QINETIQ

Banshee Jet 80+

Aerial Targets

Following the successful introduction of the Banshee Jet 80 in 2014, the Banshee Jet 80+ offers customers the opportunity to reach speeds of 200 metres/second with endurances exceeding 40 minutes at a market-leading price.

The current version is fitted with twin 45kg thrust gas turbine engines giving a total of 90kg of static thrust. This offers an increase in the maximum straight and level airspeed of up to 200metres/second. The use of an auxiliary fuel tank ensures that endurance is similar to that of the single engine version with a typical mixed throttle mission time in excess of 45 minutes.

When fitted with the patented Hot Nose the target provides a forward and side-looking IR source with output in Bands I, II and III, whilst the jet engines provide a realistic rearward looking IR signature.

All other well proven augmentation devices traditionally available to Banshee can be fitted to this latest twin jet engine derivative.

The Banshee range of Aerial Targets are typically used by customers to represent threats posed by UAV's, enemy aircraft and general aerial threat weapons. Variants of Banshee have been used by customers to test the effectiveness and operational readiness of weapon systems including:

- Air-to-Air Missiles: Meteor, AMRAAM, Aim-7 Sparrow, Aim-9 Sidewinder, IRIS-T, MICA, Aspide, and R550 Magic Missile
- Ground/MANPAD/Surface-to-Air Missiles: Stinger, AKASH, Sea Wolf, Mistral, Sadral, Rapier/Jernas, HVM, Simbad, Crotale, Blowpipe, Javelin, Starburst, Starstreak, Sea Sparrow, ESSM, SPYDER, NASAMS, SM1, SM2 Hawk, and Patriot
- Guns/Cannon Systems: Phalanx, Sea Zenith, Seaguard, AHEAD, Goalkeeper, plus a range of large/medium cal naval guns and cannon systems (20mm-155mm)

Key Features

Suitable for use on land and at sea
Suitable for use against surface-to-air and air-to-air weapon systems
Target performance and enhancement easily varied by plug-in modules
Target airframe and enhancements proven worldwide over many thousands of in-service operations

Banshee Jet 80+ Specifications

Physical	
Wingspan	2.49m (8ft 2in)
Length	2.85-2.95m (9ft 5in-9ft 8in) (typical, dependant on configuration)
Height	0.78m (2ft 6in)
Wing Area	2.42m^2 (26ft^2)
Power	Two 45kg static thrust gas turbine engines

Performance	
Speed Range	50-200m/s (97-389 knots) (180-720km/hr) (ISA Standard, clean configuration, half fuel)
Launch Speed	45m/s (87 knots) (162km/hr) (typical, dependent on all-up-weight)
Operating Range	>100km (54nm)
Endurance	>45 minutes at typical mission, mixed throttle settings
Maximum Altitude	9,144 metres (30000ft)
Minimum Altitude	5 metres (16ft) ASL
Recovery	Parachute

Other features	
Stabilisation	QinetiQ's CASPA Avionics with digital autopilot and 3 axis IMU
Tracking and Telemetry	Integrated GPS, autonomous waypoint navigation and digital telemetry systems
Typical Payloads	Up to 8 smoke tracking flares Up to 16 infra-red tracking flares (Combinations of flares may be carried and activated as required) Hot nose, black-body IR source IR and chaff decoy dispensing pods IFF transponder capable of modes A and C Luneberg Lenses Frequency specific, active radar augmenters Radar altimeter, sea-skimming module Acoustic and Doppler radar MDI ARHE (Active Radar Homing Emulator) (these payloads may be mixed and some carried simultaneously)

The Banshee target can simulate an enemy aircraft or cruise missile

Note: Due to continuous process improvements, specifications are subject to change without notice.

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www.QinetiQ.com

QinetiQ/19/00479

For further information please contact:

QinetiQ Target Systems
The Boulevard, Orbital Park
Ashford, Kent, TN24 0GA
United Kingdom

+44 (0)1233 505600
customercontact@QinetiQ.com
www.QinetiQ.com

QINETIQ

Banshee Next Generation (NG)

Aerial Targets

The highly effective Banshee family of aerial targets continues to grow. Following on from the successful Banshee Jet 80 and Jet 80+ launched in 2014 and 2018 respectively, the Banshee NG is a new generation of aerial target, providing unparalleled performance at a market-defining price.

