

Project Snapshot



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Project Leads:

Huntington Ingalls Industries –
Newport News Shipbuilding (NNS)

Project Dates:

Apr 2019 – Apr 2021

Objectives:

Investigate the use of the robotic mechanized gas metal arc welding in lieu of robotic mechanized flux cored arc welding.

Estimated Savings:

CVN 5-year savings = \$3.4M

S2794 Adopting GMAW for Robotic Panel Line
Fillet Welding Operations
Rev A (0719)

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The Department of Defense (US Navy) budget continues the challenge to meet new goals for fleet size and increased acquisition activity. An acquisition cost goal set by the US Navy has been to reduce the construction costs for FORD-Class aircraft carriers by 20%. A major portion of the strategy to achieve this goal is the use of technology insertion to reduce fabrication cost. Using the Navy ManTech program to support this endeavor addresses high priority defense needs, aids in achieving reduced acquisition cost, and transitions improved manufacturing technology to production.

The *Adopting GMAW for Robotic Panel Line Fillet Welding Operations* project will determine the advantages of converting legacy equipment from a Robotic Flux Core Arc Welding Mechanized (R-FCAW-ME) process to a Robotic Gas Metal Arc Welding Mechanized (R-GMAW-ME) process. The project team will compare the current baseline welds to the welds fabricated with the R-GMAW-ME process.

Once the NNS shipyard evaluation activities are completed and the process has achieved successful results against project expectations, NNS can develop positive supporting documentation for implementation using capital funding.

For the initial business case, cost savings for ROI calculation purposes are estimated at approximately \$3.4M, if fully implemented. Cost savings are expected to be realized by converting manual welding operations to a robotic welding operation, saving time through increased travel speed and improved arc-on time.

The **Center for Naval Metalworking (CNM)** is a Navy ManTech Center of Excellence, chartered by the Office of Naval Research (ONR) to identify, develop and deploy, in U.S. manufacturing facilities, advanced manufacturing technologies that will reduce the cost and time to build and repair Navy ships and aviation assets. For additional information on this and other CNM projects, please visit <https://www.navalmetalworking.org/>.