

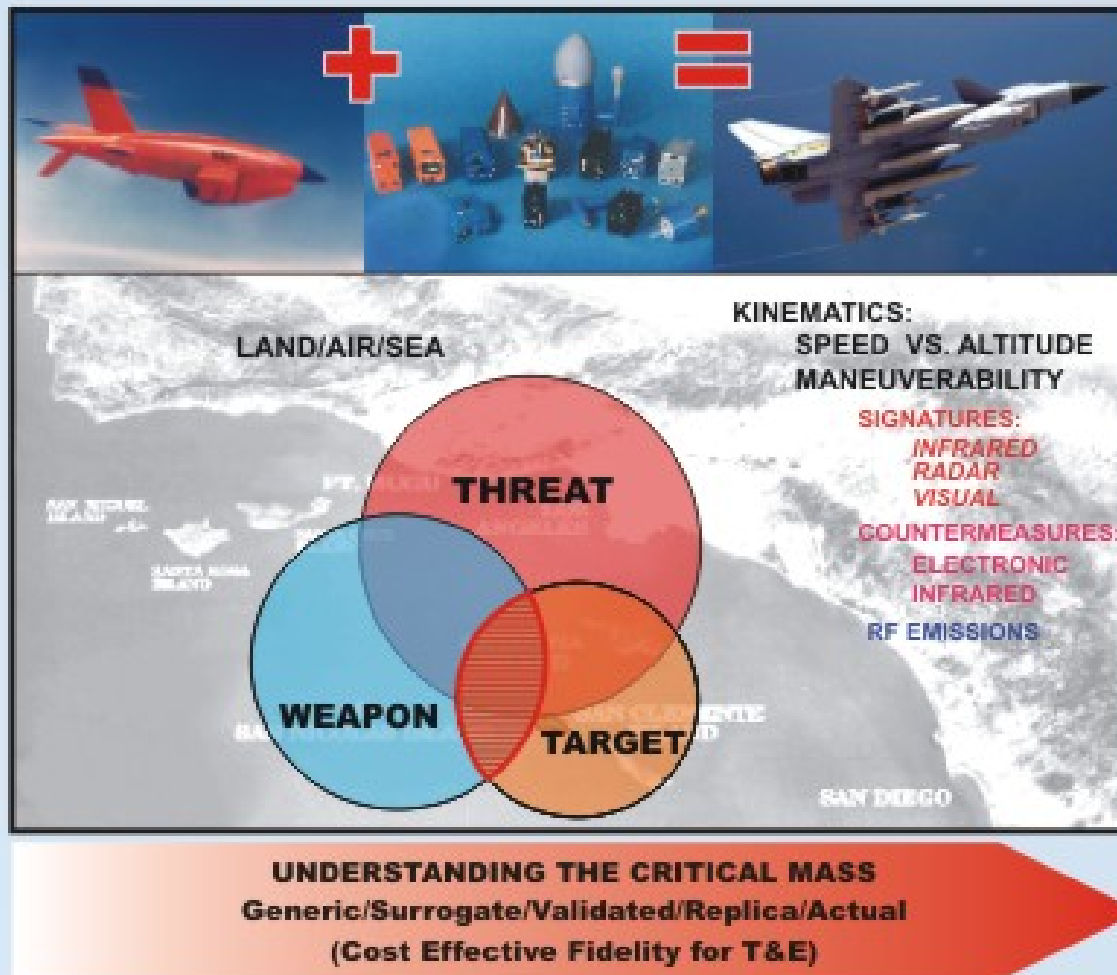


NAVAIR 5.3
Threat and Target Systems Department
Engineering & Operations Now and into the Future

