

“Where will our knowledge take you?”

Welding Engineering Technology Services

With research and development (R&D) trained and hands-on service experienced welding engineers, technologists, metallurgists and mechanical engineers, BMT Fleet Technology (BMT) provides code compliance, trouble shooting and production engineering support that makes the difference.

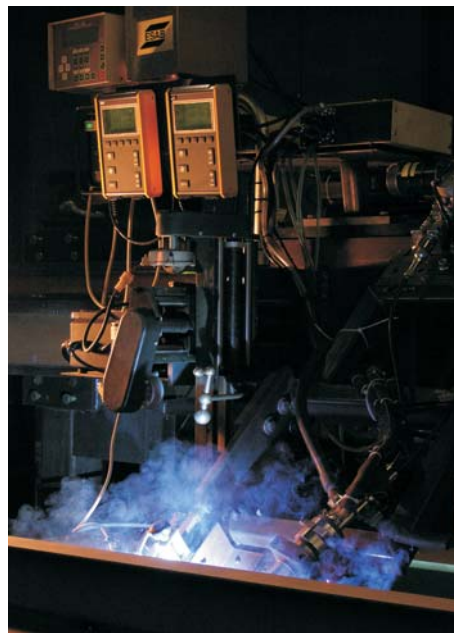
BMT is a leading welding engineering technology organization providing a complete range of problem solving and solutions oriented production support services that include:

- Welding process and consumable development
- Welding procedure optimization and qualification
- Productivity auditing and strategic production streamlining
- Retained welding engineering and technical design expertise

United States National Shipbuilding Research Program (NSRP)

BMT conducts research and development projects in support of shipbuilding in the United States specializing in welding, metallurgy, fatigue and fracture testing.

These services are offered for product and process innovation, to improve efficiency, enhance product safety and reliability for marine, offshore facility, pipeline, power generation, mining, civil structure, military and general manufacturing clients.



BMT offers productivity enhancement services to industry through fabrication auditing and optimization of cutting, welding and assembly operations. Productivity enhancement is accomplished through:

- Development of superior production flow and fabrication sequences
- Improvements in component and welded connection design
- Optimizing joint completion rates through process and consumable selection and automation
- Reduced repair rates through welder training
- Reduction in “man hours lost” by increasing work place safety



Submarine Pipe Welding

One of the problem areas when carrying out maintenance work on submarines is making weld repairs on complex piping systems that are typically located in places with limited radial clearances. BMT was asked by the Department of National Defence (DND) to carry out an independent review of currently available mechanized gas tungsten arc welding (GTAW) systems and assess their effectiveness. BMT identified and tailored automated GTAW welding processes that delivered a consistent high quality weld in confined spaces and showed productivity increases of up to 700% over current manual methods.

Industry Leading Production Support Services

BMT's full range of materials testing and welding capabilities make the development of proven holistic solutions readily available to enhance product throughput, increase quality and service life and maximize structural integrity.

BMT's welding engineers, engineering technologists, metallurgists, and technical support staff provide a diverse expertise backed by fully equipped laboratories with a variety of machining, welding, metallurgical and mechanical testing capabilities.

BMT's welding procedures are verified through standard and/or custom tests including tension testing, Charpy impact, crack tip opening displacement (CTOD), fracture toughness (JIC and KIC), dynamic tear, bend testing and hardness testing. Custom experimental and numerical tests are also available to evaluate hydrogen cracking susceptibility and to predict the delay time for hydrogen cracking to occur for welding procedures and repair/operational conditions.

Welding technologies available include:

- Gas metal arc welding (GMAW)
- Pulsed gas metal arc welding (PGMAW)
- Flux-cored arc welding (FCAW)
- Metal-cored arc welding (MCAW)
- Pulsed metal-cored arc welding (PMCAW)
- Shielded metal arc welding (SMAW)
- Submerged arc welding (SAW) (DC, AC, and variable balance AC)
- Gas tungsten arc welding (GTAW)
- Pulsed gas tungsten arc welding (PGTAW)



Welding Refurbishment and Repair

BMT specializes in developing weld repair technology for relatively sophisticated alloys used in engineering components. These techniques are documented in the form of working procedures to be used by the client.

BMT has a fully equipped welding facility, together with extensive metallurgical laboratories and personnel with experience in fatigue and fracture who advise on design aspects of the equipment if inferior design has been instrumental in the damage.



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