



U.S. Navy Aerial Target Systems

Presented to 45th Annual NDIA Symposium

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Program Manager
PMA-208, Aerial Target & Decoy Systems
31 October 2007



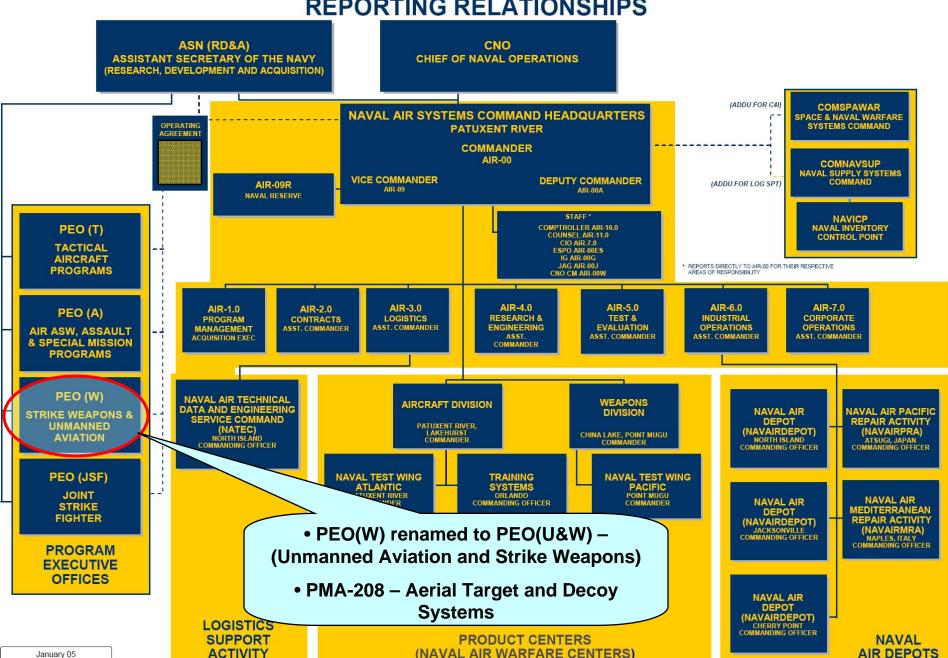


Outline



- Organization
- Product Line
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- Supersonic Targets
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- Full Scale Targets
- Target Control Systems
- Summary