**Presented to the NDIA 45th Annual Targets, UAVs &
Range Operations Symposium**

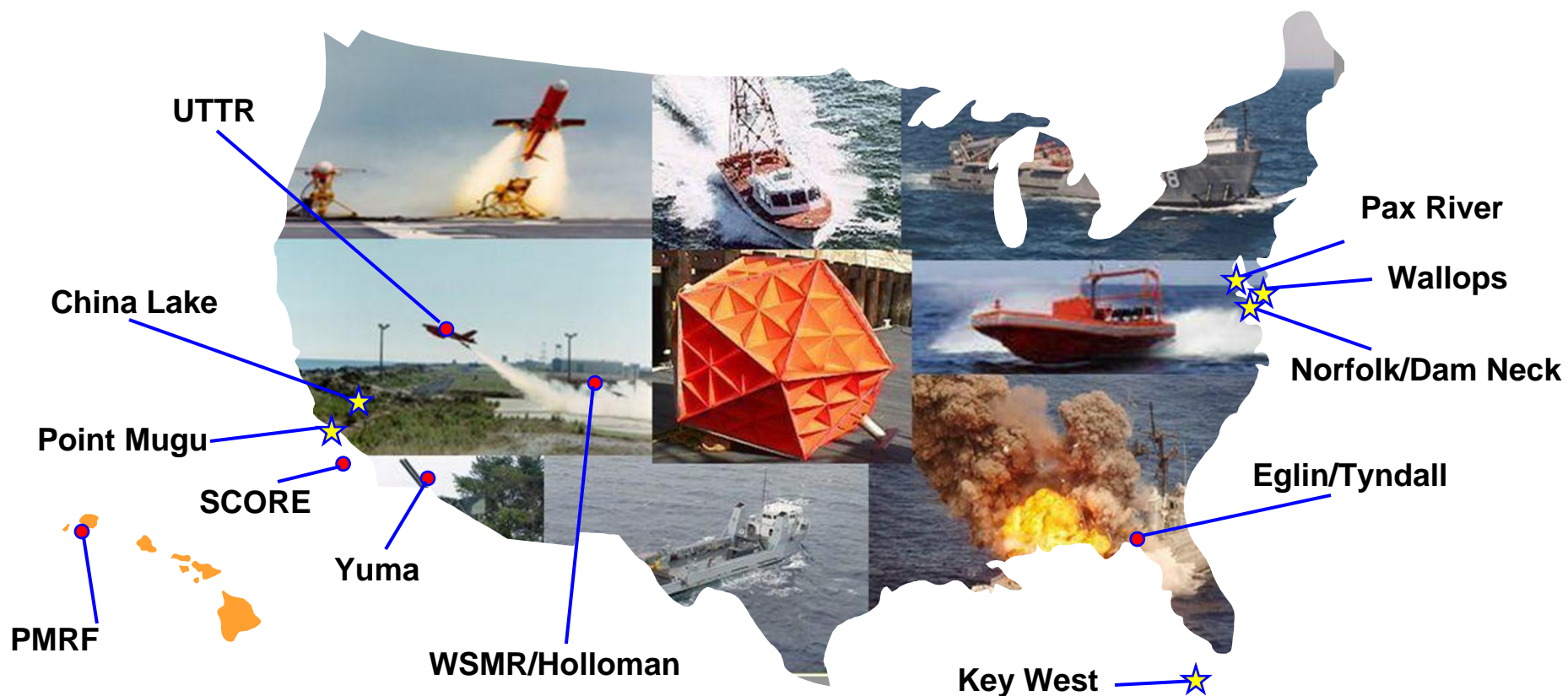
Thomas Dowd
Director, Threat/Targets Systems Department, AIR 5.3
Naval Air Warfare Center Weapons Division
Point Mugu, CA

OUR MISSION IS TO EMULATE THREATS FOR WEAPONS AND EW SYSTEMS, TEST AND EVALUATION AND TO SUPPORT EXPERIMENTATION AND FLEET TRAINING



NAV AIR

TTSD Operating Sites



- ★ Department Operating Activities
- Sites TTSD Deploys To Regularly

REPORTING RELATIONSHIPS

ASN (RD&A)
ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)

CNO
CHIEF OF NAVAL OPERATIONS

OPERATING
AGREEMENT

NAVAL AIR SYSTEMS COMMAND HEADQUARTERS
PATUXENT RIVER

COMMANDER
AIR-00

AIR-09R
NAVAL RESERVE

VICE COMMANDER
AIR-09

DEPUTY COMMANDER
AIR-00A

STAFF *
COMPTROLLER AIR-10.0
COUNSEL AIR-11.0
CIO AIR-7.0
ESPO AIR-00ES
IG AIR-00G
JAG AIR-00J
CNO CM AIR-00W

(ADDU FOR C4I)

