



ULTRASONIC IMPACT TECHNOLOGY (UIT)

Progress Rail's UIT Division is the leader in asset life extension and Total Cost of Ownership (TCO) reduction. Our Ultrasonic Impact Technology (UIT) offers life extension of existing metal structures and components. UIT also offers the potential to improve the performance of parts and structures – whether new-build or replacement. Our equipment is designed and built in the United States of America.

COST SAVINGS

Situation: The US Navy was plagued with stress corrosion cracking. Due to material problems, repairs resulted in new cracks forming adjacent to repair welds. As a result, a repair that might normally cost hundreds of thousands of dollars would end up being five times that as a result of chasing multiple newly formed cracks across the deck plates.

Solution: In April 2008, the Navy requested a field test of Progress Rail's UIT on the USS Cape St. George during depot level repairs. UIT was added to standard weld repair procedures. Progress Rail's UIT is approximately 3X faster than welding, and did not extend time spent in port.

Result: The repairs incorporating UIT on the USS Cape St. George have never experienced cracking since the work was performed in April '08. The U.S. Navy has specified UIT on a total of 17 ships and an estimated 2,500 feet of weld repairs. There have been no reports of cracks or failures in areas treated with UIT on any ship (note: prior to incorporating UIT, repaired areas would typically crack in a matter of hours or days). The estimated cost savings was in the tens of millions of dollars.

PERFORMANCE ENHANCEMENT

Situation: One of the US's closest allies experienced systemic weld cracking in a retrofitted M113 mortar vehicle. The recoil of the mortar system caused cracking in critical weldments supporting the mortar turntable.

Solution: Progress Rail's UIT Division experts worked with the allied defense department and prime contractor responsible for retrofit, and designed a solution, incorporating Progress Rail's UIT into the weld procedure.

Result: The UIT treated M113 mortar vehicles have performed flawlessly in testing, field conditions and combat. Progress Rail's UIT was a simple and cost-effective addition to the retrofit design. It enabled the vehicle to handle a newer, more powerful weapons system, while eliminating the need for costly redesign of structural members.

ULTRASONIC PEENING





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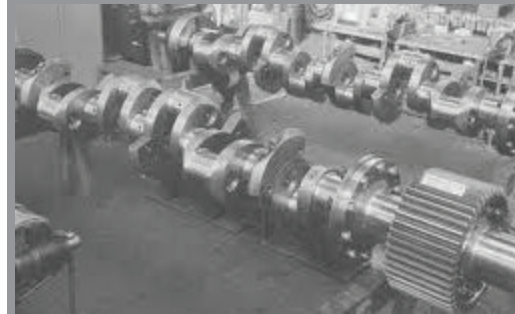
ULTRASONIC PEENING

WEIGHT REDUCTION

Situation: A major OEM is working to significantly reduce the weight of a new product line. Weight reduction gives them an advantage in fuel efficiency, payload, performance, and handling.

Solution: While the details of this program are confidential, Progress Rail's UIT Division technical experts worked closely with OEM to develop the most efficient methodology for weight reduction. Thinner and lighter members are possible because of the fatigue strength/fatigue life benefit provided by Progress Rail's UIT.

Result: The manufacturer projects very strong sales as it represents a dramatic improvement over standard design and build practices.



LIFE EXTENSION (NEW PRODUCTS)

Situation: The leading manufacturer of heavy vehicle and equipment shafts sought a method to extend the life of their products. At the time, they were using a cold-working methodology to impart residual compressive stress at high stress locations on their heavy crankshafts and drive shafts. While their shafts enjoyed an excellent reputation for quality and long life throughout industry, this manufacturer was interested in pushing the envelope and producing the longest lasting shafts possible.

Solution: The manufacturer ran a series of head-to-head tests comparing Progress Rail's UIT to their legacy cold working solution. The results were conclusive. Progress Rail's UIT resulted in 5X longer life than the alternative.

Result: Progress Rail and the manufacturer have enjoyed a 10+ year relationship. The manufacturer treats all drive shafts and crankshafts with UIT to extend their life and improve their reliability.

LIFE EXTENSION (EXISTING)

Situation: Every industry is dealing with the challenge of aging assets. This situation applies to aging highway infrastructure, industrial facilities, weapons systems, rolling stock, and other assets.

Solution: Stuttgart University demonstrated conclusively that Progress Rail's UIT effectively doubles the fatigue life of aging structures. In other words, UIT "resets the clock" on structures and components that are fatigued and are near or past the end of their design life.

Result: Progress Rail's UIT is utilized to retrofit and revitalize steel bridges throughout the US and abroad, and was included in Section 11.9 of the AASHTO Code. UIT has helped extend the life of over 75 bridges, resulting in tens of millions of taxpayer dollars saved. Additionally, businesses such as Nippon Steel and Sumitomo Metals utilize UIT to extend asset life within their facilities, dramatically reducing maintenance costs.

