Overview

Naval Air Warfare Center
Aircraft Division
Patuxent River
### Form SF298 Citation Data

<table>
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<th>Report Date</th>
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<th>Dates Covered (from... to)</th>
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<td>NAWCAD Patuxent River Overview Slides and Disk ATR Dynamic RCS Measurement Capability Viewgraphs ACETEF Facility Viewgraphs</td>
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<table>
<thead>
<tr>
<th>Authors</th>
<th>Project Number</th>
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<tr>
<td>Zalesak, Philip</td>
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<th>Performing Organization Name(s) and Address(es)</th>
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<tr>
<td>Naval Air Warfare Center Aircraft Division 22347 Cedar Point Road, Unit #6 Patuxent River, MD 20670-1161</td>
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### Supplementary Notes

### Abstract

### Subject Terms

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Consolidation at PAX

NAVAIR HQ
Command, Contracts
Engineering, Logistics
Washington, DC

PEO’s/ PMA’s
Program Management
Washington, DC

Aircraft R&D
Warminster, PA

Aircraft T&E
Logistics
Pax River, MD

Propulsion
R&D, T&E
Trenton, NJ

Ship/ Shore
Electronics
Engineering
St. Inigoes, MD

Full Spectrum
Aviation System
Acquisition
Pax River, MD
Mission

➢ To be the Navy’s Principal Research, Development, Test, Evaluation, Engineering, and Fleet Support Activity for:

↳ Naval Aircraft
↳ Engines
↳ Avionics
↳ Aircraft Support Systems
↳ Ship/Shore Air Operations
The Business We Are In

- Develop, acquire and support aircraft and related systems which can be operated and sustained at sea
- Work with industry on behalf of the user to deliver our products and services
Naval Aviation Systems Team
Reporting Relationships

NAVAL AIR SYSTEMS COMMAND

SUPPORT RELATIONSHIPS

PEO(A)
PEO(HQ)
PEO(R&D)
PEO(T)
PEO(JSF)

NAVSUP
NAVAL SUPPLY SYSTEMS COMMAND

NAVICP
NAVAL INVENTORY CONTROL POINT

LOGISTICS
SUPPORT ACTIVITIES/NAVAL AVIATION
DEPOTS

CNO
CHIEF OF NAVAL OPERATIONS
NAVY ACQUISITION EXECUTIVE
ASN(RD&A)

OPERATING AGREEMENT
Product Centers
Work Areas

WEAPONS
WEST COAST HUB

- MISSILES / FREEFALL WEAPONS
- WEAPON SYSTEM INTEGRATION
- ELECTRONIC WARFARE SYSTEMS

AIRCRAFT
EAST COAST HUB

- AIR VEHICLES
- PROPULSION & POWER
- AVIONICS & SENSORS
- CREW SYSTEMS
- SUPPORT SYSTEMS

FY99
3 HUBS
(@ 5 SITES)

China Lake
Pt Mugu

Lakehurst
Patuxent River

Orlando

TRAINING

- SIMULATOR SYSTEMS
NAWCAD (PAX/ LKE/ ORL)

Civilians by Site

As of March 31, 1999

PAX  4,188  
60%

Lakehurst  1,765  
25%

Orlando  1,069  
15%

TOTAL  7,022
PAX Aircraft Division Workforce

As of 30 Sept 1999

Military  1,258  (12%)
Civilians  4,152  (39%)
Contractors  5,338  (49%)

TOTAL:  10,748
NAWCAD (PAX) RDT&E Workforce

As of 30 Sept 99
Research and Engineering Labs

- Patuxent River Facilities
North Engineering Center
South Engineering Center
Extensive Air Vehicle Test Facilities

Structures Test Facility

Actuation Laboratory

Wind Tunnel

Airframe Bearing Laboratory
Crew Station Technology Lab
Thermophysiology Lab
Horizontal Accelerator
Ejection Tower
Propulsion & Power Labs
Helicopter Drive System Test Facility
Fuels and Lubricants
Rotor Spin Facility
Research and Engineering Labs

- Pax Facilities
- St. Inigoes Facilities
Ship/Shore Electronics

Flight Area Control & Surveillance Facility Test Bed

Direct Altitude Identity Readout Lab

LAMPS Indoor Antenna Test Range

Automatic Identification Lab (IFF)
Test Resources

Test and Evaluation Resources
Test & Evaluation Group

- Atlantic Wing
  - Strike Squadron
  - Rotary Wing Squadron
  - Force Squadron
  - Test Pilot School

- Atlantic Range and Test Facilities

- Test Article Preparation
R&D, DT and OT Collocation
Test Pilot School Aircraft
Test Article Preparation
Instrumentation
OH-1 IR Suppression Installation

P-3 OTH Antenna Installation

AH-1 Fuel Tank

SH-60 MAD Mounting Assembly
Rapid Prototyping

SH-60 Gun Integration
Systems Integration
Air Combat Environment Test & Evaluation Facility (ACETEF)
Electromagnetic Environmental Effects (E^3)
Precipitation Static
Systems Integration Testing
Large Anechoic Chamber
Electronic Warfare Testing
Dome Simulation
Air Vehicle Systems Integration
Night Vision Device Testing
Atlantic Test Range
Real-Time Telemetry Processing System
EW Emitters
Arresting Gear
Antenna Testing Laboratory Automated System (ATLAS)

- In-Flight Antenna Measurements
  - 2 MHz to 18 GHz Free Space
  - Pattern Measurements
  - Referenced to Isotropic
  - Automated
  - Accurate
  - Dedicated
  - Unique Geographical Location
  - Versatile
Electro Optics Target
Reconnaissance/Resolution Target
Project Highlights
Active Test Projects

