

Feature Story

Boeing builds the future with C-17 mixed reality training innovation

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Imagine you're an aircraft technician tasked with performing critical maintenance on the giant cargo workhorse, the Boeing C-17 Globemaster III, and you can now safely complete it remotely from anywhere in the world – viewing real-time, hands-free, interactive 3D holograms right before your eyes.

This is the bold, new future for C-17 operators, thanks to Boeing's interactive augmented training operations and maintenance solution, which combines mixed reality with real-time, subject matter expert (SME) support.

In an industry-first, the solution was recently put to the test at Royal Australian Air Force (RAAF) Base Amberley, leveraging Microsoft HoloLens 2 mixed reality smart glasses to support No. 36 Squadron (36SQN) with a critical maintenance task.

“Boeing's augmented training operations and maintenance solution allowed the RAAF to achieve crucial maintenance tasks on the C-17A safely and ahead of schedule despite the impact of COVID-19, utilising novel support mechanisms such as HoloLens,” said Squadron Leader Dr. Evan Oscar Smith, 36SQN Senior Engineering Officer. “In doing so, we also demonstrated that this task is within 36SQN's native capability moving forward. This is an excellent outcome.”

The smart glasses, which merge holographic augmentation with the real world, allow technicians to use hand gestures instead of a traditional keyboard and mouse.

When COVID-19 travel restrictions prevented Boeing's U.S.-based Recovery and Modification Services (RAMS) team from working on a vital C-17 safety system, Boeing used the solution to quickly resolve the issue.

Using the solution, the RAMS team was able to provide remote real-time training and guidance to the RAAF, sending technical drawings and documents as holograms and supporting the overall maintenance task while aircraft technicians were wearing the HoloLens headsets.

“Boeing's interactive augmented training operations and maintenance solution allows RAAF aircraft technicians to interact securely and in real-time with SMEs and engineers to provide remote support for the completion of critical maintenance tasks, representing significant travel-time and cost savings for our global customers,” said Glen Schneider, C-17 Field Services Manager.

“The solution will enable our field engineering team to have eyes and ears with the maintenance team on the ground in any location to provide them with real-time, trouble-shooting support, instead of them having to resolve complex tasks via phone, email or wait for a rescue mission.”

The trial will continue at 36SQN throughout 2021, allowing RAAF aircraft technicians, deployed on domestic or international tasks, to have direct reach-back capability to the Boeing C-17 Field Services team.

Multiple C-17 operators have expressed interest in Boeing’s augmented training operations and maintenance solution. Boeing is always looking for ways to innovate and incorporate commercial applications of technology – from product development to sustainment – to deliver more value to customers.