



U.S. Navy Aerial Target Systems

Presented to 47th Annual NDIA Symposium

23 October 2009

Savannah, GA

Captain Dan McNamara

Program Manager

PMA-208, Navy Aerial Target & Decoy Systems



Outline



- Product Line
- Operating Sites
- Supersonic Targets
- Subsonic Targets
- Full Scale Targets
- Target Control System
- Foreign Military Sales
- Challenges





PMA-208 Target Product Lines



Supersonic



GQM-163A



AQM-37C



ZGQM-173A Multi-Stage Supersonic Target (MSST) (development)

Subsonic



BQM-34S



BQM-74E



Sub-Sonic Aerial Target (SSAT) (development)

Full Scale



QF-4



QF-16

Mobile Land Target (MLT) (development)



Other/Support



Tactical Air Launched Decoys



Common Equipment / Augmentation



Threat Simulation



Banners



System for Naval Target Control (SNTC)



Operating Sites

- ★ GQM-163 capability scheduled to stand up in 2010 on the following ranges:
 - Pacific Missile Range Facility Hawaii
 - Levant Island France (via FMS case)



Air Launch:

- BQM-34
- AQM-37
- BQM-74



Ground Launch:

- BQM-34
- BQM-74
- SSAT (threshold)
- GQM-163



Ship Launch:

- BQM-34
- BQM-74
- SSAT (threshold)



SSAT (objective)

ZGQM-173 (threshold)



GQM-163A Supersonic Sea Skimming Target



- Prime Contractor: Orbital Sciences Corporation
 - 180 targets total
 - Operations to date: 5 (Targets Expended: 8)
 - 6 October 2005 (1)
 - 12 and 13 June 2007 (2)
 - 12 December 2007 (2 as stream raid)
 - 3 December 2008 (1)
 - 18 December 2008 (2 as stream raid)
- *** Next operation anticipated December 2009 (2 as stream raid)
- Developing augmentation to current flight termination system
 - Developing Orbital Front End Subsystem (OFES)
 - Pacific Missile Range Facility (PMRF) Stand-up (FY10)



GQM-163A meets most Supersonic Sea Skimming test requirements



ZGQM-173A



Multi-Stage Supersonic Target (MSST)

- Prime Contractor: Alliant Techsystems Inc (ATK)
- MSST's purpose is to emulate advanced two-stage ASCMs in support of Air Defense Weapons/Combat Systems T&E events, to include:
 - AEGIS CG Mods, AEGIS DDG Mods, LHA-6, DDG-1000, CVN-21, SSDS, CIWS, RAM Blk 2, SM-6 ERAM, ESSM, SM-2, and JSF
- ACAT IVM Program that directly impacts ACAT I programs
 - The Preliminary Design Review is planned for 2nd quarter 2010
 - The Critical Design Review is planned for 2nd quarter 2011
 - Flight Test commencement is planned for 2nd quarter 2012
- Development effort will lead to follow-on contract for Low Rate Initial Production and Full Rate Production
- Initial Operational Capability planned for 2014



MSST will satisfy the remaining Supersonic Sea Skimming test requirements



BQM-34S



- Prime contractor – Northrop Grumman
- Sustainment
- Missions
 - Low fidelity A/C simulator
 - T&E workhorse – special configurations
 - Open Loop Seeker (OLS) integration
 - Launch: ground, ship, air
- Product Improvements
 - UIAU integration fielded Oct 09:
 - Replace existing autopilots with UIAU from BQM-74
 - Common avionics, radar altimeter, Support Equipment with current production BQM-74E
 - Address obsolescence issues
 - Reduced logistics
 - Allows for performance growth if required
 - 25 retrofits planned to support expected operations

Current Inventory ~ 204

FY06 Ops/Expenditures - 19/2

FY07 Ops/Expenditures - 14/3

FY08 Ops/Expenditures - 12/0

FY09 Ops/Expenditures - 4/1



Great T&E “Truck” but does not adequately represent many of today’s threat ASCMs



BQM-74E



- Prime Contractor: – Northrop Grumman
- Production
 - Training and T&E workhorse
 - Final procurement FY09
- Missions:
 - High fidelity Anti-Ship Cruise Missile (ASCM) Surrogate
 - Low-fidelity A/C simulator
 - Launch: ground, ship, air
- Product improvements
 - Programmable semi-autonomous navigation
 - Selectable Lost Carrier Sensitivity from waypoint to waypoint
 - Return to Recovery Area
 - Planned fielding FY10

Current Inventory ~ 276
FY06 Ops/Expenditures - 235/62
FY07 Ops/Expenditures - 158/52
FY08 Ops/Expenditures - 231/68
FY09 Ops/Expenditures - 207/46



Target still adequately represents many but not all threat ASCMs



Requirement for New Subsonic Target



- BQM-34 and BQM-74 no longer represent all modern subsonic threats
- Both targets will be out of production, potential target gap
- Previous attempts to replace were unsuccessful (1999-2007)
- JHU/APL Sensitivity Study completed Apr 2008
 - Identified key performance attributes required for combat systems testing
 - Determined threat equivalency boundaries for key performance attributes
 - Determined that existing Navy subsonic targets could not be modified to achieve needed performance attributes
- Study accepted by stakeholders (OSD(DOT&E), ASN(IWS), PEO(IWS), and OPNAV N43/N91 sponsors as Analysis of Alternatives (AoA)

