

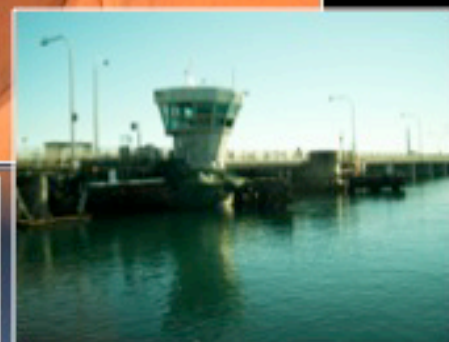
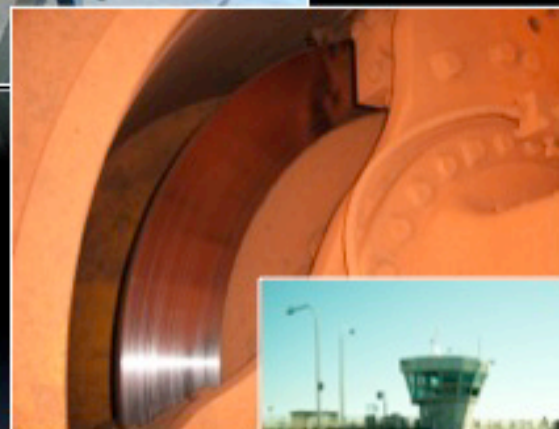
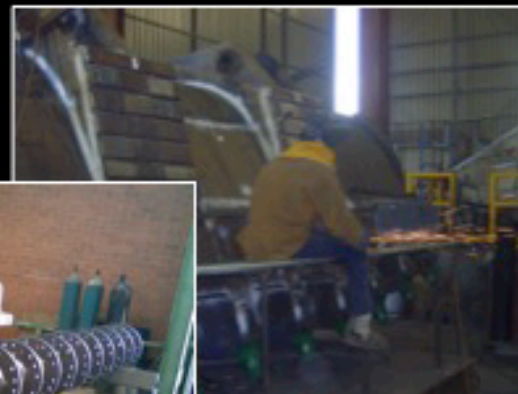


Ultrasonic Impact Technology

U.I.T. PRESENTATION

The Customers

- Howard Australia
- Rio Tinto (Hunter Valley Mine)
- Rio Tinto (Bengalla Mine)
- Glencore (Narama Mine)
- BHP (Mt. Arthur)
- RMS (Swansea Bridge)
- QLD Rail (Coal Carriages)
- BAE Systems (Adelaide)
- Anglo American (Drayton Mine)
- Rio Tinto (Mt. Thorely Warkworth)
- Glencore (NewLands Mine)
- Norske Skog (Boyee Tasmania)
- Glencore (Mangoola)
- Rio Tinto Alcan (Yarwun)
- ALS Industrial Power Services (Cardiff)
- Bradken (Mt. Thorley)
- RMS (Liverpool Rail Bridge)
- Austin Engineering (Muswellbrook)



The Beneficial Effects of UIT

UIT enhances the properties of metal components by Increasing Hardness, Prolonging useful life and improving corrosion resistance.

- Altered Stress Profile
 - Uniform stress profile across treated surface
 - Introduction of compressive stresses to a depth of up to 3mm
 - Relaxation of residual stresses to a depth of up to 12mm
- Increased Surface and Sub-Surface Properties
 - Reduction of Sub-Surface Porosity
 - Grain Densification
- Grain Modification
 - More Linear
 - Increase Micro Hardness

The VALUE of U.I.T. to you

- Extend the cycle time
 - Maintenance Cycle
 - Reduced Downtime
- Cut your Maintenance costs
- Improved asset reliability
- Increased production
- Offer solutions to reoccurring problems
- Use the relationship
 - Research
 - Resources
 - Communication
- Potential Government R&D Funding

Environmentally Friendly



- Light weight
- No user vibration
- Safe
- Easy handling
- Compact tool
- Mobile
- In shop/ Field Application
- 240v 50hz cycle
- Draws less than 10amps
- Does not require special PPE
- Lower RSI risks

Research

- [FHWA](#) – Turner Fairbanks R&D on Bridges
- [Lehigh University](#) – Research carried out by world renowned leader in fatigue design on bridges – Prof. John Fisher
- [University of Texas](#) – Research funded by Texas DOT to investigate benefits for traffic signal mast arms
- [Portland State University](#) – Research being funded by companies in North West States of USA
- [Nippon Steel Corporation](#) – Validation testing done on various types of steels and weldments thereof
- [LUT](#) – Technical University in Finland – Professor Gary Marquis
- [NTNU](#) – Norwegian Technical University – Professor Per Haagenzen
- [Swedish Steel Company](#) – SSAB Research into benefits for high strength steels
- [ESAB and TKS](#) – Analysis of benefits for welding of 1100MPa (140ksi) steels
- [Fraunhofer Institute](#) – World renowned automotive research institute – effects of UIT on aluminum
- [Sheffield University, UK](#) – Funded research for aerospace industry (Airbus, Boeing, EADS) on aluminum structures
- [Stuttgart University](#) - Fatigue characterization of high strength steel structures
- [University of Braunschweig](#) – Fatigue performance of welded structures
- [Center of Maritime Technologies](#) - Shipbuilding weldments of thin plates steel
- [Ontario Ministry of Transport](#) – Acceptance criteria for UIT

Suggested next steps

- Identify the most immediate/ expensive reoccurring problem
- Jointly define the scope of work
 - Process
 - Procedure
 - Measurement
- Equipment Requirements
 - Location
 - Number of machines
 - Standard/ Modified
 - Timing
- Identify long term/ preventative applications
- Training needs/ Schedule
 - Testing and Validation
- Tailoring a agreement

The Agreement

- **Service Model**

- Define Scope of work
- Define equipment requirements
- AUA technicians carry out the work
 - Onsite
 - In a shop

(All technicians are approved to work in the required location)

- **Lease Model**

- Suitable for High volume / Long-term work or a major infrastructure project.
- We work with you to define scope of work
- Develop the appropriate procedures
- Train your operators
- Maintain the equipment on an agreed cycle
- Training reviews (Particularly helpful with staff turnover)
- Process reviews

Thank You!