



## FRCSE repairs lasers, improves turnaround time to Fleet

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Electronics Mechanic Dean Ramey dismantles a laser in preparation for alignment, repair, assembly and final testing in the Laser Clean Room at Fleet Readiness Center Southeast (FRCSE) Jan 4. FRCSE and Northrop Grumman established a Public-Private Partnership in April 2010 to shorten laser repair cycle time. (U.S. Navy photo by Marsha Childs/Released)

JACKSONVILLE, Fla. – It was only a few short years after American Physicist Theodore H. Maiman developed the laser in 1960 that Gene Roddenberry created Star Trek, a futuristic television series set on the Starship Enterprise where laser pistols were standard-issue.

Today, Fleet Readiness Center Southeast (FRCSE) is collaborating with Northrop Grumman Laser Systems based in Apopka, Fla., to maintain, repair and upgrade lasers installed in Forward Looking InfraRed (FLIR) turrets on military aircraft to detect, identify and track tactical targets.

FRCSE established a public-private partnership with Northrop Grumman in April 2010, which unites the innovation and responsiveness of private industry with the expertise and capacity at FRCSE. It also allows the U.S. government to maintain depot-level repair capabilities on Navy core weapons systems.



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Assistant Avionics Product Manager Chris Kopp said Northrop Grumman and FRCSE have dual repair capacity to accelerate repair cycle times for improved support to the Fleet.

“We want them to do well, and they want us to do well,” he said

Yet, most manufacturers are hesitant to share proprietary technical data, which includes the enormous costs of research and development.

“The government can’t afford to buy the data—drawings, test specifications, parts listings, maintenance manuals, engineering specifications—all the documentation a facility would need to repair a piece of gear,” he said.

Kopp said collaborating with Northrop Grumman allowed FRCSE access to the proprietary information. The relationship evolved over time into a “win-win partnership” that resulted in the formal alliance.

It began in late 2009 when three FRCSE electronics mechanics trained for three months at the Northrop Grumman factory near Orlando. Dean Ramsey, Cathy Cornioli and Jeffrey Brown learned the skills needed to align, repair, assemble, and final test the maker’s laser assembly.

Air Data Systems Supervisor Raymond Rivera said FRCSE created a controlled environment called the Laser Clean Room. Technicians must wear Dacron polyester smocks sewn with synthetic thread, boots, hairnets and beard guards to prevent contaminating the laser. He said the technicians routinely check the room’s air quality to ensure particle readings are well below 10,000 particles per cubic foot, the approved standard.

Electronics Mechanic Supervisor Bob Early said Northrop Grumman has asked FRCSE to process 12 lasers per month, up from 10 and expected to increase by year’s end.

“I think we are doing equal or a few more repairs than they are, and I only see it growing,” he said. “They are very satisfied with our work.”

Early said FLIR turrets made by Raytheon Company, also repaired at FRCSE, house the laser assemblies. The Navy’s H-60 helicopters utilize nose-mounted AN/AAS-44 FLIR /laser designator systems. The Air Force’s MQ-1 Predator and MQ-9 Reaper Unmanned Aerial Vehicles (UAV) utilize AN/AAS-52 and the AN/DAS-1 Multispectral Targeting Systems (MTS) respectively, to aid with surveillance and reconnaissance missions.

Jeff Means, Northrop Grumman MTS program manager, said it has been a “very successful partnership.” Northrop



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Grumman's laser facility employs 14 technicians who provide the touch labor with nine of those working as laser technicians.

The FRCSE technicians have repaired more than 100 lasers since the program's startup in April 2010.

"They have exceeded my expectations, and they continue to improve," said Means. "Based on the plans going forward, I'm looking at 120 to 130 repairs for 2012. The repair requirements are driven by the heavy use of UAV MTS systems but represent only a fraction of our annual laser production volume."

FLIR systems determine the bearing, course and speed of a target by viewing the scene as an infrared image, regardless of weather conditions. This system's capabilities enhance night navigation, target detection and recognition, and search and rescue operations.



Electronics Mechanic Dean Ramey arranges a laser on a bench in the Static Room to align the optics housed in the component at Fleet Readiness Center Southeast Jan 4. Solid-state laser technology developed at Northrop Grumman is the basis for numerous military applications, such as Forward Looking InfraRed or FLIR used to detect thermal images. (U.S. Navy photo by Marsha Childs/Released)



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On Jan. 4, John McGinniss, the Laser Clean Room custodian, vacuums the work center to ensure the particle readings for dust and other contaminants are kept to minimum levels. The average reading is less than 200 particles per cubic foot, well below the requirement of 10,000 particles. (U.S. Navy photo by Marsha Childs/Released)