DRIVING EFFICIENCY

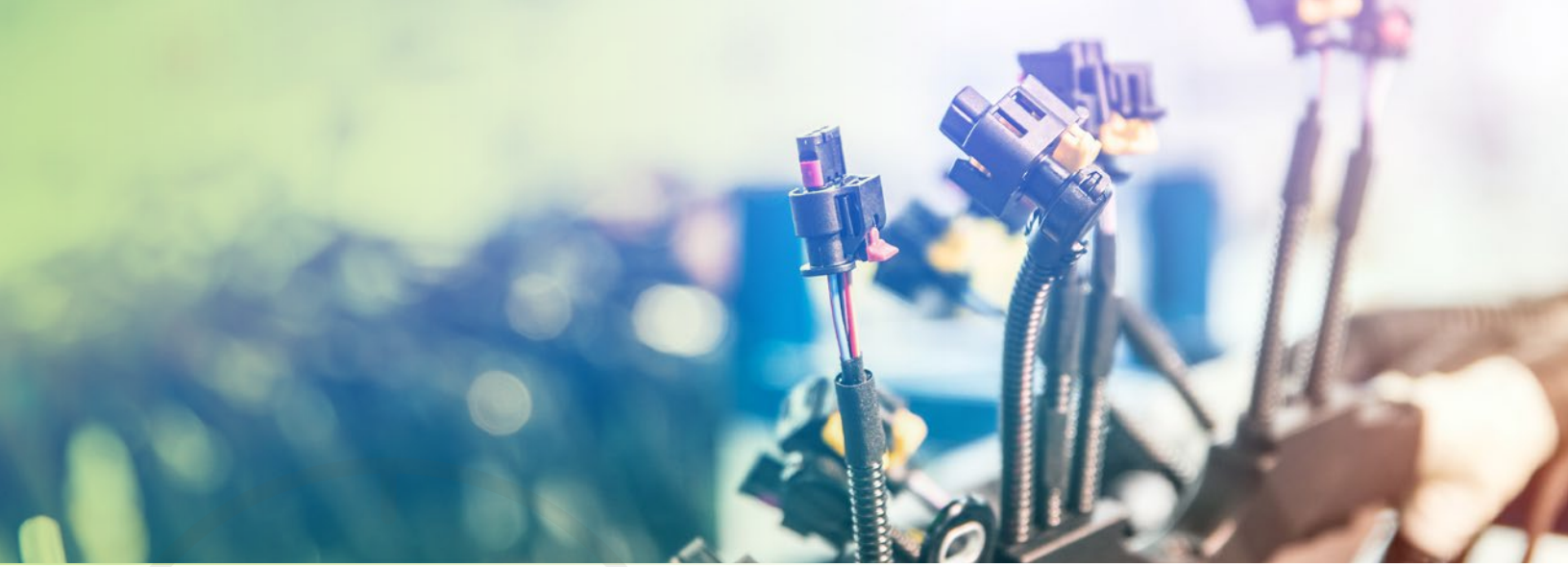
How a Wire Harness Repair Hospital Transformed a Truck OEM's Production

PROJECT
Wire Harness Repair Hospital

SECTOR
OEM

LOCATION
North Carolina

QLS
QUALITY LIAISON SERVICES



THE CHALLENGE

Wire harness issues were causing significant production delays and operational inefficiencies at an OEM facility in North Carolina. The facility, which manufactures heavy-duty trucks, relies on an extensive network of wire harnesses that power critical vehicle functions such as battery cables and chassis, main cab, engine, door, hood, under-cab, overhead, axle and line-stocked harnesses.

Before our team at Quality Liaison Services (QLS) stepped in, these persistent challenges included:

- **Supply Chain Shortages:** Wire harnesses were frequently delayed due to vendor shortages and long lead times for replacements, disrupting production and increasing costs.
- **Frequent Damage:** Wire harnesses were often damaged during storage, handling or installation, requiring extensive rework to meet quality standards before final assembly.
- **Late-Stage Design Changes:** Engineering modifications and/or late spec changes frequently necessitated last-minute rework of wire harnesses, further disrupting the production schedule.
- **Lack of In-House Expertise:** The OEM lacked the manpower, training and dedicated resources to efficiently diagnose, inspect and repair wire harnesses on-site.

"Many OEMs lack the manpower to conduct rework or reinspection of their wire harnesses," explains Tom Gray, CEO at QLS. "Their operators may only be familiar with their specific assembly jobs and often aren't certified to inspect the finished product."

The impact of these challenges resulted in a backlog of trucks that were staged offline, awaiting necessary wire harness repairs or modifications before they could be shipped to customers. Each delay translated into increased costs, reduced production efficiency and lower customer satisfaction.

With wire harness repair being a highly specialized skill set that few providers offer, the OEM sought a partner that could deliver an on-site solution to minimize downtime and ensure production continuity.

THE SOLUTION

To address these challenges, QLS partnered with the OEM to establish a wire harness repair hospital at the facility. This dedicated space is designed to function as an on-site repair center, staffed with highly skilled QLS technicians who can build, repair and modify the wire harnesses.

"Our local team worked closely with the OEM to establish a dedicated area, maintain an inventory of materials and deploy skilled personnel to build and repair the harnesses on-site," says Josh Youker, a quality technician at QLS. "We also assisted with setting up the facility and staffing the hospital."

