

LTC Releases BEMIS-MC™ Portable, Laser-Based Gun Bore Measurement and Inspection System

In December, 2010, Laser Techniques Company (LTC) released its newest member of the BEMIS™ family of laser-based Bore Erosion Measurement and Inspection Systems. The BEMIS-MC™ medium caliber, portable, laser-based inspection system is a ruggedized field inspection system that can scan a weapon barrel while it is still “on-carriage” and without disassembly or removal of a muzzle brake.

The LP-4210F-based field systems provide the same high-level inspection data as LTC’s laboratory models, yet the on-tube portability feature now makes highly accurate field inspections possible. Operators and inspectors are able to determine tube condition on-the-spot. Simultaneously, the BEMIS-MC™ system is capable of transmitting data through a network back to the lab or saving for later to conduct in-depth analysis.



BEMIS-MC™ 35mm Portable Bore Erosion Measurement and Inspection System



Side-by-side – The BEMIS MC™ 40mm and 57mm systems during integration testing at LTC’s Redmond facility

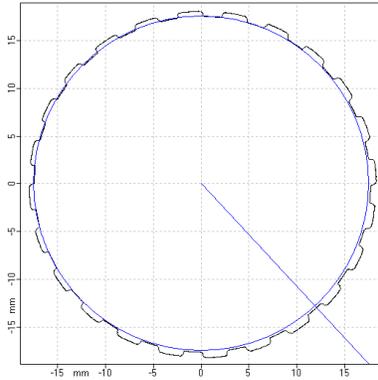
The initial BEMIS-MC™ 35mm model was delivered to the Spanish Army with follow-on 40mm and 57mm systems in use by BAE as part of their Integrated Logistics Support (ILS) system for new weapons.

Many manufacturers and depot-level maintenance facilities still inspect gun tubes by hand using a mechanical “star” gauge that must ride in the barrel’s grooves. This only measures diameters and takes two people over three hours to manually measure a large tube. That inspection only returns data from two set points

on the tube, zero and 90 degrees. Any copper build up can slow the inspection and the gauge could actually get stuck inside the barrel. Electronic star gauges were developed similar to earlier gauges, but testers and evaluators could access the data via computer to enhance speed and accuracy. This system reduces time, but still only yields data at the zero and 90 degree points.

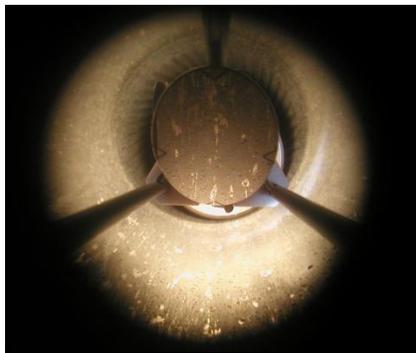
Video bore scopes can provide 360 degree video data at up to 700 lines of resolution and documentation for the customer. However, the video does not contain quantitative data. Additional drawbacks of this technology are that the images could be distorted and data analysis was still labor intensive, time consuming, and subject to operator interpretation.

Laser Techniques developed the laser-based bore mapping system because there was a need for a new instrument that could perform automated, quantitative, non-contact measurements in a short period of time.



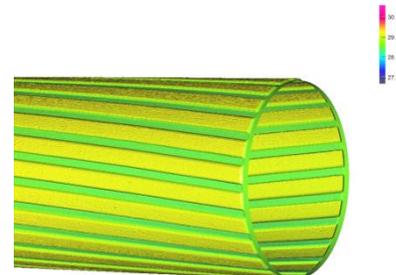
Cross-section of 35mm gun barrel generated by LaserViewer™ software

LTC's laser-based gun bore scanning system provides customers with high resolution images that can be analyzed for erosion, wear, pitting, chrome loss or copper build-up. Customers get a true picture of a bore's condition through the laser sensor's three dimensional data capturing capabilities. The system not only shows wear, erosion, pitting or chrome loss on a tube, it also accurately measures the length, width and depth of any anomalies. The accurate and quantitative three-dimensional scan results can also be used to create modeling and simulation packages, and its unique LaserVideo™ images provide a camera-like visual indication of the gun tube's surface.



Typical bore scope images are distorted and subject to operator interpretation

The laser spot size is approximately 2/1000th of an inch in diameter when it is projected onto the barrel surface and the sensor is capable of acquiring over 7,000 data points per revolution inside the barrel. This level of resolution is a long way from the two zero and 90 degree data points attainable just a few years ago.



LaserViewer 3D™ image segment generated from BEMIS™ quantitative, laser-based data

Precision calibration rings are used before every setup to insure uniform accuracy. Live data is transmitted in real time to a computer that uses specialized software to assist analysis and can be saved for later study and manipulation. That software allows users to accurately locate and measure damage or wear within 1/1000th of an inch. To learn more, visit <http://www.laser-ndt.com>