

DRIVING CHANGE ON THE RAILWAYS WITH ADVANCED NDE

North America's largest tank car manufacturer, servicer and railway equipment leasing company is using Industrial Inspection & Analysis (IIA) to vastly improve railcar advanced non-destructive evaluation processes and techniques, as well as enhance their testing data collection.

Advanced Non-Destructive Evaluation (NDE) is the process of inspecting, testing or evaluating materials or components for discontinuities or differences in characteristics without destroying the serviceability of the part or system. The tank car company uses advanced NDE to adhere to federal regulations by evaluating high stress areas including welds, corrosion, distortions or any other condition that would make a tank unsafe for transportation.

THE CHALLENGE

This railcar company was inspecting tank cars via manual testing prior to hiring Industrial Inspection & Analysis. They knew the testing process was antiquated, but consistent with the industry standard, as testing standards date back to the 1980s. "When rail cars are built, only 1 out of 5 get x-rayed, and the other 4 cars won't be inspected for another 10 years," says Chris, NDE Manager for the prominent tank car company. Additionally, upon conducting subcontractor evaluations, there were growing concerns that steps were being skipped in the manual testing process. The tank car company knew they had to update and improve upon the current process to mitigate significant risk.

THE PROCESS

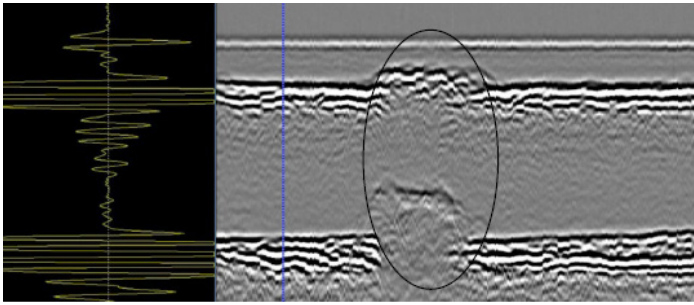
A blind study was conducted by the tank car company comparing testing techniques and findings of automated ultrasonic testing versus manual ultrasonic testing. An IIA Level III Technician performed three tests including Time of Flight Diffraction (TOFD), Phased Array Ultrasonic Testing (PAUT) and manual ultrasonic testing. The tank car company spent thousands of dollars on artificially flawed girth seam specimens they made and brought in, to use in the blind study and test using TOFD and PAUT techniques versus manual.

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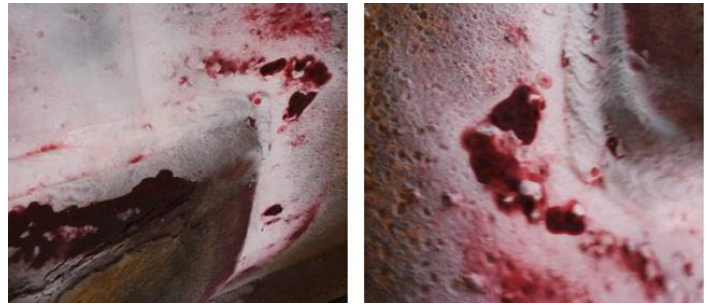
Out of all of my experiences with subcontracted Advanced NDE technicians, the best in the industry are at Industrial Inspection & Analysis.

Chris - NDE Manager

Phased Array scan indicative of cracks.



Time of Flight Diffraction scan indicative of cracks.



(Images are not a direct representation of the tank car company inspections. For illustration purposes only.)

WHY NORTH AMERICA'S LARGEST TANK CAR MANUFACTURER CHOSE IIA

The tank car company was searching for someone with unrivaled advanced NDE experience. The blind study results spoke volumes for Industrial Inspection & Analysis. Chris says, "IIA has changed the way we perform maintenance and quality on our entire fleet. It was a huge, massive change for us." The tank car company now applies Time of Flight Diffraction (TOFD) and Phased Array Ultrasonic Testing (PAUT) inspection processes to all of their cars. By switching from manual ultrasonic testing to an advanced process, it is "changing the entire industry," Chris noted.

THE END RESULT

TOFD and PAUT results proved exceptional, while the manual test was only 50% successful. Based upon these findings, the tank car company changed their testing standards, implementing an automated ultrasonic testing process and abandoning their previous manual testing processes. Doing so created a substantial advantage in the safety of in-service tank cars and improved the quality and consistency of the testing process to drastically mitigate risk.

Furthermore, manual testing lacks any record other than a paper report. There isn't a visual record of the inspection and a digital account is non-existent. Advanced testing allows for a more accurate ability to retain digital files others can review later. By receiving a digital file of the actual scan, the tank car company is able to audit subcontractors versus word-of-mouth verification only.

Lastly, IIA provided advanced NDE testing training to the tank car company employees on these new procedures. This allowed for the opportunity to bring all automated ultrasonic testing in house, subsequently providing a significant return on investment, while also offering a whole new world of inspection techniques and data collection for the tank car company.

Do You Need To Talk To An Expert?

Learn more about how Industrial Inspection & Analysis can solve your industrial challenges.

Call us at 470-552-8301 or visit us at industrial-ia.com