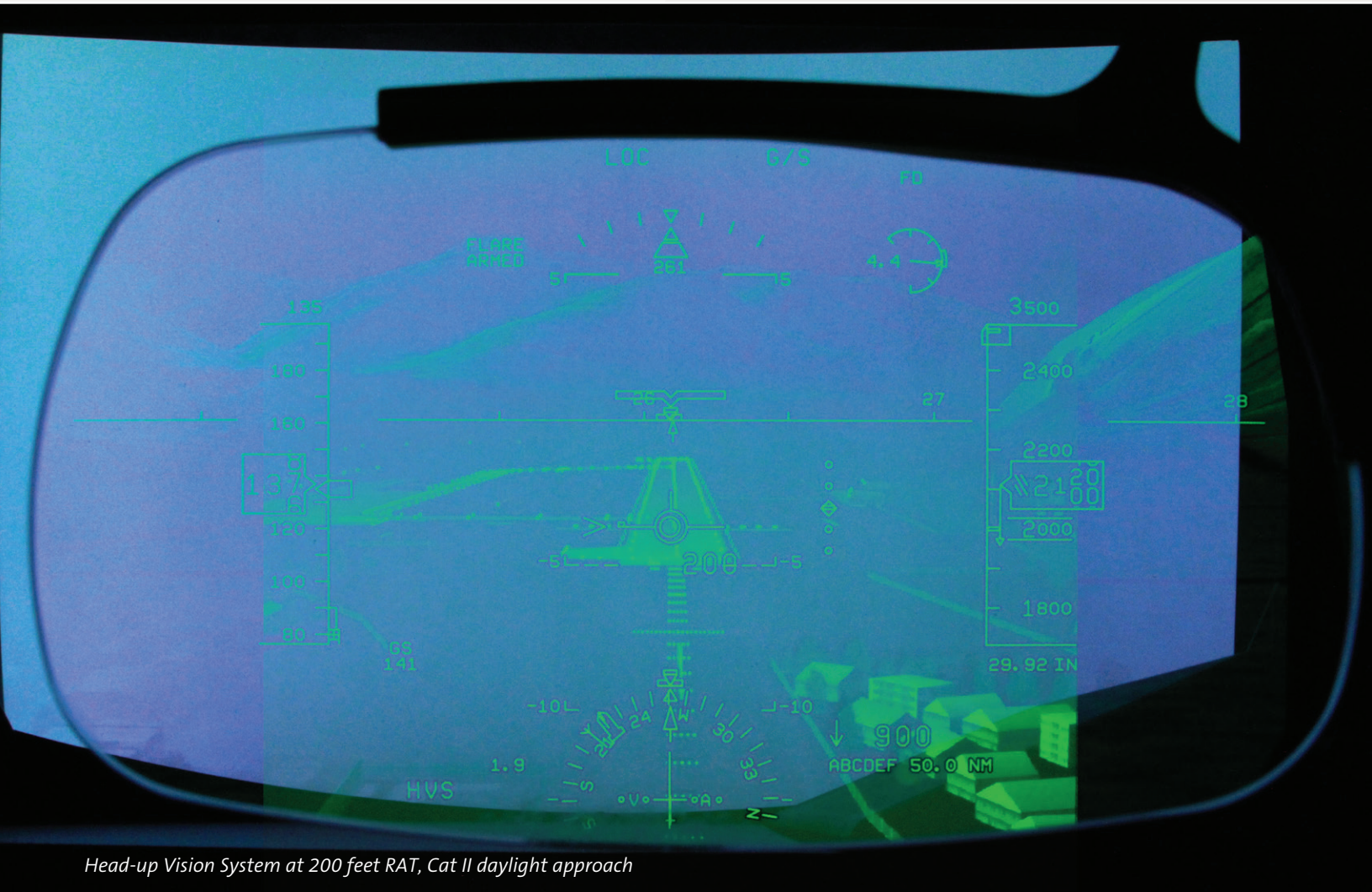


HEAD-UP VISION SYSTEM

Seeing is believing.

HGS+SVS+EVS.



