

QINETIQ

Target Systems



Rattler

Supersonic Target (ST)

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The Rattler Supersonic Target (ST) system has been designed and engineered to be a cost effective target that emulates advance missile threats with varied profiles. This Supersonic Target System uses a combination of the successful Banshee Jet 80+ and supporting equipment carrying the Rattler ST as a payload.

QinetiQ Target Systems (QTS) will operate Rattler ST for highly effective weapon system Research Development, Weapon Acceptance, Operational Training and Test & Evaluation for air defence scenarios. This complete system can also be procured to be operated by customers in line with our current offerings.

The Rattler ST is suitable for use over land and sea. This capability entered service with an Initial Operating Capability (IOC) in February 2022, and can either be ground launched or carried under the Banshee Jet 80+ target and air launched, providing a great mission range and performance envelope. The Rattler ST has achieved ground launch speeds in excess of Mach 1.85, and air launch speeds in exceed of Mach 2.6.

The Rattler ST uses a unique material composition that provides high-speed kinematic performance at very low cost compared to the currently available manoeuvrable supersonic targets.

The design offers modular payloads. The flight envelope includes a lower-level air-launched profile at 150m with straight and level flight at 50m (with validation flight planned in 2023).



Rattler ST Specifications

Physical

Length	1.772m (70in)
Diameter	0.155m (5.9in)
Weight	27.3kg (63lb) to 30kg (66lbs) (configuration dependent)
Construction	Aerospace aluminium alloys and composites
Propulsion	Solid-propellant rocket motor
Environmental	No toxic or hazardous components or debris after successful flight and termination
Flight Safety	Flight Termination System and real-time GNSS/INS TSPI

Depending on the payload configuration required by the user the Rattler ST may transmit Time Space and Positioning Information (TSPI) and target status telemetry data in real time for range safety and operational requirements' monitoring, and can accommodate radar or infrared augmentation, and other payload integration for specific weapon system requirements.

Rattler ST optional payloads include a passive radar cross-section augmentation unit, QinetiQ High Speed Telemetry module, a high bandwidth data link module, ADS-B, and GoPro camera unit. QinetiQ is able to develop and integrate custom payloads for Rattler ST.

Additionally, the target includes a Flight Termination System to maintain range safety during all phases of flight.

The flight profiles of the Rattler ST are dependent on the speed and altitude of the Banshee Jet 80+ at the moment of launch. These, combined with the programmable Rattler ST waypoint profile, determine the speed and trajectory of the target during its flight.

Rattler ST Performance

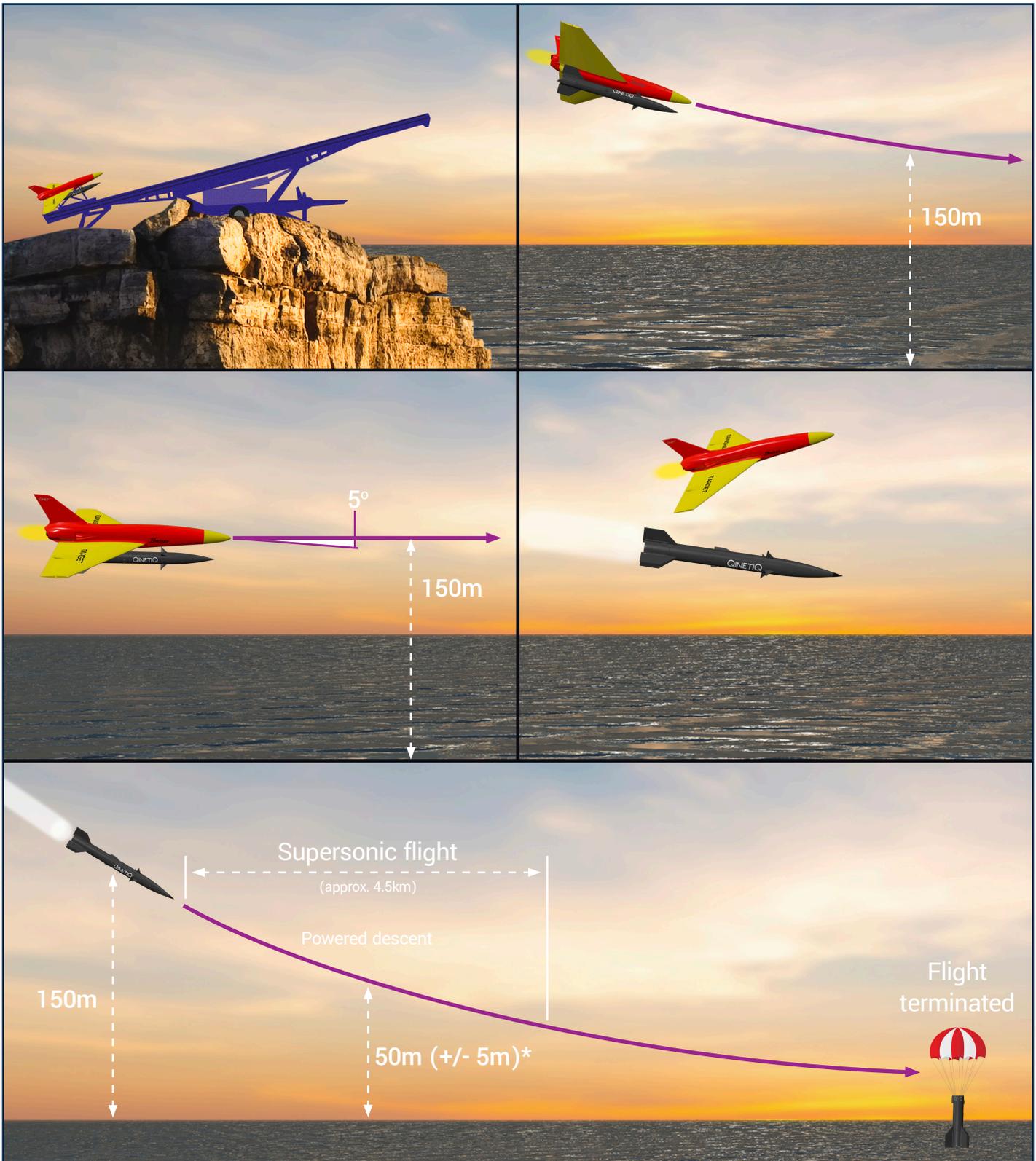
Performance Features

- ARM/Supersonic High-Diver threat replication
- A true supersonic missile threat, with proper high speed kinematic performance
- Corkscrews and weave maneuvers
- Suitable for use over land and at sea
- Target performance and RCS adaptable to mission requirements
- Operating Frequencies: 423 MHz, 429.6 MHz, 430 MHz, 432 MHz (and potentially additional frequencies)

Typical performance envelopes

- >Mach 1.85-2.6
- Maximum supersonic endurance 15 seconds (profile dependent)
- Mission range: up to 100 km (air launched mode from Banshee Jet 80+)
- Rattler ST maximum range (profile dependent) 22.83km (29km not flight validated)
- Altitude above sea level 50m to 8000m

Illustrative Mission Profile



*To be tested in 2023

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