COMSPAWAR
SPACE & NAVAL WARFARE
SYSTEMS COMMAND

COMNAVSUP
SUPPLY SYSTEMS
COMMAND

NAVICP
INVENTORY
CONTROL POINT

Competency
aligned here

REPORTS DIRECTLY TO AIR-00 FOR THEIR RESPECTIVE
AREAS OF RESPONSIBILITY

AIR-1.0
PROGRAM
MANAGEMENT
ACQUISITION EXEC

AIR-2.0
CONTRACTS
ASST. COMMANDER

AIR-3.0
LOGISTICS
ASST. COMMANDER

AIR-4.0
RESEARCH &
ENGINEERING
ASST. COMMANDER

AIR-5.0
TEST &
EVALUATION
ASST. COMMANDER

AIR-6.0
INDUSTRIAL
OPERATIONS
ASST. COMMANDER

AIR-7.0
CORPORATE
OPERATIONS
ASST. COMMANDER

**NAVAL AIR TECHNICAL
DATA AND ENGINEERING
SERVICE COMMAND
(NATEC)**
NORTH ISLAND
COMMANDING OFFICER

AIRCRAFT DIVISION

PATUXENT RIVER,
LAKEHURST
COMMANDER

**WEAPONS
DIVISION**

HINA LAKE, POINT MUGU
COMMANDER

**NAVAL TEST WING
ATLANTIC**
PATUXENT RIVER
COMMANDER

**TRAINING
SYSTEMS**
ORLANDO
COMMANDING OFFICER

**NAVAL TEST WING
PACIFIC**
POINT MUGU
COMMANDER

**NAVAL AIR
DEPOT
(NAVAIRDEPOT)**
NORTH ISLAND
COMMANDING OFFICER

**NAVAL AIR PACIFIC
REPAIR ACTIVITY
(NAVAIRPRA)**
ATSUGI, JAPAN
COMMANDING OFFICER

**NAVAL AIR
DEPOT
(NAVAIRDEPOT)**
JACKSONVILLE
COMMANDING OFFICER

**NAVAL AIR
MEDITERRANEAN
REPAIR ACTIVITY
(NAVAIRMRA)**
NAPLES, ITALY
COMMANDING OFFICER

**NAVAL AIR
DEPOT
(NAVAIRDEPOT)**
CHERRY POINT
COMMANDING OFFICER

**NAVAL
AIR DEPOTS**

Headquartered
within WD at
Point Mugu

**LOGISTICS
SUPPORT
ACTIVITY**

**PRODUCT CENTERS
(NAVAL AIR WARFARE CENTERS)**

PEO (T)
TACTICAL
AIRCRAFT
PROGRAMS

PEO (A)
AIR ASW, ASSAULT
& SPECIAL MISSION
PROGRAMS

PEO (W)
STRIKE WEAPONS &
UNMANNED
AVIATION

PEO (JSF)
JOINT
STRIKE
FIGHTER

**PROGRAM
EXECUTIVE
OFFICES**

5.0 TEST & EVALUATION

Unclassified

RDML Dunaway
AIR-5.0
Assistant Commander
(760) 939-2201



5.0C
Staff Office
Mr. Vargo
(301) 342-4090

5.0D
ACC Office
CDR Teichert
(301) 757-8267

Asst CDR for T&E

5.0F
Aviation Safety Office
CDR Stiffel
(301) 757-2242

COMNAVAIRSYSCOM

5.0G
AEDC Ops Liaison Office
Mr. Rutland
(931) 454-6675

Mr. Greer
AIR-5.0A
Deputy Assistant
Commander
(301) 342-1129



5.1
Integrated Systems Evaluation,
Experimentation & Test
Director
Mr. Cricchi
(301) 342-6758

5.2
Ranges
Director
Mr. Mendonca
(805) 989-7275

5.3
Threat/Target Systems
Director
Mr. Dowd
(805) 989-8534

5.4
Integrated Battlespace
Simulation & Test
Director
Mr. Young
(301) 342-6008

5.1 Commanders

LANT

PAC

Col Mortensen
(301) 342-1113

CAPT Hnarakis
(805) 989-8763



5.3 Threat & Target Systems Department



Scott Foisy

Associate for Business Operations



Ben Rasnick

Associate for Projects

531

Target Systems
Engineering

Dae Hong

532

Pacific Target and
Marine Operations

Bob Williams

533

Atlantic Target and
Marine Operations

Robert Graham

534

Airborne Threat
Simulation

Emery Kujiraoka

535

Combat Environment
Simulation

Eddy Witzel

539

Threat/Target
Systems TEAMAerial Targets
TeamSurface Targets
TeamAirborne Threat
Simulation TeamCombat
Environment
Simulation TeamAdvanced
Technology Test
Team