Head-up Vision System at 200 feet RAT, Cat II daylight approach

Innsbruck, Austria, CAT II daylight approach: Rockwell Collins' Head-up Vision System (HVS) is the industry's first integration of our Head-up Guidance System (HGS™) with our Synthetic Vision System (SVS) and our Enhanced Vision System (EVS) wideband, multispectral camera. The combination of SVS fused with multispectral EVS on a "head-up, eyes-out" display that conforms to the outside world provides a powerful safety tool.

**Rockwell
Collins**

Building trust every day

HGS+SVS+EVS.

Head up. Eyes out. That's where all the information is.

Rockwell Collins' unique HVS delivers incredible situational awareness and approach stability in low visibility conditions. The system is the first of its kind to integrate images from our advanced Synthetic Vision System (SVS) algorithms with multispectral Enhanced Vision System (EVS) infrared cameras. Put it all together and the pilot benefits from a real-time, eyes-forward display of the runway, terrain and obstacles on the Head-up Guidance System (HGS) combiner.

The Rockwell Collins Pro Line Fusion® integrated avionics system provides all the flight profile information to the HVS. The avionics drive the head-up combiner display with aircraft energy management, navigation and approach data, enabling pilots to more intuitively manage systems and establish a more stabilized approach, even under low visibility conditions.



Head-up Vision System at 200 feet RAT, Cat II night approach

Three technologies. One safety-enhancing system. Only from Rockwell Collins.

There is nothing head-down about it. This is head-up, eyes-forward visual guidance like you've never seen before. The high-resolution SVS database fuses with aircraft information and multispectral EVS camera images to give you unprecedented, real-time imagery of runway lighting – including new LED systems – terrain and obstacles as they appear ahead of the aircraft.

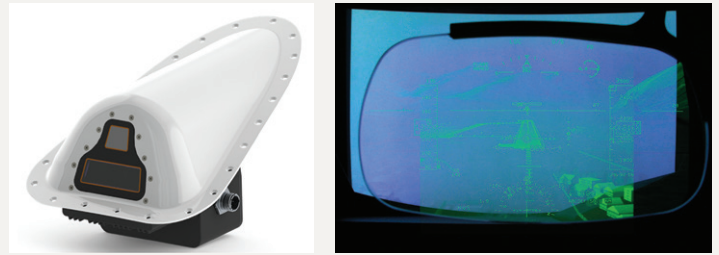
While the benefits of our HVS are clear when visibility is low, its unique ability to deliver critical information into the pilot's line of sight is equally important in other critical phases of flight.

For example, even standard approaches are made easier with the system's glide slope and flare guidance capability. And in extreme conditions, the HVS can provide recovery guidance in the event the aircraft enters an unusual attitude situation.

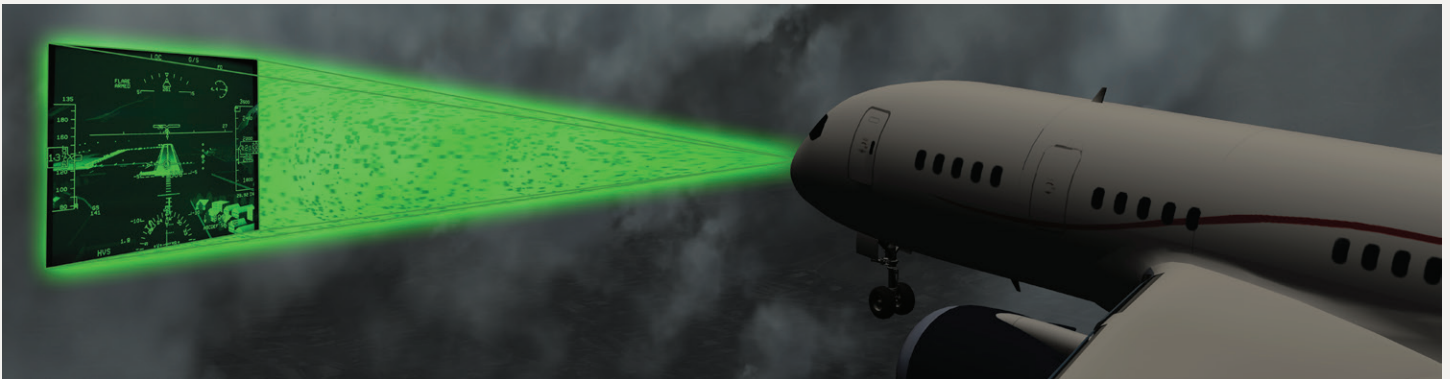
Takeoff to touchdown. In all visual and flight conditions. All critical flight information is presented using familiar symbology and actual imagery right where the pilot needs it most.