Building on the success of the Banshee family, the Banshee NG is based on a new and novel design and is powered by twin gas turbine engines providing a straight and level air speed in excess of 250m/s. The fuel load is 100 litres, giving an endurance of over one hour, dependant on mission parameters. The airframe design allows for increased agility, providing high sustained manoeuvring capability to simulate a wider range of threats.

ITAR Free

Designed on Banshee heritage, the Banshee NG offers customers the benefit of system familiarity, allowing them to operate this new target from their existing ground station and Hercules pneumatic launcher or other launchers with equivalent performance.

It offers the same flexibility as other Banshee targets, with simple maintenance, ease of operation, and high reliability. This flexibility extends to the wide range of payloads the Banshee NG can carry, including those from the Banshee Whirlwind and Banshee Jet targets, in multiple payload locations.

Banshee aerial targets are typically used by customers to represent threats that include UAVs, fighter aircraft and subsonic cruise missiles, with most used to test the effectiveness and operational readiness of weapons systems, including, but not limited to:

- Air-to-Air Missiles: Meteor, AMRAAM, Aim-7 Sparrow, Aim-9 Sidewinder, IRIS-T, MICA, Aspide, and R550 Magic Missile
- Ground/MANPAD/Surface-to-Air Missiles: Stinger, AKASH, Sea Wolf, Mistral, Sadral, Rapier/Jernas, HVM, Simbad, Crotale, Blowpipe, Javelin, Starburst, Starstreak, Sea Sparrow, ESSM, SPYDER, NASAMS, SM1, SM2 Hawk, IGLA and Patriot
- Guns/Cannon Systems: Phalanx, Sea Zenith, Seaguard, AHEAD, Goalkeeper, plus a range of large/medium cal naval guns and cannon systems (20mm-155mm)

Future developments of this Banshee NG will allow for increased speed, payload, and manoeuvring capability up to Transonic performance.

Banshee NG Specifications

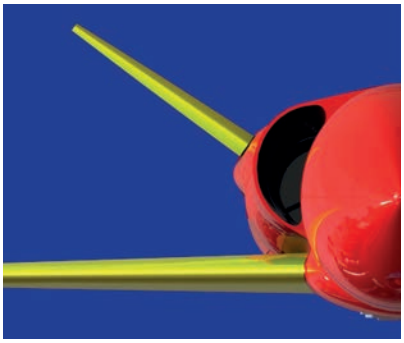
Physical	
Wingspan	1.989m (6.52ft)
Length	3.33m (10.95ft) (typical, dependant on configuration)
Height	0.52m (1.7ft)
Wing Area	1.77m^2 (19ft^2)
Power	Twin gas turbine engines

Performance	
Speed	In excess of 250m/s (485 Knots) (900km/hr) (ISA Standard, clean configuration, half fuel)
Launch Speed	50m/s (97 knots) (180km/hr) (typical, dependent on all-up-weight)
Operating Range	>100km (54nm)
Endurance	One hour, dependant on mission parameters
Maximum Altitude	12,000 metres (39,360ft)
Minimum Altitude	3 metres (10ft) with RADALT payload
Recovery	Parachute
Maximum Target Weight	205kg
Maximum Payload Weight	25kg

Other features	
Stabilisation	New generation of QinetiQ's CASPA Avionics with autopilot and 3 axis IMU
Tracking and Telemetry	Integrated GPS, autonomous waypoint navigation and telemetry systems
Typical Payloads	Active radar homing emulator Radar jammer Up to 16 smoke tracking flares Up to 16 infra-red tracking flares (combinations of flares may be carried and activated as required) Hot nose, black-body IR source IR and chaff decoy dispensing pods IFF transponder capable of modes A and C Luneberg Lenses Frequency specific, active radar augmenters Radar altimeter, sea-skimming module Acoustic and Doppler radar MDI (these payloads may be mixed and some carried simultaneously)