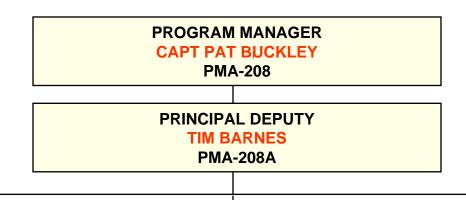






PMA-208 AERIAL TARGET & DECOY SYSTEMS PROGRAM OFFICE 2006





SUPERSONIC TARGET SYSTEMS PMA-2081

SUBSONIC TARGET SYSTEMS PMA-2082

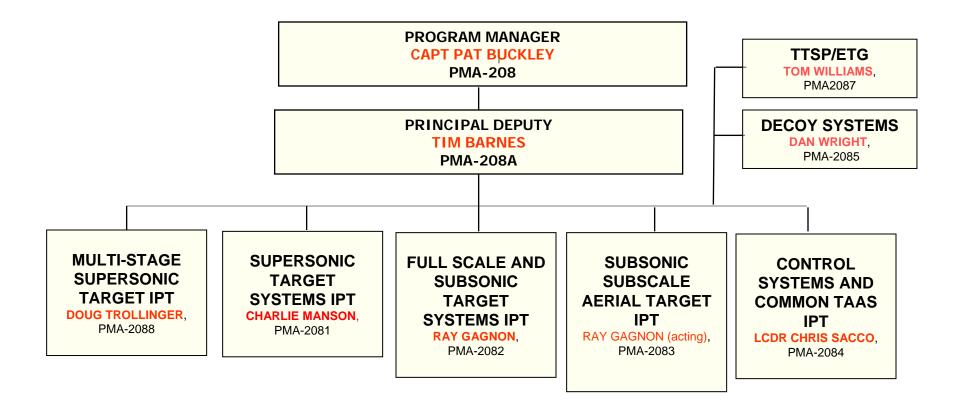
DECOY SYSTEMS PMA-2085





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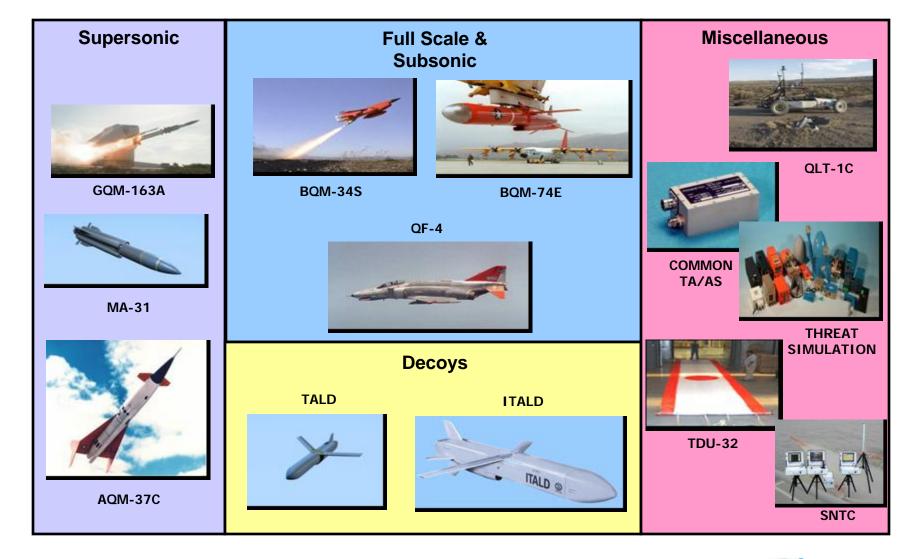






PMA-208 Product Line Fielded

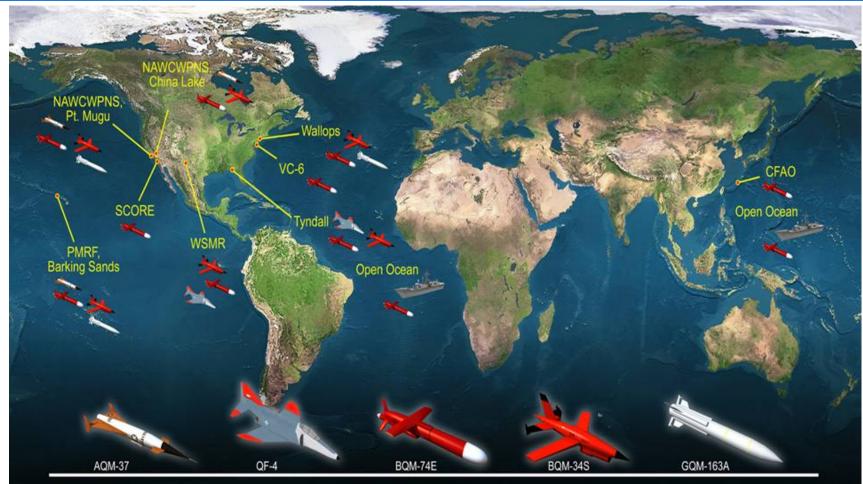






Operating Sites





- VC-6 decommissioning in summer of 2008
- NAVAIR to conduct East Coast ops







Supersonic Targets



GQM-163A Supersonic Sea Skimming Target







GQM-163 Program Status



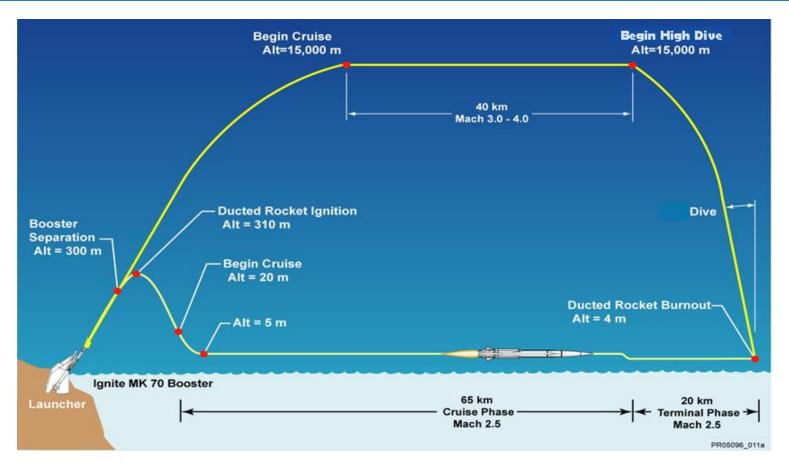
- Operations to date:
 - 6 October 2005; 12 June 2007; 13 June 2007
- FRP-2 contract awarded September 2007
- First Stream Raid OP planned for December 2007
- Plan to award FRP-III Second Quarter FY-08
- Prime Contractor: Orbital Sciences Corporation

