

MOVERS & SHAKERS

AN INTERVIEW SERIES WITH THE LEADERS SHAPING
OUR INDUSTRY

By Hank Hogan

Q & A WITH

RODERICK MCLEAN

VICE PRESIDENT AND GENERAL MANAGER OF AIR MOBILITY & MARITIME MISSIONS
LOCKHEED MARTIN



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Roderick McLean is a busy man. He is vice president and general manager of the Air Mobility & Maritime Missions (AMMM) line of business at Lockheed Martin. He also is site general manager of the company's nearly 5,000-employee Marietta, Georgia, facility. In addition to AMMM activities, the Marietta site manufactures assemblies for the F-35 Lightning II and supports the F-22 Raptor sustainment programs.

The AMMM portfolio includes the C-130 Hercules transport, both legacy models and the current production version, the C-130J Super Hercules. AMMM also covers the C-5M Super Galaxy strategic airlifter, the P-3 Orion, and the LM-100J, a commercial variant of the C-130J.

The C-130 has been in production for 66 years and boasts a robust and diverse global customer base, with operators in seventy-plus nations, twenty-one of which are or will be flying the C-130J. At the same time, even this advanced model is undergoing various upgrades and enhancements to further improve navigation, expand diagnostics, and otherwise extend the operational usefulness of this proven platform.

While McLean is thoroughly occupied ensuring that these and other programs happen as scheduled, he recently took time out from his busy schedule to sit down with us. We discussed air mobility's past, present, and future, along with some of what he has learned over a nearly 30-year career with Bethesda, Maryland-based Lockheed Martin. His lightly edited responses to our questions follow.

Courtesy of Lockheed Martin. Photography by David Key.

Q: You have served in a number of roles with Lockheed Martin over the past 3 decades. What lessons have you learned? And how have your varied assignments prepared you for your current job?

A: "The most valuable lesson I have learned is that to consistently deliver acceptable outcomes, an organization's culture must be centered on excellence and integrity. Lockheed Martin has been focused on creating such a culture throughout my time with the company and certainly before that," McLean says.

"The most valuable thing I've experienced is building and maintaining customer relationships. Our customers put a lot of trust in what we do, build, and provide. They rightfully expect to receive their aircraft on time, with the performance, reliability, and quality required to perform their mission every time. It takes a true partnership to make this happen, and that is just one reason why it's important to have strong relationships with our customers," he adds.

Q: What are the three most important changes you have seen in this industry?

A: "One thing that has evolved over time is the use of data," he says, citing as an example how tactical aircraft now share sensor data with weapons systems on ships at sea.

As this trend continues, it will enable sharing information across all platforms, from space to air to land to sea, McLean explains. "That will provide a huge operational advantage for our defense forces going forward."

"The second thing I've seen as a change is how we use data from a maintenance perspective, especially given that we are [now] able to embed more diagnostics systems into aircraft through avionics and other software systems. Aircraft are reporting in advance when they have issues," he notes. This enables focused preventative maintenance, providing widespread efficiencies that facilitate service and supply chain optimization and reduce aircraft downtime."

"The third thing I've seen is the pace and change of the threat," he states. "We are now using agile software development methodologies to rapidly provide software updates within weeks or months, where before it may have taken years. To me, this is digital transformation in action: The agile approach allows our teams to align resources in a faster manner so our operators can better anticipate and respond to these threats."

Q: What is technologically important and innovative with the ongoing C-130 upgrades and enhancements?

A: "The C-130 has been in a continual state of innovation and evolution since it made its first flight in 1954. The C-130J aptly reflects that ongoing development," McLean affirms. "The C-130J is the most advanced Hercules ever produced and, as such, has upgrades and enhancements that dramatically differentiate it from legacy models."

"One of the most marked differences between the J and legacy C-130s is very noticeable and visual." He continues, "The C-130J has a dual HUD, a heads-up display, which provides pilots with unprecedented situational awareness and real-time data, vital to mission success." McLean adds that there is an available upgrade path to digital HUD implementation.

Another important innovation for the Super Hercules is found in its Block Upgrade program, which is now implementing its Block 8.1 update in U.S. and global C-130Js. The Block 8.1 update includes state-of-the-art



Rod at the grand opening of Lockheed Martin iLab at Lockheed Elementary in Marietta, GA.

Courtesy of Lockheed Martin. Photography by Damien A. Guarnieri.

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Courtesy of Lockheed Martin.

enhancements to navigation and control during landing, he points out.

In this age of rapidly evolving technology, when facilitating speedy implementation is key, other advanced hardware is designed to make future improvements easier to deploy. "We also have included a mission processor into the aircraft, which allows us, once again, to have the capability for additional upgrades without having to disrupt the flight management computer. That affords a path to provide rapid updates without impacting flight control and navigation computers," McLean points out.

"That's what keeps the C-130 relevant and in demand — its ability to adapt and expand," he says in summing up these efforts. "Throughout the C-130's lifetime, Lockheed Martin has provided upgrades and modifications in support of over 100 different mission requirements, which has yet to be matched."

Q: On top of your professional schedule, you also donate time to your alma mater, North Carolina A&T. How important is it to give back?

A: "It's important for me to share lessons that I've learned with others," McLean says, who serves on the university's engineering advisory board, which enables him to offer his expertise and input on curriculum.

"I've been able to help establish an engineering program, where A&T students have a chance to learn about the global nature of business," he notes, adding that visits to domestic and international Lockheed Martin sites clearly illustrate the importance of interconnectedness in modern supply chains.

Q: Finally, regarding transports in particular and aerospace in general, where do you see things headed? What would you tell someone to keep an eye on?

A: "The big focus in the near term is certainly the continued improvement in fuel efficiency," McLean says. "We're continuing to find ways to provide longer range." Some of the innovations under study include putting more fuel in the wings and the use of microvanes on the wings to improve airflow and reduce drag, he notes.

In discussing planned avionics upgrades, he predicts, "We'll integrate synthetic vision using radar and other visual sensors. Via the HUD, operators can see through weather and clouds. That will give aircraft operators the possibility to land on non-instrumented runways in very austere conditions."

"In years to come, we look forward to a more advanced transport that certainly looks a bit stealthier," McLean goes on to say. He adds that such technology will make future aircraft even more useful in tactical situations.

Such a completely new transport design is still on the drawing board and will not be airborne for perhaps a decade or more. When this new twenty-first-century transport eventually does take to the skies, it undoubtedly will do so alongside currently flying platforms. It will join the ranks of numerous predecessors capably performing essential missions, as Lockheed Martin's sustainment and support of mobility aircraft continues its impressive and unparalleled global legacy.