Key Features

- Exceptional performance to price ratio
- High manoeuvrability, Low RCS
- Target performance and enhancement easily varied by wide variety of threat representative payloads
- Employs a proven independent flight termination system



Innovative design for increased performance

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www.QinetiQ.com

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For further information please contact:

QinetiQ Target Systems
The Boulevard, Orbital Park
Ashford, Kent TN24 0GA
United Kingdom

+44 (0)1233 505600
qtsmarketing@qinetiq.com
www.targetsystems.QinetiQ.com

QinetiQ Target Systems
#3 – 1735 Brier Park Rd NW
Medicine Hat, AB T1C 1V5
Canada

+1 403 528 8782
contact@QinetiqQ.ca
www.targetsystems.QinetiQ.com

QINETIQ
AirAffairs

Airpod 101

Special Mission Pod

The Airpod 101 was designed and manufactured by QinetiQ Air Affairs for special mission applications. This rectangular subsonic pod is flight cleared and certified on the Learjet 30 series aircraft and a variety of configurations are available.

The main structure beam attaches to either 30- or 14-inch wing stores racks and supports the five bulkhead frames. Formed upper and lower skin panels provide pod rigidity and easy removable side panels. Forward and aft fairings or radomes are installed to complete the assembly.

The Airpod 101 consists of the following major items:

- 4 equipment bays can hold standard 19-inch rack mounts. Access from front and rear and sides, permits unlimited installation options;
- Panels fit to preclude moisture; and
- Nose and tail fairings can be supplied as radomes, optically clear for video or photography, or of a standard fibreglass construction.

The Airpod comes with a full engineering package approved by Australian CASA, German LBA, FAA and flight clearance on Learjet to 35,000 feet and Mach 0.80 and has a 792 lbs payload capacity. The Airpod is in service as an EW pod for the German Air Force, Singapore Technologies and is fitted with survey and IR scanners in Australia.

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AirAffairs

Airpod 101 Specifications

Physical	
Length (excl. radomes)	1940 mm (76.0 in)
Width	Internal: 500 mm (19.7 in) Overall: 506 mm (19.9 in)
Height	Internal: 386 mm (15.2 in) Overall: 440 mm (17.3 in)
Bay Length (Opening)	Bay 1: 500 mm (19.68 in) Bay 2: 365 mm (14.38 in) Bay 3: 335 mm (13.19 in) Bay 4: 535 mm (21.10 in)
Bay Height	380 mm (14.0 in)
Bay Height (Opening)	275 mm (10.9 in)
Weight (Empty)	92 kg (207 lbs)
Weight (Maximum inc. Payload)	363 kg (800 lbs)
Maximum Available Payload	268 kg (593 lbs)

Specially designed and manufactured for special mission applications.

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www.QinetiQ.com.au

For further information please contact:

QinetiQ Air Affairs
11 Wugan Street
Yerriyong NSW 2540
Australia
Tel: +61 (0) 2 4423 6755
www.QinetiQ.com.au

QINETIQ
AirAffairs

Learjet 60 (Medivac)

Special Mission Fleet

We provide and operate a state-of-the-art fleet of Aeromedical recovery aircraft servicing Australia and the South Pacific, available around the clock with as little as two hours notice, every day of the year.

Our specially configured Learjet 60 Aeromedical retrieval aircraft are available 24 hours a day, 7 days a week and are activated via our state-of-the-art Special Mission operations centre, located at our Nowra Aviation Technology Park Facility, in the beautiful Shoalhaven region of NSW.

Rapid response Aircraft can be deployed with as little as 120 minutes notice to conduct Aeromedical retrieval operations throughout Australia and the South Pacific Region, servicing priority locations including Norfolk Island.

The combination of QinetiQ Air Affairs' highly trained flight crews and our proven ability to deliver high availability emergency response aviation services, enables us to provide Jet Aircraft medical retrievals to specialist medical teams, enabling the transfer of critically ill and injured patients across the nation.

