

Improved Flexible Infrastructure Track System to Save Costs for CVN and Other Surface Ships

Status: Pending Implementation

PROBLEM / OBJECTIVE

The Flexible Infrastructure (FI) track system is a series of extruded and machined aluminum tracks attached to the ship's primary structure creating a false deck. The benefits to this arrangement include enabling equipment to be mounted without the use of hot work and allowing rapid rearrangement of the space to meet changing missions. The large amount of the tracks required (>20,000 linear feet on a typical CVN installation) are difficult and costly to manufacture. The Navy Metalworking Center (NMC) led an Integrated Project Team (IPT) to improve the manufacturability of the FI track system to reduce complexity, acquisition cost and lead time, as well as to allow for competitive bids of extruded components. The IPT also improved the overhead track installation.

ACCOMPLISHMENTS / PAYOFF

Process Improvement:

After evaluating the legacy system and requirements as well as preliminary concepts previously developed by Newport News Shipbuilding (NNS), the IPT developed a dual solution approach with the I-beam pedestal and hex bar standoff track improvement concepts. The IPT fabricated and tested prototype track components, completed a prototype test report and prepared FI track fabrication and installment drawings. The IPT also developed a prototype installation fixture to improve the overhead installation procedure given the improved overhead track design. Benefits include reduced complexity and size of extrusion. The improvements resulted in a 46% (I-beam pedestal) and 58% (hex bar standoff) reduction in extrusion and machining costs of the track. The lead time for the extrusion was reduced from 52 weeks to 17 weeks. Labor to install overhead track also is estimated to be reduced by 50%.

Implementation and Technology Transfer:

Implementation of the new FI track system is expected during the second quarter of FY16 on CVN 79 and CVN 73 overhaul at NNS. Other program-specific Technical Warrant Holder/Program Office approval requests will follow as program schedules dictate.



Improved FI track system components and manufacturing processes will save costs for CVN 79 and other programs. NNS photo

Expected Benefits and Warfighter Impact:

- \$4.8M cost savings over five years for CVN 79, LHA 7 and 8, LPD 28, LXR, and CVN 73 overhaul based on:
 - track extrusion and machining savings
 - labor savings on overhead track installation
- Reduced complexity and size of the extrusion
- Reduced extrusion lead time, rejection rate, and rework
- Increased number of vendors capable of extruding track, allowing for competitive bids.

TIME LINE / MILESTONE

Start Date: October 2012
End Date: June 2015

FUNDING

Navy ManTech Investment: \$1.2M

PARTICIPANTS

PMS 379
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