Jeff Blume



Thomas Williams



Garon Harris



Roger Fulton

Workforce

~190 Civilians

~270 O&M Contractor Wyr

~50 Engineering Services Contractor Wyr

Functions

Target Systems Engineering

Target systems technology development, acquisition support, systems integration, operations engineering, Els, LECs



Atlantic/Pacific Target & Marine Operations

World wide surface and airborne target and marine operational services including unique mods and augmentation



Threat/Target Systems Management

Provides entry point for Sponsors to form integrated project offices, and externally directed project offices



Airborne Threat Simulation

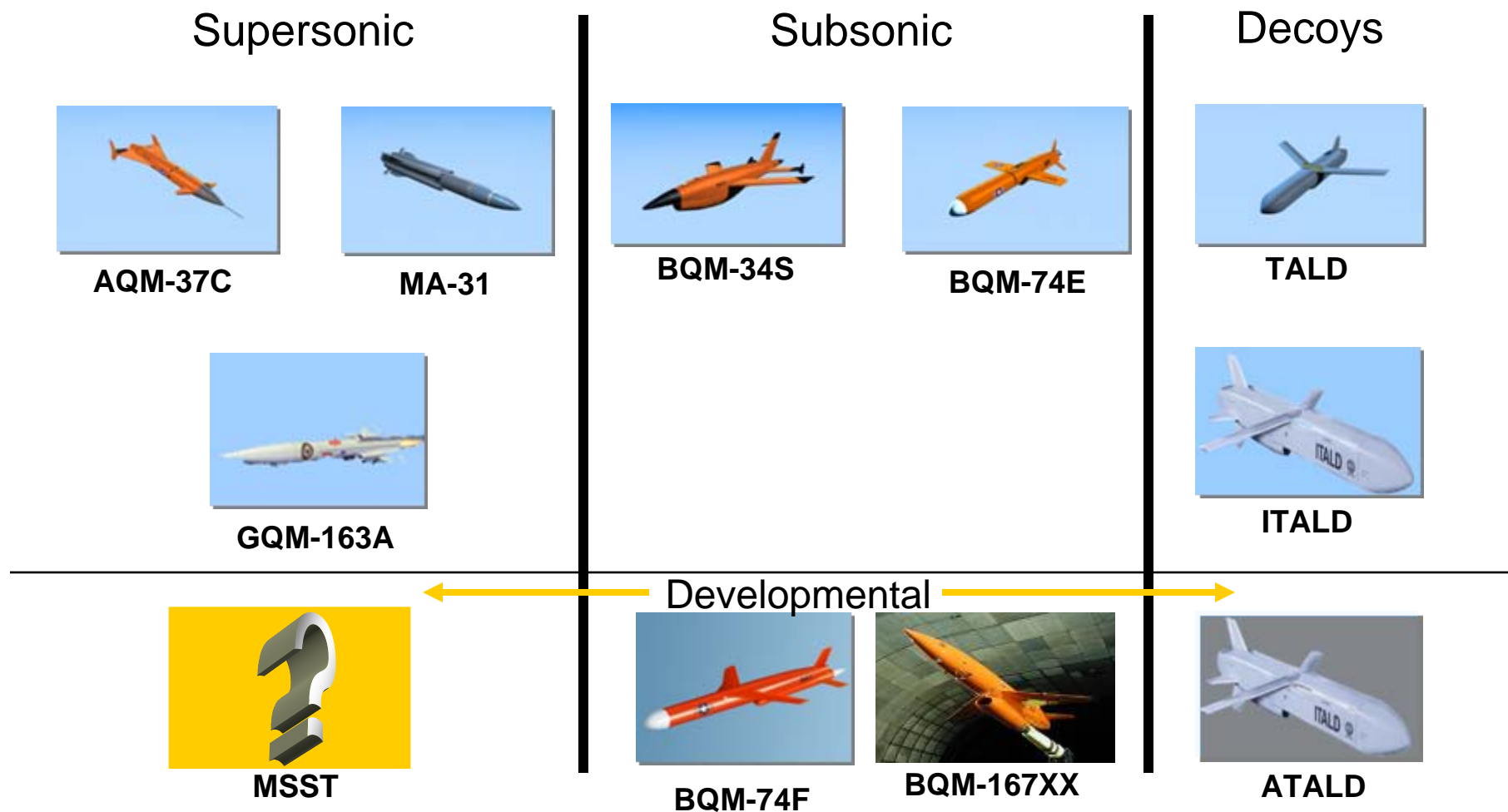
Design development and operational support of electronic attack and radar airborne threat emitter systems