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Learjet 60 Specifications

Standard Specifications

Exterior	Exterior Height: 14 ft 8 in (4.47 m) Wing Span: 43 ft 9 in (13.33 m) Length: 58 ft 8 in (17.88 m) External Baggage: 24 cu ft (0.68 cu m)
Interior	Cabin Height: 5 ft 9 in (1.75 m) Cabin Width: 5 ft 11 in (1.80 m) Cabin Length: 17 ft 8 in (5.38 m) Cabin Volume: 453 cu ft (12.8 cu m) Door Height: 5 ft 3 in (1.60 m) Door Width: 2 ft (0.61 m) Internal Baggage: 24 cu ft (0.68 cu m)
Occupancy	Crew: 2 Passengers: 8
Operating Weights	Max T/O Weight: 23500 lbs (10659 kg) Max Landing Weight: 19500 lbs (8845 kg) Operating Weight: 14772 lbs (6700 kg) Empty Weight: 14640 lbs (6640 kg) Fuel Capacity: 7910 lbs (3587 kg) Payload w/Full Fuel: 1068 lbs (484 kg) Max Payload: 2228 lbs (1010 kg)
Range	Normal Range: 2186 nm (4048 km) Max Range: 2418 nm (4478 km) Service Ceiling: 51000 ft (15544 m)
Distances	Balanced Field Length: 5450 ft (1661 m) Landing Distance: 5208 ft (1587 m)
Performance	Rate of Climb: 4500 fpm (1371 m/min) Climb Rate One Engine Inop: 714 fpm (217 m/min) Max Speed: 465 kts (861 km/h) Normal Cruise: 436 kts (807 km/h) Economy Cruise: 423 kts (783 km/h)
Power Plant	Engines: 2 Engine Mfg: Pratt & Whitney Canada Engine Model: PW305A

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QinetiQ Air Affairs
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Yerriyong NSW 2540
Australia
Tel: +61 (0) 2 4423 6755
www.QinetiQ.com.au

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Learjet Special Mission Fleet

Our fleet of Learjet 30 & 60 Series aircraft provide Jet Aircraft Support for Australian Defence Force training. Having a common aircraft type is a key factor in maximising aircraft online availability, common spare parts, common pilot type ratings, training and approvals.

All aircraft are equipped with ADS-B, TCAS/RVSM and several aircraft are fitted with wing hard points and specialised mission systems.

QinetiQ Air Affairs' Learjets are also capable of fire scanning and surveillance if greater speed or responsiveness is required in addition to the specially modified Beechcraft King Air B200.

Our Special Mission Learjet 35A fleet have a ceiling of 45,000 feet and cruise at up to 800 km/hr, well above most weather. The aircraft are fitted with the latest PBN capable navigation equipment as well as Digital Weather Radar, Traffic Advisory and Terrain Awareness Systems.

The aircraft are capable of 4 hour flights, covering up to 3000 km. The Learjet 35A can operate from most regional country airports.

QinetiQ Air Affairs' fleet of Learjets have the following capabilities:

- Corporate Charter (RVSM & RNP10 Compliant);
- Medivac Configured;
- Target Towing;
- Test Flying;
- Wing Hard Points;
- Cabin Console & PC Interface;
- Special Mission Wiring (data and power);
- UHF Radio;
- Video Recording System;
- 4 Station Intercom; and
- Camera Door.

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Learjet 35A Specifications

Standard Specifications	
Exterior	Exterior Height: 12 ft 3 in (3.7 m) Wing Span: 39 ft 6 in (12.0 m) Length: 48 ft 7 in (14.8 m)
Interior	Cabin Height: 4 ft 4 in (1.3 m) Cabin Width: 4 ft 11 in (1.5 m) Cabin Length: 12 ft 11 in (3.9 m) Cabin Volume: 268 cu ft (7.6 cu m) Door Height: 4 ft 2 in (1.2 m) Door Width: 3 ft (0.9 m) Internal Baggage: 40 cu ft (1.1 cu m)
Occupancy	Crew: 2 Passengers: 6
Operating Weights	Max T/O Weight: 18300 lbs (8300 kg) Max Landing Weight: 15300 lbs (6939 kg) Operating Weight: 10310 lbs (4676 kg) Empty Weight: 10119 lbs (4589 kg) Fuel Capacity: 6198 lbs (2811 kg) Payload w/Full Fuel: 1992 lbs (903 kg) Max Payload: 3190 lbs (1446 kg)
Range	Normal Range: 1930 nm (3574 km) Max Range: 2125 nm (3935 km) Service Ceiling: 45000 ft (13716 m)
Distances	Balanced Field Length: 6300 ft (1920 m) Landing Distance: 4333 ft (1320 m)
Performance	Rate of Climb: 4,340 fpm (1322 m/min) Climb Rate One Engine Inop: 1280 fpm (390 m/min) Max Speed: 470 kts (870 km/h) Normal Cruise: 436 kts (807 km/h) Economy Cruise: 424 kts (785 km/h)
Power Plant	Engines: 2 Engine Mfg: Honeywell Engines Engine Model: TFE 731-2