GQM-163 Supports Threat A, B & C Requirements



GQM-163A High Diver Initiative





- High Diver development initiated in March 2006
- Demo expected in mid-2008





MA-31







MA-31 Update



- Program initiated via Foreign Comparative Testing (FCT) & Expanded Demonstration Test (EDT) from 1995-2000
- USN contracted with Boeing for the delivery of MA-31 targets in FY2000
 - Executing plan to close out MA-31 procurement contract due to numerous setbacks beyond Navy/Boeing control
- Conducting Joint Navy (LPD-18) & Army (Patriot) operation in December 2007 at Pt. Mugu range with last remaining assets
 - Expecting final contract closeout after the operation



AQM-37



- Medium to high altitude supersonic cruise with dive capability
 - Mach 2.0 4.0
 - Range 100 mi
 - Altitude 1000 ft 100 Kft
 - Demonstrated TBM profiles (300 Kft, 120 nmi downrange)
 - F-16 launch platform



- Last Delivery Dec 2001
- Conduct approximately 10-15 operations per year (~ half FMS)
- Potential high-diver surrogate
 - Low fidelity







Threat D and Multi-Stage Supersonic Target (MSST)





The case for a Threat D target has been kicked around for years . . .

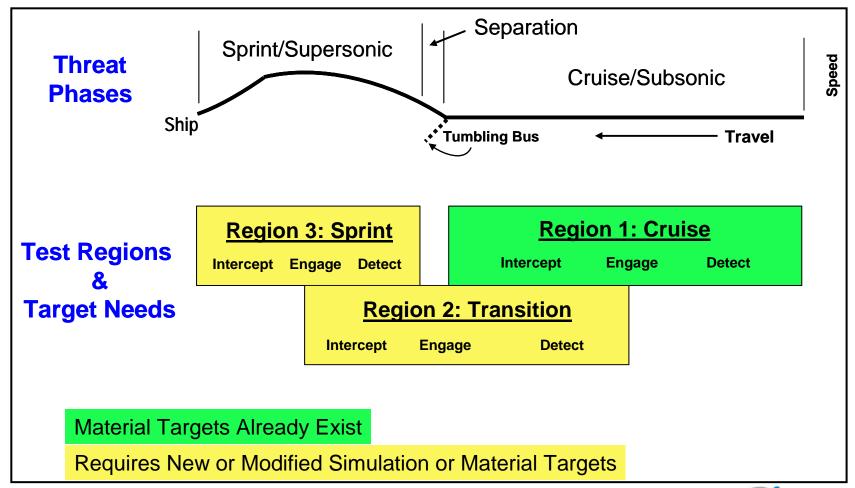




Threat D



Threat D poses challenging T&E requirements





Multi-Stage Supersonic Target



Requirement & Resourcing

- Navy did not fund target development in POM-08 budget submission
- DEPSECDEF directed Threat D study. Study completed April 2007
- Study recommended target development. Navy endorsed.
- OSD 3-Star Programmer review supported the development of a Threat D
 Target
 - Agreed with study conclusions and Navy's recommendation
- October 2007 CDD in Final Navy review, approval anticipated mid-November 2007

Acquisition

- PMA-208 MSST team stood up in May 2007
- Draft RFP posted 25 July 2007
- Industry Day held 31 July 2007
- Planning to release Request For Proposal (RFP) in November 2007
- Anticipating 4.5 year System Development & Demonstration effort, with follow-on contract for Low Rate Initial Production and Full Rate Production
 - Planning to award SDD contract in FY08





