



Collaborating to Reduce Cost and Increase Effectiveness: Over-molded Torpedo Cable Assemblies

A Case Study

Background

Liberty, as part of a customer's design team, was asked to help improve six complex cable assemblies used in a naval weapons system.

This case study illustrates how Liberty Engineers worked with the customer to redesign a more effective and manufacturable final product while reducing cost.



Problem

The original designs, which had evolved over various torpedo configurations, proved to be difficult to manufacture and install. They were also prone to damage. Adding insult to injury, the assemblies were very expensive.

This is not surprising, given the lack of space and the extremely demanding environmental conditions and performance requirements that had to be met. The customer's decision to partner with Liberty Electronics on the redesign, leveraging Liberty's expertise as a Subject Matter Expert (SME) in this commodity, resulted in dramatic improvements.



Solution



MK-48



MK-50
MK-54



MK-46



MK-44

With a fresh look at system requirements, a number of components were eliminated or changed. These changes included connectors, wires, cables, and machined components. Provisions for a system test that was no longer needed, for example, allowed for both elimination and change of components to **reduce cost**.

The results were impressive. In one assembly, the customer was able to realize a **30% decrease in conductor count**, and a **20% decrease in assembly labor hours**. Additional savings were realized in **lower component costs**. The component cost savings resulted both from eliminated components and lower-cost alternatives, as well as reduced machining costs. **Installation time for the afterbody assemblies was reduced**; at the same time, yield at installation was dramatically improved by **eliminating damaged assemblies**.

Having a collaborative customer made all of the difference in this case. The result was a **win-win for all involved**.



Liberty Electronics provides electrical cable assemblies, wire harnesses, and box builds for demanding defense and commercial OEM's looking to grow their business by teaming with a competent outsourcing partner committed to success.

Company Overview

- Incorporated in 1985
- ISO 9001, AS9100, Nadcap Registered Quality Systems
- ITAR Compliant
- 300 Employees – Non-Union Workforce
- 150,000 Sq Ft Total
- 34% Employee Owned
- Profit Sharing System
- Lean Manufacturing Processes



Wired for People.

Our belief in the value of people throughout the procurement and production process means building quality relationships also results in the best quality products.



Wired for Life.

Our products are made knowing that a life depends on them to perform, which fuels a strong commitment to both the integrity of our products and how we do business.



Wired for Challenges.

Our years of proven competence in solving complex challenges makes us a true consultative partner, not just another contract manufacturer.



Wired for Your Success

Liberty Electronics

Competent, Committed Contract Manufacturing

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Check out our [website](#) to learn more
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