

CATS Program Evolution, Execution and Refreshment Activities

A Presentation to NDIA 50th
Annual Targets, UAVs & Range
Operations Symposium

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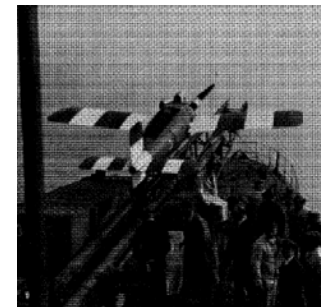


1 CATS History

- **CATS is the basis of UK aerial targets capability.**
- **A fully contractor-owned, contractor-operated (COCO) service.**
- **To provide subsonic UAV targets to UK MOD anywhere in the world – the one-stop-shop.**
- **Subsumes all previous government and contractor operations.**
- **Contract signed on 14th December 2006, duration 20 years.**
- **Private Finance Initiative (PFI) style, formally a Public Private Partnership (PPP).**
- **QinetiQ is the prime contractor, currently supported by two principal subcontractors (Selex Galileo and Meggitt Defence Systems).**

QinetiQ and predecessors delivering targets for in excess 50 years including:

GAF Jindivik
Short's Stilleto {AQM 73}
FRL Falconet
Meggitt Banshee
Rushton towed targets
Meteor full scale target



AT trials in Cardigan Bay 1927

1 Who Are We

Defence Equipment and Support [DE&S]

is the merged procurement and support organisation within the UK Ministry of Defence formed on 2 April 2007 with a mission to:

***“To equip and support our armed forces
for operations now and in the future”***

TEST Project Team is a part of the Weapons cluster and manages CATS and the Long Term Partnering agreement

QinetiQ is a British multinational defence technology company headquartered in Farnborough, United Kingdom. It was formed in 2001 as a result of a privatisation of a part of the government.

QinetiQ is listed on the London Stock Exchange and is a constituent of the FTSE 250 Index.

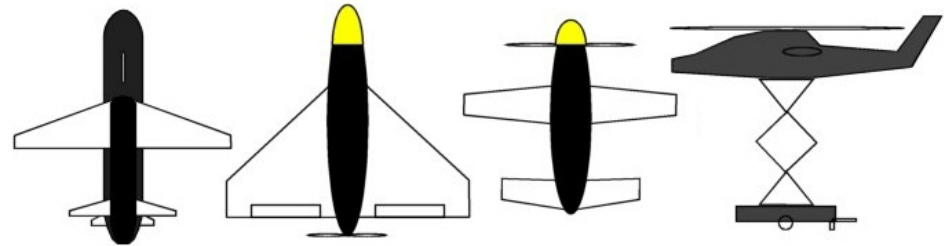
CATS is one of a number of contracts operated within the Managed Services sector of the company

DE&S and QinetiQ operate CATS under a partnering arrangement



2 What Does CATS Deliver?

- **Aerial and Land targets worldwide**
 - At Established Ranges
 - On Board Ship
- **Mirach (based on Mirach 100/5)**
- **Voodoo**
- **Banshee**
- **Helicopter Pop Up**
- **Delivering in excess of 250 sorties per year**
- **Multiple Payloads including**
 - MDI
 - IR enhancement by Flare and Hot nose
 - Radar Altimeter – to allow Sea Skimming
 - Radar Enhancements (Passive)
- **Dual Targets on all types**



Our Foundations

Target Delivered
on Time

Right Target
Delivered
Snag Free

Documentation
on Time

The Customers
Extra

Right Target, On Time, Every Time

Mirach 100/5

- **Currently operating with 43 different payload configurations**
- **Used for between 30 and 40 sorties per year of which 7-10 are “kill” flights**
- **Regularly switch between Aberporth and Hebrides in as short a time as 3 days**
- **In operation in QinetiQ in 2 variants for approximately 7 years**
 - Radar tracking transponders
 - Diverless recovery system
 - Flight Termination receiver
 - Luneburg Lens 2 sizes – passive RCS enhancement
 - Wing tip Infra Red enhancement
 - Wing tip chaff and flare dispenser
 - Scalar Missed Distance Indicator
 - Radar Altimeter
 - Smoke
 - Identification Friend or Foe
 - Semi enhanced Radar tow [with or without MDI]
 - Infra Red enhanced Tow [with or without MDI]
 - Auxiliary tank x 2
- Alt – min 5m; max 39000ft
- Speed – min 178kts; max 510kts
- Range – 70Nm
- Endurance typically 45 minutes
- Can perform dual sorties
- Max manoeuvre – 7G
- Launched by JATO and recovered into the sea by parachute



