



SMALL ARMS TEST FACILITY

A UNIQUE CENTRE OF EXCELLENCE

LITHGOW ARMS BATTLE PROVEN SINCE 1912



SMALL ARMS TEST FACILITY

IS A UNIQUE CENTRE OF EXCELLENCE FOR THE EXPERT TECHNICAL ANALYSIS OF WEAPONS ENGINEERING AND PERFORMANCE.

Weapon kinematic analysis

A range of equipment is available to study the dynamics of moving parts, how loads and forces are distributed throughout the weapon system, and to improve and optimise performance.

MSC CAE Software Tools, including MSC Adams, help eliminate slow and costly physical testing by creating and testing virtual prototypes that can be quickly evaluated for performance in any environment or conditions.

High Speed Video (HSV) can record at speeds of up to 240,000 frames per second and is used to identify and quantify weapon dynamics. It can also record and analyse the consequences of dynamic events such as obstructed bore, as well as impact events such as armour testing.

A Laser Displacement System (LDS) enables the accurate measurement of weapon gunlock displacement and velocity. The LDS effectively profiles weapon function, allowing quick and accurate fault finding to assist design activities.

Rate of Fire is recorded using a hand held recordable blast switch.

S3 testing and environmental conditioning

The SATF includes several cabinets that facilitate the conditioning of ammunition and weapons. These cabinets are programmable to allow diurnal cycling.

All data is logged for subsequent analysis.

Other conditioning is available, including static and dynamic sand and dust testing; safety and robustness drop testing; driving rain and icing; contamination by fluids; and vibration (via external supplier).

External ballistics testing

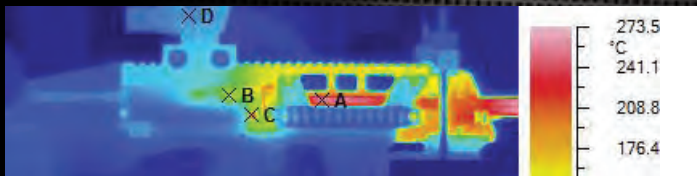
The SATF is capable of measuring projectile velocity, accuracy and dispersion according to multiple methods.

Velocity Screens allow projectile velocity to be measured in accordance with NATO standards, while a two-lane portable Acoustic Projectile Locating System (PLS) allows the location of any supersonic projectile to be calculated in fractions of a second, with X and Y coordinates displayed and logged. Additionally, the PLS is capable of providing projectile velocity at the target position.

Finally, Ballistic DB Software, embedded into the PLS, automatically analyses the shot data captured, and provides and logs information including Mean Point of Impact (MPI); Group Size; Group Rectangle; Group Standard Deviation; Probability of Hit; and Rate of Fire.

Verification and acceptance test planning and procedures (ATP&P)

Lithgow Arms employs a robust Verification and ATP&P process — an integral component of systems engineering management ensuring the verification of requirements is fully embedded in test planning. The SATF team has a thorough knowledge of relevant international standards, as well as the skills and experience required to deviate from these standards where appropriate, while ensuring clear and robust outcomes.





Lithgow Arms' Small Arms Test Facility (SATF) is a unique centre of excellence for the expert technical analysis of weapons engineering and performance.

Based in Lithgow, NSW, the SATF supports the Commonwealth's Priority Industry Capability in infantry weapons, and is also available for use by external customers.

The SATF comprises tools, testing and analysis capabilities that cannot be found elsewhere in Australia, making it a valuable addition to the range of existing support mechanisms for Australian Defence Force (ADF) service personnel on operations.

CAPABILITIES

- Weapon kinematic analysis
- Safety and Suitability for Service (S3) testing
- Environmental conditioning
- External ballistics testing
- Verification and Acceptance Test Planning and Procedures
- Technically compliant with Australian Defence Force requirements



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