The EVS camera system (EVS-3000) is another Rockwell Collins first. Along with the ability to provide true multispectral infrared imaging, the camera system does not require any external cooling. That saves weight and greatly improves reliability. Complementing the new hardware is our Generation 6 HGS software. Together, they give our HVS unrivaled capabilities.

The high-resolution SVS database provides greater situational awareness of terrain and known obstacles along the aircraft's path. The system greatly improves situational awareness and safety of takeoffs, approaches and landings.

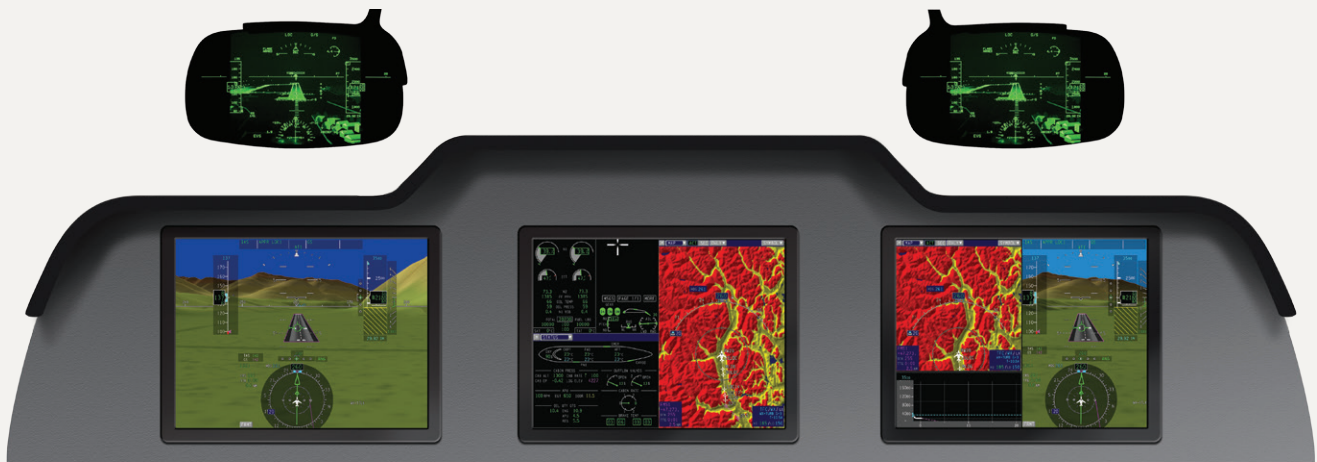


HVS The system.



Penetrating deep into weather-shrouded environments, the HVS's multispectral, infrared EVS provides real-time images of the airport environment and obstacles, including vehicles, animals, aircraft and LED runway lighting. Aircraft sensors and navigation data integrate from on-board avionics to execute guidance cues and overlay SVS terrain data as the approach is flown.

Fuse the two images from SVS and EVS and you have an accurate, 3D representation of the area directly in front of the aircraft. HVS gives pilots the autonomy and situational awareness they need to provide safer operations at unfamiliar airports and in reduced visibility conditions.



Pair our Pro Line Fusion avionics and HVS for unparalleled situational awareness.

It's a compelling combination. A flight deck with high-resolution, real-world imagery on both the head-up and head-down display systems. Pro Line Fusion avionics seamlessly integrate with HVS to bring unparalleled situational awareness during all phases of flight.

All of the underlying technologies and products of HVS are brought to you by Rockwell Collins:

- › HGS
- › Multispectral EVS
- › High-resolution SVS
- › Pro Line Fusion avionics

Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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