The wire harness repair hospital is designed to operate as a fully integrated part of the OEM's production system, ensuring that harness issues can be addressed in real time rather than waiting for external suppliers to send replacements. The hospital's key functions include:

- **Building From Scratch:** Using provided diagrams and engineering documents, QLS technicians can create new wire harnesses when replacements are not readily available.
- **Reworking Damaged Harnesses:** Technicians repair harnesses that were damaged during handling, storage or installation, ensuring they meet strict quality and performance standards.
- **Modifying for Late-Stage Changes:** When engineering updates or last-minute corrections are required, technicians can quickly adapt existing harnesses to meet new specifications.

One of the primary advantages of this approach is that QLS technicians are embedded within the OEM's facility, allowing them to work alongside the production team and directly troubleshoot issues as they arise. This eliminates the need for lengthy back-and-forth communication with external vendors and significantly reduces the downtime associated with wire harness-related delays.

"Being in constant communication with our customers both before and after a project is awarded is crucial to everyone's success," explains Gray. "This allows QLS to be prepared for what will be needed, including on-site support, components, tools and other materials."

Wire harness repair requires deep technical expertise and industry certifications, which set QLS apart from competitors. Unlike many service providers, QLS technicians hold IPC/WHMA-A-620 certification, a globally recognized standard for cable and wire harness assembly. This high level of training ensures that all repairs and modifications meet stringent quality and safety requirements.

In addition to its expertise, QLS leverages its proprietary Dot system to provide real-time tracking, inspection results and seamless communication with the OEM. This level of transparency ensures accountability and efficiency, reducing the likelihood of repeat defects.

THE RESULTS

The impact of QLS's wire harness repair hospital was both immediate and measurable. Trucks that previously would have been staged offline for extended periods due to harness issues were now repaired and returned to the production line in a fraction of the time.

Key outcomes from the on-site wire harness repair hospital include:

- ✓ **REDUCTION IN TRUCKS STAGED OFFLINE:** With real-time harness repairs and modifications available on-site, fewer trucks were delayed due to missing or damaged wire harnesses.
- ✓ **SHORTER DOWNTIME FOR HARNESS REPAIRS:** Trucks that did require offline staging spent significantly less time waiting for rework, ensuring a faster return to production.
- ✓ **IMPROVED PRODUCTION FLOW:** With harness issues addressed proactively, the overall efficiency of the production line improved, reducing bottlenecks and enhancing output.
- ✓ **INCREASED OEM SATISFACTION:** The OEM reported a noticeable improvement in production efficiency, fewer harness-related disruptions and overall cost savings.

"The OEM is very pleased with the results," says Youker. "We've exceeded their expectations by keeping offline numbers low and minimizing disruptions to the production process."

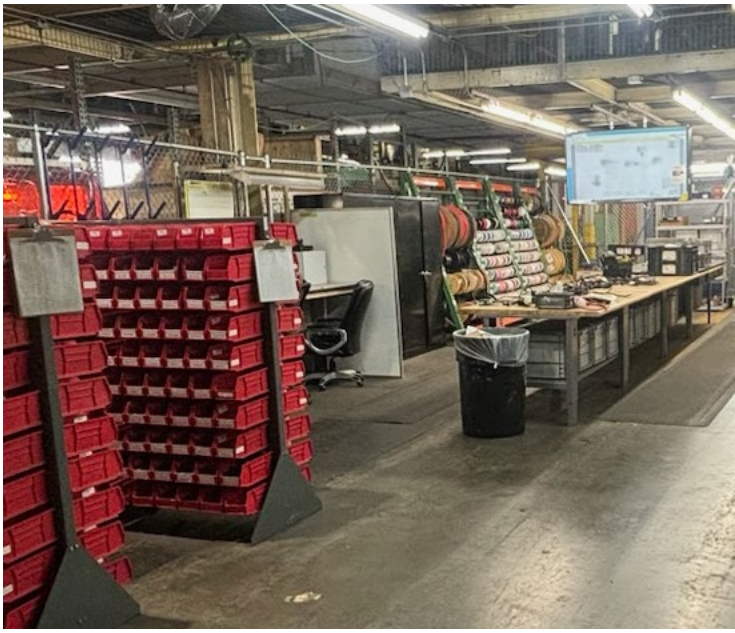
Beyond solving immediate issues, QLS also prevents future harness failures by working directly with the OEM's team to identify potential concerns before they impact production. This proactive approach mitigates defects, enhances product reliability and prevents costly recalls.

"I've seen many facilities with enormous lots of nearly completed vehicles just sitting there, waiting for components or repairs," explains Gray. "Our technicians have the capability to either create or repair harnesses as needed, significantly reducing the waiting times—sometimes even same-day."

A MODEL FOR FUTURE OEM PARTNERSHIPS

This wire harness repair hospital represents a scalable and repeatable solution that could benefit other OEMs facing similar challenges. With QLS's unique blend of technical expertise, on-site support and proactive problem-solving, OEMs can maximize operational efficiency while reducing costly delays.

"As technology advances and electronic systems in vehicles become more complex, the demand for wire harness expertise will only continue to grow," says Gray. "QLS is proud to be at the forefront of this specialized field, providing the solutions that keep manufacturers moving forward."



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