

Immersion Tanks Business Overview

Capability Roots

In 1994, Metals Testing Company (MTC) began a journey that has since led to its **MTC Systems** division being a capable World Class provider of immersion tanks and tank upgrades. In that year, a previous market leader in the supply of new immersion tanks, JB Engineering, was exiting the business due to a market down turn and the loss of key resources on its electrical/software motion control side of the business. The last 3 tanks to ever be produced by JB Engineering were mechanically assembled but laid dormant awaiting necessary wiring and software to be completed. In stepped HNS Consulting to finish the job and ultimately deliver and install the 3 tanks at MTC in 1995. HNS Consulting thereafter became a continuous resource at MTC to upgrade and maintain a total of 5 immersion tanks.

Over the next 4 years, numerous maintenance and upgrades were performed on all 5 tanks. In some cases, the systems were effectively stripped down to the bare tank and rebuilt from scratch. Motion control software was also enhanced to interface with a Sonic-138 UT instrument, and to handle body-of-revolution scanning.



First Generation Upgraded JB Tank doing Turntable Scanning

Need for Complex Contour Following

In 1999, MTC's immersion tank capabilities were pushed to a new level. After going to numerous immersion tank system manufacturers and coming up short, a major aerospace engine manufacturer brought its challenging complex contour following application to MTC. The difficulty in the inspection, and ultimately in the motion control system and software, was to address a non-parallel bondline within a forged airfoil blade.

MTC worked diligently, and developed and delivered the complex contour following (CCF) capability in 2000. The capability has since been used to inspect the first generation advanced fan blades for both military and commercial aircraft.

In conjunction with developing the CCF motion control capability, MTC also acquired its first IntraSpect™ C-Scan data acquisition system and integrated it in 2000.

Rounding Out the Team

In 2002, MTC brought on another significant resource relative to immersion tank and UT C-Scan businesses: AMDATA NDE Technology (ANDET). ANDET rounds out the capability to be a full service provider with respect to being an immersion tank system supplier. ANDET provides:

- ❑ A strong knowledge base of IntraSpect technology as the result of being a former key employee of the associated manufacturer from 1985 to 2001.
- ❑ Project management capabilities in large aerospace, military, and overseas custom C-Scan system projects.
- ❑ First hand experience in the installation, startup, and operator training related to immersion tank systems.
- ❑ Dedication to provide IntraSpect technology to non-nuclear power generation markets, with special emphasis on aerospace.
- ❑ Relationships with key equipment suppliers to augment MTC System's capabilities, if necessary.



Second Generation CCF Raster Application

Tomorrow's Technology Today

The combined business resource has led to the further development of CCF into a third generation capability. This capability was developed in the closing months of 2002. It has since been approved for the inspection of an engine part for the world's premier next generation military fighter aircraft.

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