Voodoo

- Evolved from just ground based air defence to Air to Air role for niche services
- Currently operating with 8 different payload configurations
- Launched by rail and recovered onto land by parachute
- In operation in QinetiQ for 2 years
 - Radar tracking transponders
 - Luneburg Lens – passive RCS enhancement
 - Wing tip chaff and flare dispenser
 - Scalar Missed Distance Indicator
 - Radar Altimeter
 - Smoke
 - IFF

- Alt – min 8m; max 30,000ft
- Speed – min 117kts; max 300kts
- Range – 54Nm
- Endurance typically 120 minutes
- Can perform dual sorties including with Banshee
- Max Manoeuvre – 5G [pull up]



Banshee

- **Banshee used on 762 (83 kills) since service commences**
- **Currently operating it with 30 different payload configuration**
- **Available at QinetiQ Hebrides, Manorbier, Falklands and BATUS [Canada]**
- **In operation in QinetiQ for 4 years**
 - Radar tracking transponders
 - Luneburg Lens – passive RCS enhancement
 - Wing tip chaff and flare dispenser
 - Scalar Missed Distance Indicator
 - Radar Altimeter
 - Smoke
 - Identification Friend or Foe
 - Laser pod [HVM Training]
- Alt – min 5m; max 16,400ft
- Speed – min 90kts; max 195kts
- Range – 54Nm
- Endurance typically 90 minutes
- Can perform dual sorties including with Voodoo
- Max Manoeuvre – 5G
- Launched by rail and recovered onto land by parachute



Helicopter Popup

- **Currently operating with 8 different payload configuration**
- **Available for operation in QinetiQ for 4 years**

- Passive RCS enhancement
- Chaff and flare dispenser
- Scalar Missed Distance Indicator
- Laser pod [HVM Training]
- Identification Friend or Foe

- Available at BATUS [Canada]
- Alt –max 40ft
- Range – 5.4Nm
- Endurance typically 8 hours
- Can perform dual sorties up to 3 lifters simultaneously



3 Where Do We Deliver

Anywhere worldwide (fully mobile service)

Everything fits into 20' ISO containers (less PopUp)

Firing venues

- USA (McGregor, Camp Lejeune, China Lake, Point Mugu)
- Falklands**
- Norway
- BATUS Canada**
- Utska, Poland
- High seas (North Sea/Iceland/Worldwide)

Tracking venues (training areas)