Combat Environment Threat Simulation

Development and technical support of EO/IR/MW/UV/Laser/C4I threat simulator systems

5.3 Operates all Aerial Target Types and Variants



5.3 Operates all Seaborne Target Types and Variants



High-speed terrorist threat

Fast-Attack Craft Target

Generic Threat. Also Tow Tractor



Ship-deployable for at-sea training



Self-propelled ship simulator

5.3 Designs & Operates Several Land-Based Targets

- **Target Mold Prototype & Manufacture**
 - 3D, 2D, cold air inflatable
 - Copper cladded
 - Trailer mounted
 - Active Emitters Integrated
- **Deliver & Train or Provide Field Operations**
- **Diverse Customers**
 - Primarily Training Purposes
 - Training Ranges
 - JNTC, Army, Navy, Air National Guard



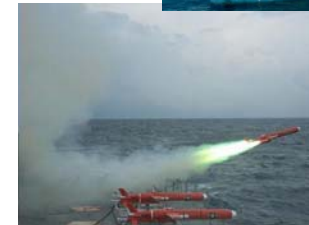
Target Operations

- **East Coast:**
 - 562 surface events (2,700+ mission hours)
- **West Coast**
 - 151 aerial target launches
 - 945 surface events

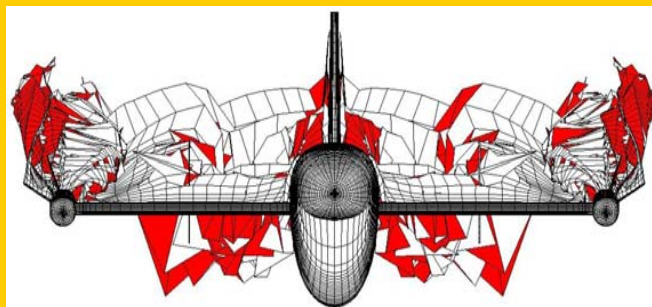
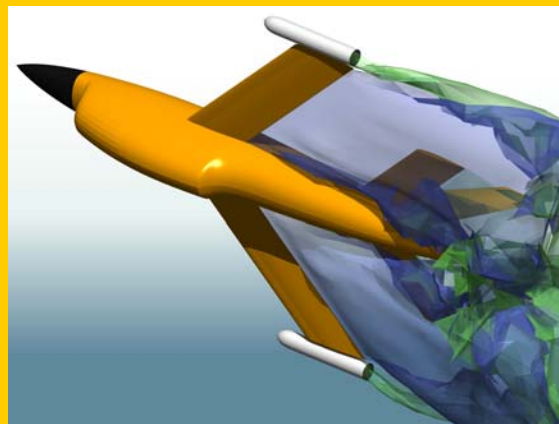


VC-6 to NAVAIR 5.3 Transition

- In 2006 CNAF determined to disestablish VC-6; In April 07 USFFC chose NAVAIR 5.3.3 to transition East Coast Fleet Training Target Operations to
 - First Seaborne detachment stood up Oct 1
 - Two more Seaborne dets and two Aerial dets will phase in by March 08; NAVAIR will be fully responsible by June 08
- VC-6 FY07 Op Tempo
 - 57 BQM-74E target launches
 - 936 surface sorties/5,200+ mission hours



5.3 Engineering Highlights



Navy/Reliance Lead for Seaborne Target Development

- **Fast Attack Craft Target**

- 50 ft length - 50 knots in SS2
- Missile-capable FIAC threat
- Development complete
- Transitioning to production



- **Modular Tow Target**

- Light weight
- Replaces Williams Sled & HARM barge
 - **Lower cost**
 - **HSMST towable**
- Work in progress



BQM-34S(H) Target

BQM-34S Harpoon Target Requirement: Integration of a real world (Harpoon) Anti-Ship Cruise Missile (ASCM) seeker into a BQM-34S target to test Electronic Counter-Measures & decoy systems. The BQM-34S is the only available vehicle that can meet speed and altitude requirements while flying against a manned ship. BQM-34S(H) is a controllable and re-useable Harpoon surrogate that can encrypt, transmit, and record its seeker's video data.





