Boeing Cuts Production Time by 25% with Skylight on Glass

An astounding 130 miles of wiring go into every new Boeing 747-8 Freighter, tucked away overhead and underfoot from the cockpit to the wheel wells. For Boeing, the world's leading manufacturer of commercial jetliners, that translates to thousand of miles of wiring — and tens of thousands of hours of work — each year. To ease this complex task, Boeing uses smart glasses and the Skylight platform from Upskill.

Situation

There's no margin for error in building an airplane. "You can't pull over if something goes wrong" says Ricky Ramirez, a Boeing electrical technician.

Wiring is a special challenge: Every Boeing aircraft, from the workhorse 737 to the new 787 Dreamliner, has multiple configurations, each with its own wiring scheme. In years past, technicians used "phone books" full of diagrams to do their work. Laptops helped, but had the same basic problem: constant look-away interruptions as workers got directions and cross-checked diagrams and schematics.

Solution

Recently Boeing's engineering team discovered a new wearable solution: Glass Enterprise Edition and Skylight enterprise software from Upskill. They began a pilot program, with Skylight replacing those laptops and phone books of paper.
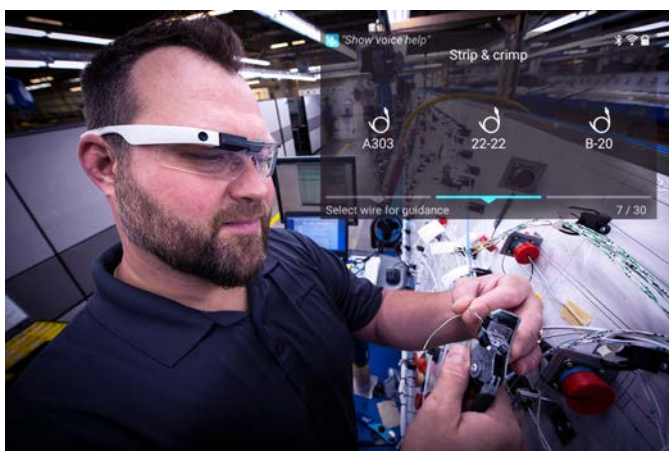
Boeing technician identifies the correct wire number using Skylight.

Company

Boeing
www.boeing.com

Industry

Aviation

AR Solution

- Skylight
- Glass Enterprise Edition

Use Case

- Complex assembly
- Repair & maintenance
- Remote expert

Benefits

- Improved productivity
- Higher quality
- Better ergonomics

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Skylight gives Boeing's technicians the instructions they need right in their viewfinder. No need to look away or tap a laptop: they can move through multiple prompts with voice commands, the Glass touchpad, and the head tracking interface. A simple voice command like "local search 1-8-6-A" calls up the correct step-by-step schematic for every last wire.

Voice command is a major improvement over typing commands on a laptop, says Ricky Ramirez. "Now you have two hands on the product the whole time. You don't have to look away. It was a huge time-saver."

Bar code readers and the Glass cameras help identify and confirm wiring inventory. When extra help is needed, workers turn on Skylight's "See What I See" video stream and share their view with engineers or other remote experts. Technicians can also look at how-to videos right in their field of view, keeping their hands free to do the work.
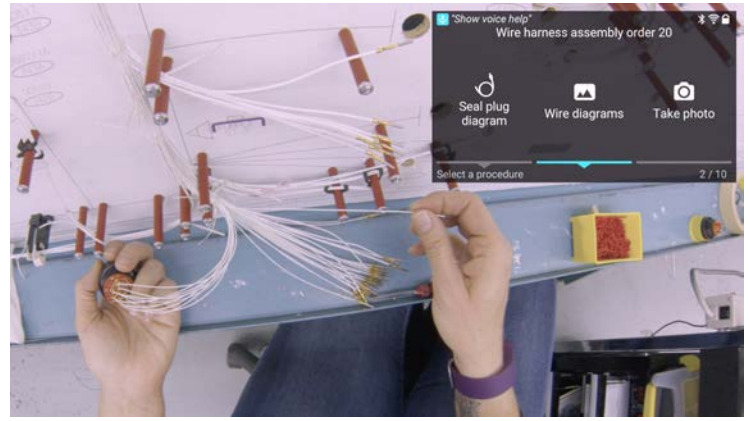
Boeing end-user point of view using Skylight on smart glasses.

Results

With Skylight, Boeing cut its wiring production time by 25% and reduced error rates effectively to zero.

Boeing calls that kind of improvement a step function change. "Rather than picking up seconds or minutes, a step function change gives us an opportunity to cut the build time by 25%," says Randall MacPherson, Senior Manager for Boeing's Electrical Strategic Fabrication Center. His workers are more efficient, with better workstation ergonomics, and it's easier for them to share knowledge and bring new workers up to speed.

Now Boeing is looking at ways to use Skylight in other areas of its manufacturing and assembly. Randall MacPherson puts it best: "Wearable technology is helping us amplify the power of our workforce."

❝ It was clear, across the board, that it was going to work.
– Jason DeStories, R&D engineer