- Salisbury Plain
- Otterburn
- Sennybridge
- Catterick and Feldom
- Stamford

MoD Hebrides

MoD Aberporth

ADR Manorbier



4 How will we measure success

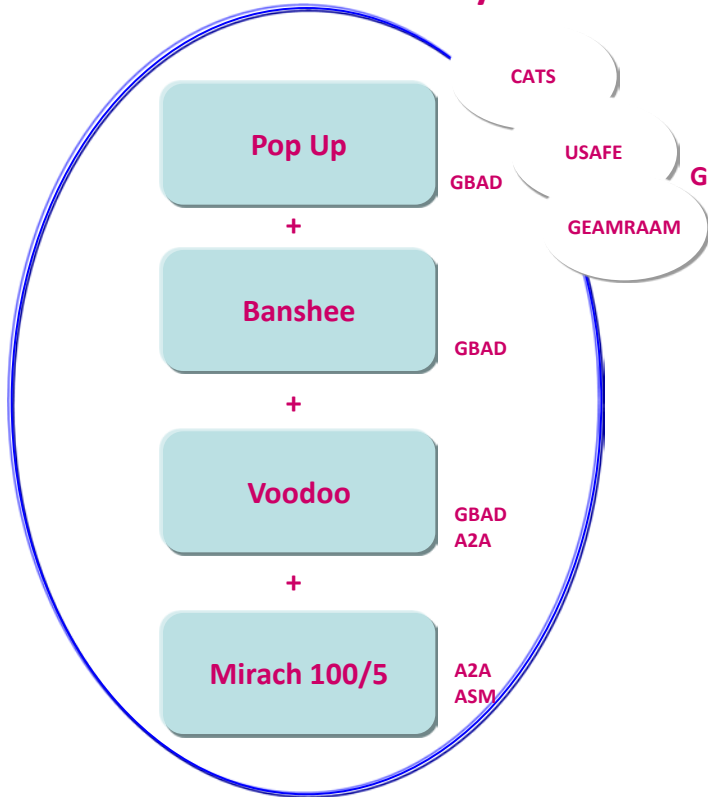
- **CATS is a KPI based contract:**
 - **Service Availability >97%**
 - **Target Availability**
 - **Target Reliability measured on sortie and payload performance**
 - **Safety and Approvals – on going and cumulative**
- **All impact on invoicing and we have high metrics for the entirety of the contract**
- **Partnership Charter**
- **Monthly & Annual Contract Report**
- **Regular Operational meetings**
- **Scheduled Executive Reviews**
- **Innovation Reviews to enhance the service**



A QinetiQ Banshee in special configuration to support security training for the Olympic Games

5 Transformation

CATS – 2006 to today

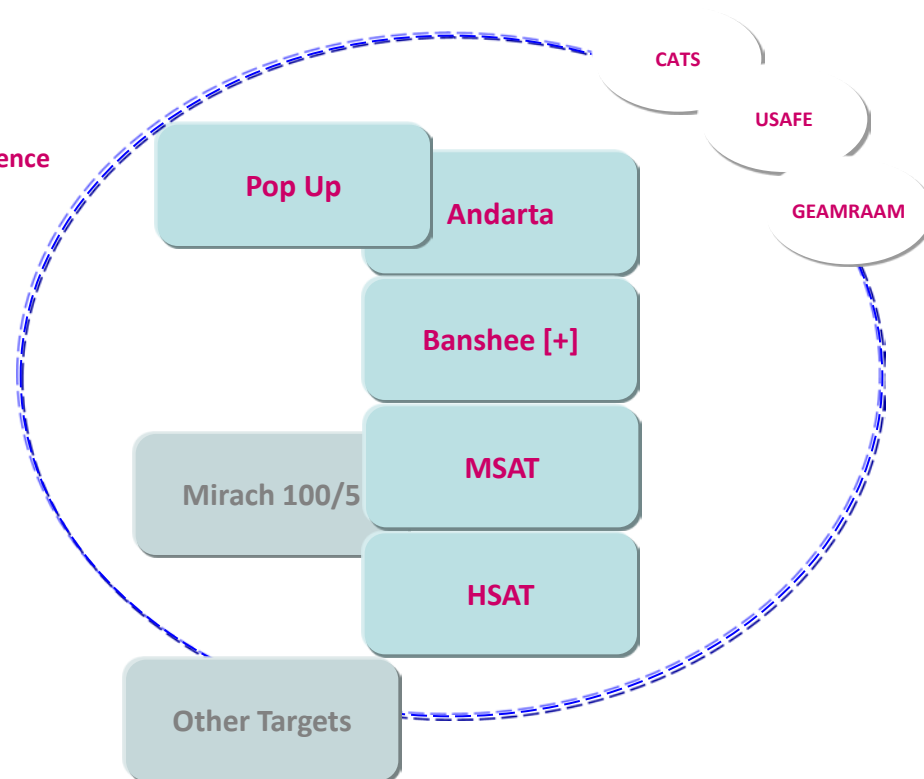


CATS – 2013 to 2020

Ground Based Air Defence



Air to Air
Anti-Ship Missile



Upgrading the portfolio for tomorrow's missiles

“Courage is what it takes to stand up and speak; courage is also what it takes to sit down and listen.”
— Winston Churchill