SSAT Capabilities Development Document (CDD) to be approved Nov 2009



Subsonic Aerial Target (SSAT) Acquisition Approach



- Strategy is to have industry modify an existing subsonic target to achieve Navy SSAT requirements rather than develop from scratch
- Request For Information (RFI) for Development released Jun 2008 to gain insight into industry perspective
- Industry Day conducted Oct 2008
- Draft RFP released Jul 2009
- Pre-solicitation conference 8 Oct 2009
- Final RFP ready for release (after CDD approval) for full and open competition to support contract award in 4th quarter FY10
- Contract for engineering/manufacturing development, two priced production options and contractor logistics support options

Full and Open Competition



Full Scale QF-4/QF-16



- QF-4 - Air Force led program
 - Operating at Tyndall & White Sands Test Ranges
 - Air Force existing contract runs thru Lot 15 (FY09)
 - Navy procures 5 FY09, 3 FY10
 - Air Force plans to award new contract in FY10
 - Procurements from FY10 will deliver FY12
- AST QF-16 Air Force led program
 - Replacement for the QF-4
 - Navy providing requirement inputs and funding to Air Force
 - Navy participating in TEMP development and Source Selection
 - Contract Award anticipated 3rd quarter FY10
 - IOC 3rd quarter FY15



Source Selection process in-work



Navy Moving Land Target (MLT)



- Navy identified need for a threat representative training MLT to replace QLT-1C
- MLT program transferred from PMA-205 to PMA-208 2007
- Navy leveraged the Shootable Remote Threat Ground Target (SRTGT) OSD T&E demonstration initiative to refine requirements, prototypes filling gap until MLTs procured competitively
- MLT acquisition approach:
 - Planning for full and open competition to purchase commercial system
 - Completed a requirements study Jun 09
 - RFI released Aug 09 (solicitation #N00019-09-RFI-0235)
 - Requirement defined in Target Capability Document (TCD) signed Sep 09
 - Designated as Abbreviated Acquisition Program (AAP) in Sep 09
 - Draft RFP planned release late CY09
 - Contract award expected 3rd quarter FY10 for 60-120 targets

Planning to release a draft RFP late 2009



System for Naval Target Control (SNTC)



- SNTC
 - Prime Micro Systems, Inc
 - Controls BQM-74/34 aerial targets & seaborne targets
 - UHF 435–450 MHz
 - 200 nmi line of sight
 - 330 nmi via Relay
 - Supports Training and T&E
- Next Target Control System
 - Draft Initial Capabilities Document (ICD) complete
 - Analysis of Alternatives in progress



Requirements analysis effort in work to document long term target control needs











Foreign Military Sales






Description

- PMA-208 Hardware Case
 - USN is reimbursed for Targets & Equipment expended from USN inventory in support of international operations on US ranges
- Range Services Case
 - Separate FMS Case to fund target presentation at US Range
- Presentations on OCONUS Ranges
 - Target presentations performed on foreign range
 - France: GQM-163A

FMS Cases managed by PMA-208

 Australia	 Canada	 UK	 Germany
 France	 Netherlands	 Norway	 Portugal

Other international funding of target operations

 Japan	 Spain	 Taiwan
--	--	---

Background

- PMA-208 manages 8 active cases / 1 Lease Agreement
 - 8 countries / Case Values Total: \$ 33M
- OCONUS FMS deliveries:
 - FR-P-LGV; 1 GQM-163A to France in CY10
- Typical FMS Range Sites
 - NAWCWD Pt. Mugu/China Lake, CA
 - PMRF Barking Sands, HI
 - NAWCAD Wallops Island, VA

Country / Cases

Australia / AT-P-LAH
 Canada / CN-P-LFG
 / CN-P-LIH
 France / FR-P-LGV
 / FR-P-ZAI
 Germany / GY-P-LFJ
 Netherlands /NE-P-LGA
 Norway / NO-P-LAU
 Portugal / PT-P-LCO
 UK / UK-P-LIV \$ 4,936,394

Total Case Value

pending case closure
 pending case closure
 \$ 6,809,638
 \$12,105,299
 \$ 73,616
 \$ 1,763,630
 \$ 2,970,090
 \$ 3,605,000
 \$ 1,200,000
 AQM-37C (5)
\$33,463,667

Product (Quantity)

BQM-74E/34 (10-15)
 GQM-163A (1)
 MK7 lease (1)
 BQM-74E/34 (4-5)
 BQM-74E/34 (5-7)
 BQM-74E (5-7)
 BQM-74E (3-4)

8 active cases valued at over \$33M



Target System Challenges



Evolution of the threats

- Supersonic dive
- Anti-ship ballistic cruise missile
- Asymmetric threats
- Enhanced threat capability
- Constant formal coordination with Operational and Intelligence communities

Programmatic

- Meeting evolving requirements - more extensive and accurate representation of threat
- Reconfiguration, reuse, and versatility
- Cost control – acquisition & operations
- Obsolescence
- Inventory management

A critical enabler to the successful development & fielding of future Naval combatants and their associated defensive weapons systems . . .

“Just Targets”



Questions?

U.S. Navy Aerial Target Systems

Contact:

Captain Dan McNamara

Program Manager

PMA-208, Navy Aerial Target & Decoy Systems

daniel.mcnamara@navy.mil

301-757-6129