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www.QinetiQ.com.au

For further information please contact:

QinetiQ Air Affairs
11 Wugan Street
Yerriyong NSW 2540
Australia
Tel: +61 (0) 2 4423 6755
www.QinetiQ.com.au

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Low Level Height Keeping Target

Aerial Targets

QinetiQ Air Affairs is a recognised manufacturer and supplier of specialised airborne targets and operational services for the training of Australian & overseas Defence Forces.

The LLAT-2 Low Level Height Keeping Target is an aerial towed target providing the following advanced features:

- Sea skimming/Low level height keeping;
- Flight Computer and Radar Altimeter controlled;
- Radar reflective enhancement;
- Visual enhancement;
- Miss distance scoring; and
- Flight tested down to 8 metres.

The LLAT-2 is a self-contained target towed by a host aircraft. Its function is the terminal phase simulation of sea-skimming or anti-ship cruise missile profiles.

Sea skimming is achieved by a central Moving Wing and servo mechanism, a Flight Computer, Radar Altimeter and RF Modem. Monitoring and Command & Control is carried out onboard the tow aircraft using a Radio Modem and Laptop Computer. Automatic movement of the central wing causes the target to climb or descend in order to maintain its commanded height.

The targets are of a modular-style construction using metal alloy and advanced composites. If not destroyed, the target can be recovered by the towing aircraft for multiple re-use. The major benefits of the LLAT-2 include:

- Cost-effective training, offering realistic simulation of sea skimming missiles at a fraction of the cost of self-propelled and/or real missiles;
- Speeds of up to 400 knots are possible depending on the towing aircraft;
- Sea skimming altitudes can be varied between 8 metres (25 feet) and 150 meters (500 feet) AMSL and maintained within 1 metre (3 feet);
- A choice of onboard equipment allows the operator to emulate the particular sea skimming missile being trained against;
- A choice of enhancements including RCS, Visual and IR;
- A Miss Distance Indicator (MDI) can be fitted to enable assessment of firing accuracy; and
- Safe operation is ensured by using long tow cables, providing safe separation between the towing aircraft and target. Pull up is initiated by the towing aircraft that ensures the target will overfly the platform under training.

Height of the target can be adjusted and monitored in real time during the mission as well as the activation of onboard payloads. A nose mounted high intensity lamp and radar reflector have been installed for safety and visual enhancement. All onboard systems and payloads are powered by high performance, rechargeable Lithium Ion batteries without the need for high drag and costly onboard generation systems.

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Low Level Height Keeping Target Specifications

Physical	
Propulsion	Rechargeable Lithium-Ion batteries
Flight Safety	Long tow cables provide safe separation between the towing aircraft and target. Nose-mounted high intensity lamp and radar reflector for safety and visual enhancement.

Performance	
Speed	In excess of 170 m/s (330 knots) (611 km/h)
Altitude	Maximum: 150 m (500 ft) Minimum: 8 m (25 ft)

Other features	
Functional	LED Lamp, Access Panels, Tow Lug, Variable Incidence Wing, Fins
Optional enhancements	Miss Distance Indicator (MDI), RCS, Visual and IR
Command & Control	Flight Computer, Radar Altimeter

Key Features

- Maximum Speed up to 400 knots
- Rechargeable Lithium-Ion batteries
- Safety features include long tow cables, nose-mounted high intensity lamp and radar reflector
- Simulates the terminal phase of sea-skimming or anti-ship cruise missiles

Self-contained target towed by a host aircraft

Note: Due to continuous process improvements, specifications are subject to change without notice.