Supersonic Summary



- GQM-163 Coyote in production
 - Meets Threat A, B, & C SSST requirements
 - Superb performance. Coyote will be long term workhorse for SSST mission
 - GQM-163 high dive capability being developed
- MA-31
 - Last assets will be expended in December 2007
 - Program to be completed
- AQM-37
 - Potential near-term high diver surrogate
- Multi-Stage Supersonic Target
 - Navy Team stood up May 2007
 - CDD in final approval process
 - RFP release planned for November 2007
 - Anticipated contract award 3rd quarter FY08







Subsonic Targets



BQM-34S



Sustainment

Maintain required inventory

Missions

- Low fidelity A/C simulator
- T&E workhorse special configurations
 - Harpoon Seeker integration

Product Improvements

- UIAU integration:
 - Replace existing autopilots with UIAU from BQM-74
 - Common avionics, radar altimeter, Support Equipment with current production BQM-74E
 - Reduced logistics
 - Avoid obsolescence
 - Allows for performance growth if required
 - LACE
 - PAWN

Prime contractor – Northrop Grumman

Current Inventory ~ 200 FY06 Ops/Expenditures - 19/2 FY07 Ops/Expenditures - 14/3





BQM-74E



Production

- Procurement rate 60/yr
- Training and T&E workhorse

Current Inventory ~ 265 **FY06 Ops/Expenditures** – 235/62

FY07 Ops/Expenditures – 158/52

Missions:

- High fidelity Anti-Ship Cruise Missile (ASCM) Surrogate
- Low-fidelity A/C simulator
 - Altitude: 7 ft 40 Kft
 - Endurance: 68 min
 - Ground Launch; Shipboard Launch;
 - Air Launch: C-130, Gulfstream, F-16

Product improvements

- Programmable semi-autonomous waypoint navigation
 - Selectable Lost Carrier Sensitivity from waypoint to waypoint
 - Return to Recovery Area
 - FY08 limited fielding planned

Prime contractor – Northrop Grumman





Subscale Subsonic Aerial Target (SSAT)



- Need for a high fidelity subsonic target vehicle that meets Navy requirements
- Performance requirements being validated
- Considering full and open competition for a fly-off
 - Opportunity for Navy to evaluate SSAT candidates
 - Potential for RFP release in late FY08/early FY09
 - Potential multiple award in FY09 for fly-off
 - Down select to single source for production



Alternative Subsonic Flight Demonstration



- Navy strategy to "open aperture" to explore wider range of subsonic targets that may fulfill Navy needs
 - Goal is to ensure long-term best value performance & affordability
 - Demonstration initiative underway
- Contract competitively awarded to Composite Engineering, Inc. (CEi) of Sacramento, CA in September 06
 - Design based on Air Force BQM-167A
 - Five flight demonstrations planned
 - First flight 26 September
 - Second flight planned for 31 October



Subsonic Targets Summary



- ASCM Threat capabilities drive Navy subsonic target requirements
- BQM-34 still a viable system
 - Existing inventory will last indefinitely at current usage rate
- BQM-74E remains Navy workhorse
 - Relatively low cost
 - Shipboard & air launch capable
- Follow-on subsonic target needed to meet current requirements

Navy pursuing strategy to identify tomorrow's subsonic target







Full Scale Targets



QF-4/QF-16



QF-4

- Operating at Tyndall & White Sands Test Ranges
- Air Force existing contract runs thru Lot 15 (FY09)
- Plan to award new contract for two Lots in FY-10 & FY11
- Last deliveries in FY13 from procurements in FY-11

AST QF-16

- Replacement for the QF-4
- Air Force lead program
 - Navy providing requirements inputs and funding
- IOC 3QFY15
- ~15 years of production at 25 A/C per year



Mobile Land Targets



Requirement

- Fast, highly maneuverable, threat representative vehicles for aircrew training
- Enable JTACS & aircrew to identify & engage moving targets not normally associated with traditional enemy forces

FY08 Planning

- Low Rate Initial Production award
- 'Kit' concept
 - Vehicle
 - New or used
 - Control System
 - Autonomous or remote controlled



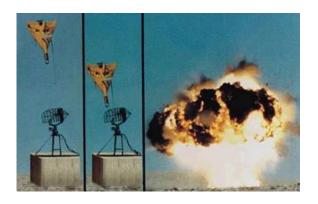




UAV Target



- Requirement
 - Provide the Navy/Marine Corps a test capability to represent an attack UAV that can:
 - Loiter above the battlefield
 - Search and home in on specified targets/ signals
 - Dives ~90° on the target
 - Detonate high explosives
- No existing targets are threat representative
- Working with requirements office to formalize requirement









