



SURVIAC Success Story

High Explosive Testing

<http://iac.dtic.mil/surviac>

Customer:	US Army Armament Research, Development and Engineering Center (ARDEC), Energetics, Warheads and Manufacturing Technology Directorate (EWMTD).
Challenge:	ARDEC's test facility uses several methods for capturing the effects of new high-energetic explosives and advance warheads in order to achieve accurate analysis of penetration performance, fragmentation behavior and detonation characteristics of the new high-energetic explosives and munition components. However, equipment and test area configuration limited the ability to efficiently perform repetitive testing without constant manipulation and adjustment of equipment on a test-to-test basis.
Approach:	SURVIAC provided system test planning and analysis results, and made recommendations in standardizing munitions test protocols. SURVIAC recommended improvements to the test facility and helped with the design. The lab was redesigned to accommodate a more efficient use of space and improve the procedures for the performance and analysis of testing. In addition, SURVIAC created and designed templates to analyze and chart fragment velocity as well as jet tip characterization. The reporting template provided step-by-step guidance throughout the process of manipulating the x-ray images, measurements, calculation of fragment patterns, and charting the results. As a result of this process, SURVIAC provided recommendations for the design of a new test fixture for testing primer initiation devices for small and medium caliber munitions.
Value:	ARDEC adopted the SURVIAC recommendations for the redesign of their test facility. The redesign has improved the efficiency of the laboratory in addition to enhancing the accuracy, details and turnaround of test results. The new test fixtures allow pictures and X-rays to be taken and recorded during explosives testing. This enhancement enables lab technicians to accurately record data on the performance of the explosives

	and analyze potential improvements for lethality. This high-fidelity test data is essential to drive research, design and development of improved weapon lethality and survivability of the Warfighter.
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