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MTR-101 Reeling Machine

Aerial Targets

The MTR-101 Reeling Machine is specifically designed for Aerial Target Missions, providing aerial deployment and recovery of tow targets and is the premium system available today. MTR-101 systems are currently operational with users in 10 countries.

The MTR-101 system includes an Operator's Control Panel, interconnecting electrical loom and a lightweight flight proven, compact, two-way Reeling Machine which provides launch and recovery of a wide range of towed target configurations. Horsepower is provided from free-stream dynamic pressure using a ram air turbine and requires minimal electrical power from the host aircraft. The reeling machine is a removable external aircraft store providing rapid changeover capability for multi-use aircraft and has extremely low drag.

The tow reel is designed to accommodate a variety of targets, for both air-to-air and surface-to-air weapons training systems. Either constant diameter or stepped diameter cable may be utilised to display targets on towlines up to 30,000 feet (9,144 metres) in length.

The MTR-101's unique rotary arm target launcher mechanism provides a target carry position (rotated up and to the side) which maximises clearance distance between the target/reel combination and runway during aircraft take off, rotation and landing flair attitudes. During target launch, the launcher arm and target are rotated 90 degrees down from the side carry position to directly beneath the reeling machine. The launcher arm can also be configured to swing inboard or outboard.

The launcher arm remains in the down position during the target-out-tow portion of the training exercise. The extended launcher arm provides an extremely stable airborne launch and recovery platform for targets in a region, free from aircraft generated air turbulence. Additionally, the extended launcher arm also ensures critical separation distance between tow cable and tow aircraft fuselage/tailpipe areas during High-G manoeuvres required by some air-to-air gunnery training scenarios. Once the weapon tracking or firing exercise has been completed, the target is reeled into the launcher arm and both arm and target are rotated upward to the target carry position.

Extensive flight testing of the MTR-101 has been performed with a variety of aircraft and targets, resulting in flight certification by the Civil Aviation Safety Authority in Australia, the Civil Aviation Authority in England, the LBA in Germany,The Federal Aviation Administration in the United States and the FMV in Sweden.

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MTR-101 Reeling Machine Specifications

Technical	
Reeling Altitude	2,000 to 25,000 ft AMSL
Reeling Airspeed	230 to 300 KIAS
Tension – Reel In	1,200 lbs (max)
Wire Diameter	0.161 in (max)
Captive and Tow Altitude	No Limit
Tow Airspeed (Design "q")	1.3 Mach No. at 10,000 MSL
Tow Line Length	2,000 to 30,000 ft (typical)
G Loads	Mil-A-8591F
Turbine Horsepower	30 Horsepower
Max. Reeling Speed	1200 to 1700 ft/min, Semi-automatic

Key Features

- High Life Cycle and Reliability
- Low Life Cycle Cost
- MTR-101 systems are currently operational with users in 10 countries
- Ground Support Equipment

Other features

- Ducted Ram Air Turbine Power;
- Low Drag, Small Frontal Area;
- Flight Line (Removable Cable Spool for Quick Turn Around);
- A launcher that Provides for Safe Target Recovery Below the Aircraft Pressure Field;
- Launcher Provides Clearance from the Aircraft During Launch and Recovery;
- Options for Target Auxiliary Systems (TAS) and Scoring Receivers;
- Rotary Launcher, Carry Side-by-Side, Launch Vertically Down;
- Video Camera;
- Self-Contained Brake System;
- Strongback with NATO Sway Brace Pads; and
- 14- or 30-inch Lug Spacing on Strongback Available.

The Operator Control Panel, provides the user with readouts including towline reeling speed, tension, status indicator lights and function control switches.

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11 Wugan Street
Yerriyong NSW 2540
Australia
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www.QinetiQ.com.au

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Phoenix Jet

Aerial Targets

The Phoenix Jet has been developed specifically for the Defence Industry as a high performance training solution for a variety of gun and air defence missile systems. The Phoenix Jet provides realistic threat simulation, and enhancements such as MDI, Smoke, IR and Luneburg lenses can be added to meet the requirements of a wide range of weapon systems.