Target Control System



System for Naval Target Control UHF 360 – 380 MHz



Current: SNTC System



- •UHF 435-450 MHz
- Single Frequency at a time
- •BQM-74/BQM-34 capable/HSMST/QST-35 Seaborne Targets
- Low transponder cost
- •200 nmi line of sight
- •330 nmi via Relav
- Training/T&E

Future: SNTC System UHF 360-380 MHz Upgrade

- Recommended primary user status by Navy Marine Corp. Spectrum Center (NMSC)
 - 250-300 KHz bandwidth available to accommodate full scale capability and future system growth
- •UHF 360-380 MHz
- Changes Freq to avoid interference
- •BQM-74/BQM-34 capable
- •HSMST/QST-35 Sea-borne targets capable
- Low transponder cost
- •200 nmi line of sight
- •330 nmi via Relav
- •Training/T&E





Target System Challenges



Evolution of the threats

- Supersonic dive
- Asymmetric threats
- Enhanced threat capability
- Stealth
- Scramjet . . . Mach 5 and beyond

Programmatic

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



The Way Ahead



The threats will continue to evolve. The Navy Target Team will continue to work with all stakeholders to provide required threat representations to meet the needs of developmental testing, operational evaluation and Fleet training.

Teaming with our Industry partners and Service counterparts is key to our continued success







Back-Ups



PMA-208 Aerial Target & Decoy Systems Program Office September 2007

SUPERSONIC TARGET

SYSTEMS IPT

CHARLIE MANSON, PMA-2081

Integrated Product Team Leads

GQM-163 IPTL: MICAH

SPIEGEL, PMA-2081B

HIGH DIVER DIPTL:

MATT LOTTS, WD539100E

MA-31 IPTL: CAROL LEYRER,

PMA-2082B

AQM-37 IPTL: LARRY HOGE

PMA2081A

LOGISTICS

GQM-163: DAN SPENCER,

WD663200E

AQM-37: RICHARD GOMEZ,

WD663200E

MA-31: CESAR AFANADOR.

WD663200E

SUPERSONICS: PETE

RONBECK, (SYNECTIC

SOLUTIONS)

SYSTEMS ENGINEERING

MA-31/GQM-163:

PETE PATEL, AIR-4.1

BFM

GQM-163/MA-31/FSA:

MICAH SPIEGEL, PMA-208B1

AQM-37: STEVE PALM, PMA-

208B2

CONTRACTS

MA-31: DIANE STABILE,

AIR-2.4.4.2

GQM-163: KEVIN FAUGHNAN/

KELLY CHISM, AIR-2.4.4.2

ACQUISITION SUPPORT

MA-31/AQM-37: STEVE ADRIAN,

(DPA)

GQM-163: STEPHANIE

BARNETT, (DPA)



MGMT ASST/SECRETARIAL

DEBI WILKERSON, PMA-208S

CONTROL SYSTEMS AND

COMMON TAAS IPT

LCDR CHRIS SACCO, PMA-2084

Integrated Product Team Leads

TCS IPTL: TRACY BURROWS,

PMA-2084A

DIPTL: DARYL JUE, WD531300E

TCS/TAAS/TDU IPTL:

RICHARD GOMEZ, WD663200E

DIPT: VACANT

LOGISTICS

TCS/TAAS:

RICHARD GOMEZ, WD663200E

SYSTEMS ENGINEERING

TCS: STEVEN ON, AIR-4.1

TAAS: JUAN MOREIRA, AIR-4.1

BFM

DPM ACQ AND OPS

ANNA SCHIBLER, PMA-208C OPS ASST: SCOTT BAKER, (DPA) NMCI: DALE FORD. (DPA) ACQ ASST: PAM BARBER-MILLS (WYLE)

CHIEF ENGINEER

STEVE CLOAK, AIR-4.1

CLASS DESK

CDR KEITH QUINCY, AIR 4.1

DIRECTOR OF LOGISTICS

PAT SEESE, AIR-6.0

FINANCIAL TEAM LEAD

LCDR KEVIN WRIGHT, PMA-208B

FMS

CASE MGR: JIM STUBBS, PMA-2086 FMS ASST: ANDREA DYSON (TITAN)

