MQM-171 BROADSWORD IN SUPPORT OF TEST MISSIONS




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MQM-171 BroadSword Program Overview

- **BroadSword is the result of the Army's need for a threat representative tactical class UAV target.**
- **The emerging threat on the battlefield requires the Army to test and evaluate means of mitigating enemy tactical UAVs.**
- **A 1998 Army Study resulted in a "Statistical" tactical UAV which became BroadSword's size and performance requirements.**
- **Key Milestones:**
  - **Design/Development Start** — **March 2004**
  - **CDR** — **October 2004**
  - **First Flight** — **March 2006**
  - **Quals Complete** — **August 2007**
  - **First Customer Mission** — **April 2008**
  - **Production/Ops Contract** — **August 2009**
  - **First Production MQM-171** — **March 2010**

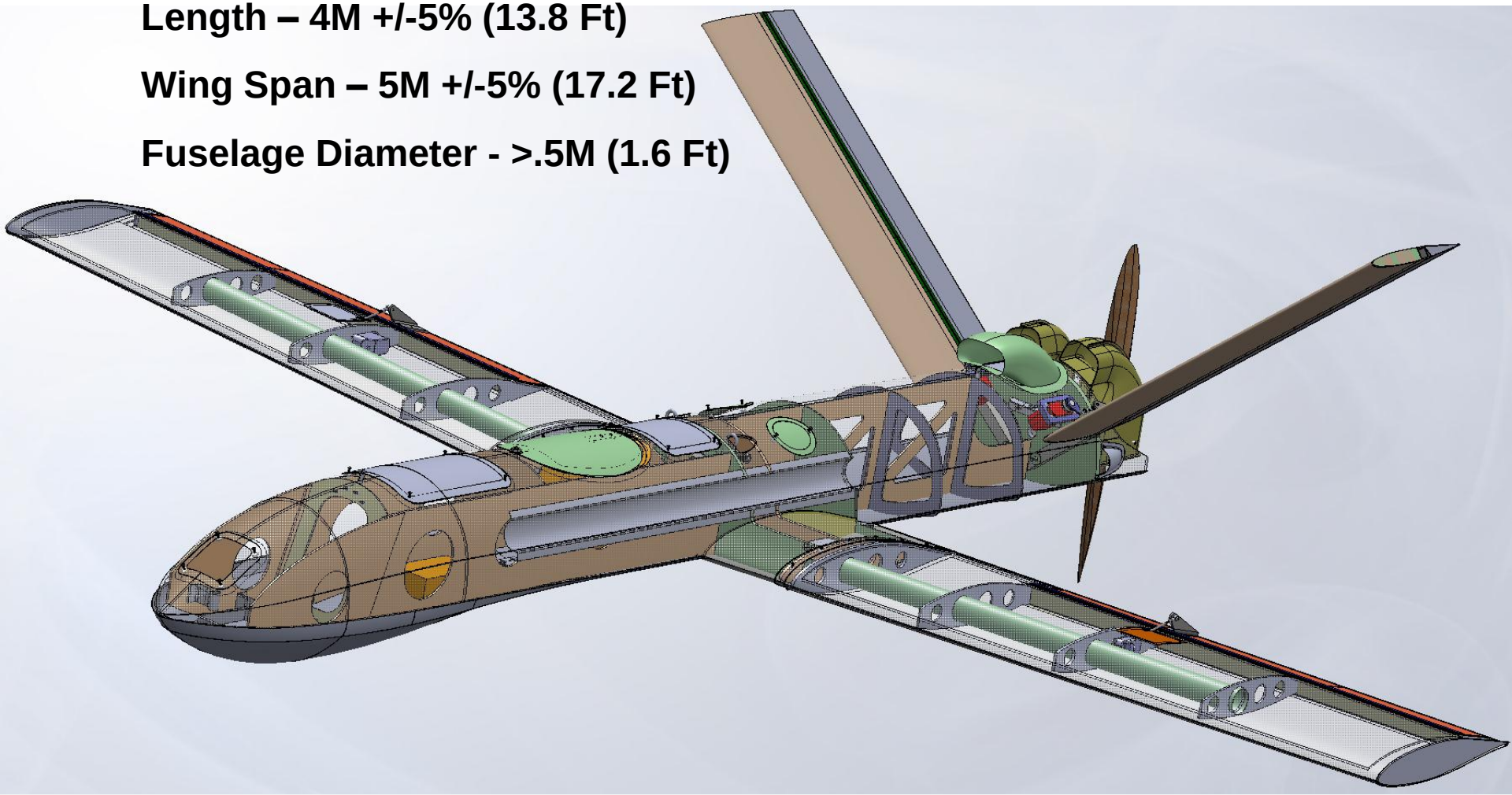
UAS-T Physical Requirements

Propulsion – Pusher Prop

Length – 4M +/-5% (13.8 Ft)

Wing Span – 5M +/-5% (17.2 Ft)

Fuselage Diameter - >.5M (1.6 Ft)