Autopilot System:

The AP04 is a fully-integrated autopilot system with 100 km radio link and payload control capabilities. It is suitable for UAVs ranging from micro-UAVs of less than one metre wingspan to larger UAVs of up to four metre wingspan and 35 kg payloads. It is capable of fully automatic takeoff, autonomous flight and auto landing. Manual override allows the operator to have full manual UAV control by means of a joystick. Navigation is by DGPS, GPS and magnetometer which ensures full failsafe capability. The AP04 is an exceptionally robust and dependable system, housed in a heavy-duty aluminum waterproof case with MIL-SPEC connector and only weighs 300 grams.

Jet Engine Features:

- Single stage turbine engine with automatic start, controlled by a full authority digital engine control (FADEC) unit;
- Engine EGT, RPM and fuel delivery data is used by the FADEC to control and manage all aspects of engine operation;
- Radial compressor;
- Axial turbine;
- Reverse flow annular combustion chamber;
- Hybrid ceramic bearings;
- Low pressure fuel system with six internal delivery points; and
- Engine delivers 40 kg of thrust.

Smoke System:

The smoke system provides a very effective and inexpensive visual recognition system with no EOs required. The oil tank capacity is 4 litres which provides 4 minutes of continuous smoke or 10 minutes of intermittent smoke. The smoke system uses Bio Diesel and can be turned on and off any time and as many times as you require. It is controlled by an electric pump that sprays the Bio Diesel into the jet exhaust to provide a thick smoke trail.

Traditional smoke generators continue to be used by most other target drones, however they are expensive, require special handling and shipping, secure storage, are shelf-life limited and cannot be turned off once initiated.

QINETIQ
AirAffairs

Phoenix Jet Specifications

Physical	
Wingspan	2.2 m (7 ft 2 in)
Length	2.4 m (7 ft 10 in) (typical, dependant on configuration)
Height	0.74 m (2 ft 5 in)
Power	40 kg (88 lbs) of thrust, Jet engine

Performance	
Speed	In excess of 170 m/s (330 knots) (611 km/h)
Launch Speed	35 m/s (68 knots) (126 km/h) (typical, dependent on all-up-weight)
Operating Range	100 km (54 nm)
Endurance	One hour, dependent on mission parameters
Maximum Altitude	6,000 m (19685 ft)
Minimum Altitude	15 m (49 ft)
Recovery	Parachute
Maximum Target Weight	66 kg (145 lbs)
Maximum Payload Weight	3.5 kg (7 lbs)

Other features	
Augmentation	Luneburg Lens, IFF, Smoke, IR, Acoustic & Doppler MDI
Manoeuvrability	3g Instantaneous, 2g Sustained
Airframe	Composite Construction
Launch System	Catapult Launcher

Key Features

Ready for operation in 60 minutes

High performance training solution

Autopilot system includes accelerometers, gyroscopes, magnetometers, GPS and dual redundant processors

Designed for remote site operations with minimal support equipment

Proudly Australian designed and manufactured

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Collaborating with QinetiQ

At QinetiQ we bring organisations and people together to provide innovative solutions to real world problems, creating customer advantage.

Working with our partners and customers, we collaborate widely, working in partnership, listening hard and thinking through what customers need. Building trusted partnerships, we are helping customers anticipate and shape future requirements, adding value and future advantage.

www.QinetiQ.com.au

For further information please contact:

QinetiQ Air Affairs
11 Wugan Street
Yerriyong NSW 2540
Australia
Tel: +61 (0) 2 4423 6755
www.QinetiQ.com.au

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Target Systems

Rattler

Supersonic Target (ST)

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Target Systems

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).