STATEGIC INITATIVES

LIZ EAGLES, PMA-2082C

T&E ENGINEER

KEITH SHANAHAN, AIR-5.1

OFFICE OF COUNSEL **ROBERT MCCALL, AIR-11.0**

CONTRACTING OFFICER

MIKE MCLOUGHLIN. AIR-2.4.4.2

FLEET LIAISON

VACANT. PMA-208D

COST ANALYST

CAMERON BRUCE,

AIR-426

TRAINING SYSTEMS

AOC BILL DEVINE, PMA-205

CONFIGURATION MGMT

CM LEAD: JUDY WOLLIN. (DPA) ASST: JILL TROSSBACH (DPA)

CSS PROGRAM MANAGER PDC O'CONNELL (DPA) PDC O'

TTSP/ETG

TOM WILLIAMS, PMA2087

DECOY SYSTEMS

DAN WRIGHT, PMA-2085

•MSST TARGET

DOUG TROLLINGER, PMA-2088

Integrated Product Team Leads

DIPTL: VACANT, PMA /

WD539100E

LOGISTICS

ED WORKMEISTER.

WD663200E

PETE RONBECK, (SYNECTIC

SOLUTIONS)

SYSTEMS ENGINEERING

STEVEN CLOAK (acting), AIR 4.1

VACANT, AIR 4.1

BFM

MICAH SPIEGEL, PMA-208B1

CONTRACTS

FRANK FISHER, AIR-2.4.4.2

ACQUISITION SUPPORT

ACQ ASST: PAM BARBER-

MILLS (WYLE)

SUBSONICS: SUE BANASZAK,

(CAMBER)

PROGRAM MANAGER

CAPT PAT BUCKLEY

PMA-208

PRINCIPAL DEPUTY

TIM BARNES

PMA-208A

FULL SCALE AND SUBSONIC TARGET SYSTEMS IPT

RAY GAGNON, PMA-2082

Integrated Product Team Leads BQM-34/74E IPTL: SHELLEY HALL,

> PMA2082A AST/QF-4 IPTL: CAROL LEYRER, PMA2082B

UAV/GRD IPTL: LIZ EAGLES. PMA2082C

LOGISTICS **BQM TARGETS: SHELLEY**

HALL, WD663200E QLT-1: RICHARD GOMEZ, WD663200E SUBSONICS: PETE RONBECK,

(SYNECTIC SOLUTIONS) SYSTEMS ENGINEERING

BQM-34: PETE PATEL, AIR 4.1 BQM-74E: STEVEN ON, AIR 4.1 BQM-74E: JOHNNY RESTIVO. (UNI)

BFM

AST/QF-4: MICAH SPIEGEL. PMA208B1 BQM-34/74/QLT-1: VACANT, (TITAN)

CONTRACTS

BQM-34/74: FRANK FISHER. AIR- 2.4.4.2

ACQUISITION SUPPORT

AST/QF-4: TOM DIDOMENICO. (SVERDRUP) BQM-34/74: VACANT

• MSST - Multi-Stage Supersonic Target

**SSAT Subsonic Subscale Aerial Target

** SSAT DEVELOPMENT

VACANT, PMA-2083

Integrated Product Team Leads SSAT DIPTL: DAVE WHITSON. WD539100E

LOGISTICS

SSAT: SHELLEY HALL. WD663200E SSAT: TOM PORTER, WD6631

SYSTEMS ENGINEERING

SSAT: ART NAKAS, AIR-4.1 T&E: TOM JAMESON. WD531100E

BFM

SSAT: MICAH SPIEGEL, PMA-208B1

CONTRACTS

SSAT: FRANK FISHER, AIR-2.4.4.2

ACQUISITION SUPPORT

SSAT: SUE BANASZAK, (CAMBER SSAT: JOHNNY RESTIVO. (UNI)

TCS: VACANT TAAS/TTSP: STEVE PALM. PMA-208B2

CONTRACTS

TCS: VICKEY MUDD, AIR-2.4.4.2 AIR-2.4.4.2 TAAS/TDU: BRYSON JO, WD230000E

KEY

PMA208 BILLET NAWC BILLET

CSS BILLET