UAS-T Performance Requirements

Parameter	Requirement	Demonstrated
Max Cruise	115 KTAS	115 KTAS
Min Cruise	60 KTAS	55 KTAS
Min Ceiling	12,000 ft MSL	18,000 ft MSL
Min Control Range	25 Km	+25 Km & Satcom
Loiter Endurance	1 hr	2.5 hr

Avionics/Command Link

Qualified Command and Control Systems

- CloudCap Piccolo Autopilot and Ground Station
- CapLite with TTCS-U Command Link
  - CapLite and datalink implementation by Micro Systems

Autopilot	Command Link	Demonstrated	Range
Piccolo Plus	CloudCap	400 Mhz	25-30 Km
CapLite	TTCS-U	400 Mhz	25-30 Km
Piccolo II	CloudCap	400 Mhz and Iridium Satcom	Fuel Limited

Mission Ready GSE

BroadSword Ground Support Equipment (GSE)

- Launcher with Shipping Container
- Portable Ground Control Stations and Mobile TTCS-U Control
- Conex Shipping, Handling, and Operations Containers
- Lift/Recovery Road Dollies
- Aircraft Handling Equipment
- Fueling and Charging Systems
- System Spares

SLAMRAAM

Program: Surface Launched Advanced Medium Range Air-to-Air Missile Air Defense System (SLAMRAAM) - mobile, day/night adverse weather, non-line of sight weapon system for countering cruise missiles, fixed wing and UAVs.

Program Lead: PEO Missiles and Space, Cruise Missile Defense Systems

BroadSword Flight Ops: BroadSword has flown four (4) missions for the SLAMRAAM program. Each mission consisted of 3-4 flights. These flights have included tracking and livefire.

IMG_1093.mov Launch video

Counter Rockets, Mortars, and Artillery (C-RAM)

Program: Provide forces with real-time air situational awareness and protection from Rocket Artillery and Mortar (RAM). C-RAM consists of multiple COTS systems integrated to provide area defense.

Program Lead: PEO C3T, C-RAM Program Directorate

BroadSword Flights: BroadSword flew the first mission for C-RAM this year. Three (3) flights were flown at various altitudes, and speeds. The BroadSword was used to represent both friend and foe flight profiles.

IMG_1095.mov Flyby video

NAVY Littoral Ship Program

Program: Littoral Combat Ships are small surface vessels intended for operations close to shore (littorals). They will be an agile, stealthy surface combatant capable of defeating anti-access and unconventional threats.

Program Lead: U.S. Navy

BroadSword Flights: BroadSword flew a one-way mission via satellite control to engage a Littoral Ship 70+ miles off shore. The aircraft was launched from the shore and flown via satcom link to perform multiple engagements/sorties on the ship until destroyed by intentional livefire.

IMG_1095.mov Flyby video

BlackDart

Program: Black Dart is a joint agency demonstration focusing on rapid development and implementation of UAV technology from readily-available COTS products to develop anti-UAV systems. BlackDart demonstrates the ability to detect, track and shoot down small drones.

Program Lead: Joint Integrated Air and Missile Defense Org (JIAMDO)

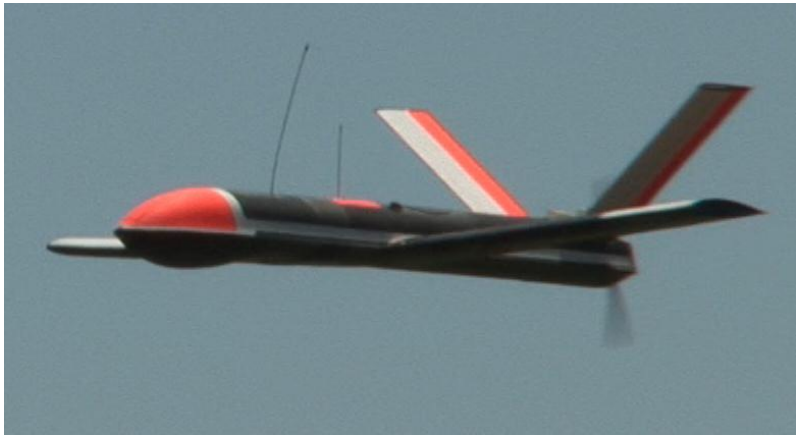
BroadSword Flights: New customer for 2011. BroadSword will serve as a surrogate UAS for tracking and weapon system engagements. BroadSword is being added after many years of successful Outlaw mission support.

JLENS

Program: Joint Land Attack Cruise Missile Defense Elevated Netted Sensors System (JLENS) is a tethered early warning and surveillance medium altitude aerostat. JLENS provides over-the-horizon detection and tracking of aircraft, helicopters, UAVs and cruise missiles.

Program Lead: Aerostat Joint Project Office of the U.S. Army Space and Strategic Defense Command.

BroadSword Flights: New customer for 2011. BroadSword will serve as a surrogate UAS for tracking and sensor evaluations.



Final Remarks

BroadSword is the Army Target Management Office's newest target system for test and evaluation of systems requiring threat representative tactical class UAS tracking and engagements.

BroadSword has successfully flown on numerous Army and Navy test ranges.

The MQM-171 BroadSword is operational and available for research and development, test and evaluation, and training applications.