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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

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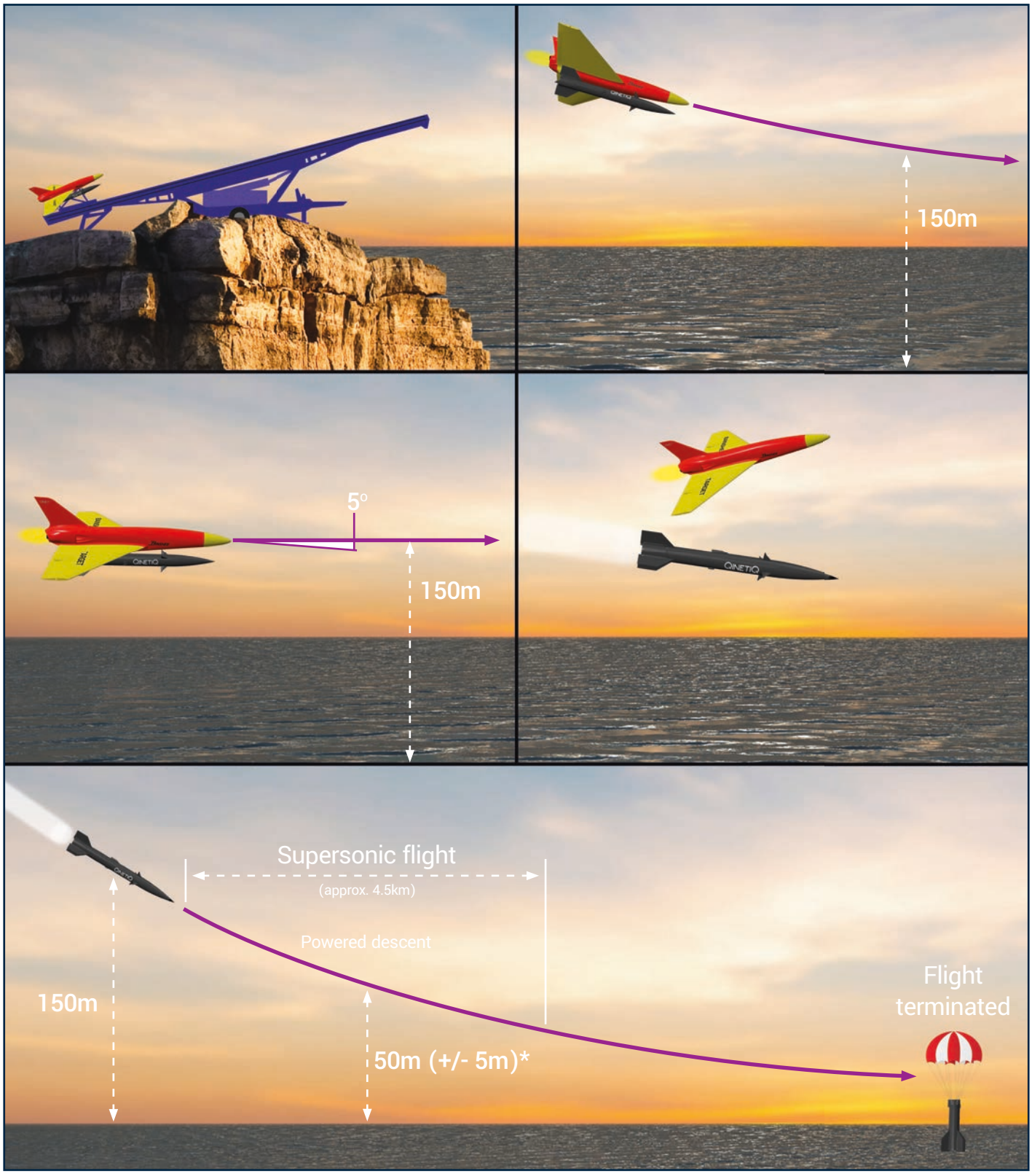
Illustrative Mission Profile



*To be tested in 2023

For further information please contact:

The Boulevard, Orbital Park,
Ashford, Kent TN24 0GA
United Kingdom

+44 (0)1233 505600
qtsmarketing@QinetiQ.com
www.targetsystems.QinetiQ.com

#3-1735 Brier Park Road NW,
Medicine Hat, Alberta T1C 1V5
Canada

+1 403 528 8782
contact@QinetiQ.ca
www.targetsystems.QinetiQ.com