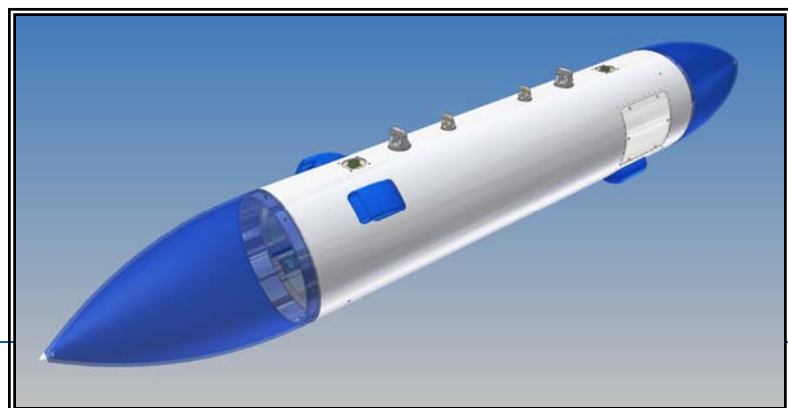
First Flight: Kfir (Jul07)

AN/AST-9(V) Simulator

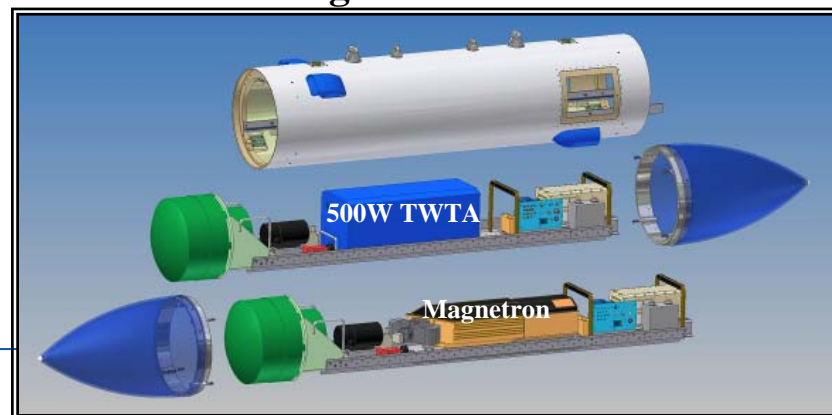


- AN/AST-9(V) is an advanced supersonic airborne radar simulator pod developed for Fleet training and weapon system Test & Evaluation.
- The configurable AST-9 simulates airborne radar and missile systems using high power traveling wave tube and magnetron transmitters, operating in H-J bands.
- First flights began in FY07 in support of 3rd Fleet training exercises.
- 7 pods have been delivered so far with 6 more scheduled for CY07. 30 total pods.

AN/AST-9 Pod



Traveling Wave Tube Amplifier Variant & Magnetron Variant



Combat Environment Simulation Division Products

- **Threat simulators-RF, IR, UV for T&E Ranges such as ECR at China Lake.**
 - Development
 - Acquisition
 - T&E
 - Validation documentation
- **Electronic Warfare systems for the major DON aircrew Tactical Training Ranges.**
 - Development
 - Acquisition
 - Integration
 - Upgrades
- **Navy Threat / Simulator Validation Program Coordination**
 - Independent of Devel Offices/Joint Val Member
 - Develop and maintain validation procedures
 - Review validation Reports
 - Maintain database and schedules



Examples of Current/Future Focus Areas

- New Subscale DT (BQM-74E replacement)
- Future testing of Hi Diver variant of SSST
- Seaborne target swarm capability for Fleet training
- VBSS support to Navy, Coast Guard, Home Land Security
- Advanced Ground Target Threat System/Land Target Development
- Intrepid Tiger Phase II Communications Jammer
- Future testing of MSST



Threat/Target Systems Department Summary

- **T/TSD has tremendous operations and engineering capability**
- **We operate wherever the customer needs us**
- **We are committed to constant improvement**
- **The Military Value of our products and services is recognized by our Navy, DOD and FMS Customers**
- **We see many opportunities**
 - Target Operations World Wide
 - New Target Developments
 - Homeland Security exercise scenario support

