

Project Snapshot



Project Lead:

Huntington Ingalls – Newport News Shipbuilding

Project Dates:

Jun 2016 – Jun 2018

Objectives:

Determine induction straightening parameters that can be used to effectively straighten HSLA65 ship structure without adversely affecting material properties and to quantify the potential cost savings associated with implementing induction straightening at NNS.

Estimated Savings:

\$2M per CVN hull

The U.S. Navy and Huntington Ingalls - Newport News Shipbuilding (NNS) have a joint initiative to reduce the construction cost of the FORD Class Carrier. The program addresses costs for contractor labor, shipbuilder materials, and government furnished equipment. The Navy ManTech Program is participating in this initiative with specific focus on manufacturing processes for ship construction. The ManTech Centers of Excellence and NNS have identified areas that can benefit from new manufacturing processes and technologies to reduce costs.

Current CVN construction employs flame straightening to straighten deck and bulkhead panels within required tolerances. Although effective, the process is time consuming and allows for variability in application. It requires numerous application zones across the full area of the panel and often necessitates multiple treatments. The objective of this project is to develop an acceptable process for deploying induction heating to straighten deck and bulkhead panels within required tolerances without adversely affecting material properties and to quantify the potential cost savings associated with implementing induction straightening at NNS. The project will be executed in two phases. The first phase will determine technical acceptability testing and execute a test plan to develop induction straightening parameters that do not adversely affect HSLA65 material properties. The second phase will determine the effectiveness of the developed induction heating parameters to straighten a representative mock-up of ship structure. Upon successful and timely completion of the Induction Straightening for CVN ManTech Project and acceptance of the technology and associated business case by the acquisition Program Office, the results will be transitioned to the NNS facility. This technology, once implemented, could potentially save an estimated \$2M per CVN hull.

NSAM is a Navy ManTech Center of Excellence, chartered by the Office of Naval Research (ONR) to identify, develop and deploy, in U.S. shipyards, 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 NSAM projects, please visit <http://nsamcenter.org>.

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