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NAWCAD Innovation Challenge teams develop creative solutions to warfighter needs



Rear Adm. Dean Peters, commander, Naval Air Warfare Center Aircraft Division (NAWCAD), and Vice Adm. David Dunaway, commander, Naval Air Systems Command, stand with NAWCAD team members who participated in NAVAIR's inaugural Innovation Challenge. The six-month effort focused on developing creative technological solutions to warfighter needs. White papers from teams interested in the 2nd Innovation Challenge are due Oct. 15. (U.S. Navy photo)

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md. — Three teams of developmental engineers and scientists from Naval Air Warfare Center Aircraft Division (NAWCAD) demonstrated their proof-of-concept technology projects Aug. 19, wrapping up the command's participation in Naval Air Systems Command's (NAVAIR) inaugural Innovation Challenge.

Following six months of focused research and development, the teams presented their findings, recommendations and lessons learned to NAVAIR Commander Vice Adm. David Dunaway, NAWCAD Commander Rear Adm. Dean Peters, Commander, Fleet Readiness Centers Rear Adm. David Sohl and other senior leaders.

"There is one constant in this business, and it's that things are changing," said Dunaway to the teams in his opening remarks. "Our goal was to get you to think about that change, giving you a chance to develop unique solutions to specific technical challenges, and you came through with flying colors."



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“This has really been an experiment to foster innovation,” said Anthony Cifone, NAVAIR deputy assistant director for research and engineering. “We want to solve problems for the Navy and the command, but we also want to show our folks -- especially our young folks -- that we value innovation.”

In fall 2014, 26 NAWCAD teams submitted proposals. Three were ultimately selected.

Team NOID (No-Oil Innovation Demonstration) examined technologies and innovative materials that could potentially allow gearboxes to run without oil lubrication. Its results showed promise in extending the time that a gearbox could operate in a loss-of-lubrication situation, potentially saving lives.

Team NOISE-HD (NOvel Innovative Sound Energy Harvesting Device) successfully harnessed sound energy from jet engines in a field environment and demonstrated that it could be stored via battery. With future development, an optimized device could collect and store acoustic energy on board ships, reducing dependence on energy transported across long distances.

Team SEAM (Sensor Embedding for Additive Manufacturing) demonstrated that it is possible to get reliable, accurate data for structural health monitoring of metallic “3-D printed” parts. In fact, during testing, the team’s embedded sensors outlasted the conventional strain gauges that they used as benchmarks.

“This showed me that there are tremendously good ideas out there that our young folks have,” said Cifone, who first conceived the Innovation Challenge together with then NAWCAD commander Rear Adm. Mark Darrah. “Ultimately, what we got out of this were great ideas with some results behind them.”

In addition to addressing military technical issues, the Innovation Challenge provided a unique professional development opportunity for 14 NAWCAD employees who are part of NAVAIR’s Engineer and Scientist Development Program or the Navy Acquisition Development Program.

“I’ve learned a lot about how NAVAIR as a whole works, and also the process of forming a project,” said Denise Orthner of Team SEAM. “It was kind of surprising getting so much responsibility when I had only been here a couple of months. It was, ‘You have a great idea. Okay, here you go. We’re handing over the reins to you.’ But really, we’ve been able to get everything that we have accomplished done because we’ve received so much support from everyone here.”

“It gives me a lot of respect for the engineers on this base and on other bases who work to make the Navy systems that we have today,” said Jazmin Myres of Team NOISE-HD. “To think about all of the effort and all of the work that has gone into an aircraft -- or any system



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-- it's incredible to see."

NAWCAD leaders were pleased with the results of the challenge, both in what the teams developed and in how they developed as teams.

"I'm so proud of our team members," said Antonella Thompson, Innovation Challenge Program manager, who coordinated and mentored all three teams, ensuring they had the facilities, materials, and staff support they needed throughout the Challenge. "These young men and women have grown professionally and personally, and they've really come together in a focused way to hopefully benefit our men and women who serve."

"Innovation starts with a solid foundation in the mission and in the technical aspects of the mission," said Peters. "With limited resources, there is always pressure to attack problems in a traditional manner instead of pursuing ideas that may or may not come to fruition. The Innovation Challenge provides an opportunity to attack problems in creative ways. In essence, the Innovation Challenge is not only about launching teams to work on promising ideas, it's also about developing a workforce that thinks a certain way. I'm proud of the teams for their creative approaches, and I thank the experts from across the command who provided guidance and encouragement throughout the project."

"I think it has been a tremendous success," said Cifone. "It really points to the skills and capabilities of our young folks. It's a reflection on the great people we have. I'm highly encouraged, and I'm very excited looking forward to the next Innovation Challenge round."

NAWCAD is now preparing to evaluate submissions for the next Innovation Challenge. As with the first challenge, teams of developmental employees can submit white papers to Thompson for evaluation by a selection board. White papers are due Oct. 15.

Team members from the first round encouraged others to consider applying for future Innovation Challenges.

"It's definitely a good opportunity," said Ian Gallagher of Team SEAM. "You get the chance to work on one thing for six months straight, which is pretty rare. You really get to see it through from beginning to end."

To learn more about the Innovation Challenge, visit www.youtube.com/navairsyscom.