- Flight Systems
  - Airframe
  - Propulsion and Fuel
  - Flight Control
  - Environmental

- Mission Systems/Installed Weapons
  - Avionics
  - Processors and Software
  - Remote Sensors
  - Subsystems

- Component Improvements

- Related Support Systems
Flying Qualities
Stability and Control
Sensor Evaluation
Countermeasures
Countermeasures
Missile Compatibility
Air Crew Systems

- Chemical Biological Protective Gear
Shipboard Compatibility
External Load Validation
Unmanned Aerial Vehicle Testing
Unmanned Aerial Vehicle Testing
Aerial Refueling
Support Equipment
Targets

Fabricated T-72 Tank
T-72 Tank
F/A-18
AV-8B
T-45
SH60-B
F/A-18E
V-22
Non-TEAM Work
Anechoic Chamber

Satellite T&E
Amy

Patriot EMP Test
Air Force

RCS Testing
Vessel Traffic System
T-38 Engine Testing
E³ Testing

Royal Thailand Helo S70B

NAVAIR-0150-C0

NAVAL AIR WARFARE CENTER
F-14

Digital Flight Control System
Australian F-111C Testing
International

Nimrod Evaluation
International

Hellenic Navy S-70B-6 Helicopter
Penguin Missile Program
FY99 International Customers

- Argentina
- Australia
- Bahrain
- Canada
- Chile
- Denmark
- Egypt
- Finland
- France
- Germany
- Greece
- Hungary
- Israel
- Italy
- Japan
- Korea (Seoul)
- Kuwait
- Malaysia
- Netherlands
- New Zealand
- Norway
- Pakistan
- Portugal
- Saudi Arabia
- Senegal
- Singapore
- Spain
- Sweden
- Switzerland
- Taiwan
- Thailand
- Tunisia
- Turkey
- United Arab Emirates
- United Kingdom
Commercial

Boeing 717
Commercial

MD600
FY99 Commercial Customers

- Advanced Lubricant Technology
- Advanced Technical Products Inc
- Allied Signal Eatontown
- Allied Signal Lexington Park
- Allied Signal Newark
- American Overseas Marine Corp
- Ameritech Fastener Mfg
- Architects Engineers Planners
- Atlantic Mutual Companies
- Bath Ion Works Corp
- Bell Atlantic Mobile Annapolis
- Bell Geospace Inc.
- BF Goodrich
- Board of Education Toms River
- Board of Education/VOCA/City Ocean
- Boeing Long Beach Division
- Castrol Industrial North America Inc
- Central District of Illinois
- CKC Laboratories
- Coleman Microwave Co Edinburg
- Cooper Industries Liberty
- County of Mercer Trenton
- CRC Industries Inc
- DACCO-SCI Columbia
- Dayton-Granger Inc Ft Lauderdale
- Dera Electronics
- DHCS Central Finance
- Electronic Systems Inc Gaithersburg
- Empire Test Pilot School
- ESCO Eng Systems
- F H Technologies Inc.
- Fastener Innovation Technology
- Federal-Mogul Corp
- First National Bank
- Fullerton Operation
- General Kinetics Inc
- General Offshore Specialized
- Gentex Corp Western Operations
- Greer Stop Nut Inc Nashville
- GTE BBN Corp Cambridge
- Harris Corp Elec Sys Sector Melbourne
- Harris Corp Rochester
- Herley Industries Inc.
- Highland Federal Bank Burbank
- Huck International Inc
- Hughes Danbury Optical Systems Inc
- Intermarine USA Savannah
- Johns Hopkins University APL
- Lear Siegler Services Inc.
- Leland Electyrosystems Inc. Vandalia
- Level 1 Fasteners Huntington
- Llamas Plastics Inc
- Lockheed Aircraft Pax River
- Lockheed Martin Integ Systems Inc Orlando
- Lockheed Martin Lakeland
- Lockheed Martin Systems Fallon
- M Technologies Inc.
- Maritime Dynamics Inc Pax
- Massachusetts Bay Insurance Co Richmond
- McDonald’s Pax River
- McDonnell Aircraft & Missile Systems St. Louis
- McDonnell Douglas Aerospace
- McDonnell Douglas Corp St. Louis
- Moddadty Corp Subway Pax
- Motorola
FY99 Commercial Customers (cont)

- National Finance Center OPAC
- National Geographic Society
- Navmar Applied Sciences Corp
- Warminster
- Norman L Cyr Milton
- Northrup Grumman
- Northern District of Georgia
- Northrup Grumman Baltimore
- Northrup Grumman El Segundo
- Northrup Grumman Electronic Sensors & Sys Div
- Northrup Grumman Corp ISA Sector
- Ocean Research Education Foundation Inc. Coral Gables
- Omega Air Inc
- Operational Research Consultants Inc Chesapeake
- Penn State, University Park
- Phillips National Inc Lakehurst
- Photographic Imaging Services PAX
- Planning Systems Inc McLean
- Polysi Technologies Inc
- Postmaster PAX
- PSI Bearings
- Public Works & Gov Services Canada
- Quantum Milpitas
- Random Hearts Productions Inc
- Raytheon Company
- REV-CAP Co Inc, Maple Shade
- Rheology Montreal Ltd Canada
- Rockwell Science Center
- Royal Bank of Canada
- Sarma Aerospace Equipment
- SBS Avionics Technologies
- Scandia Manufacturing Co Inc
- Sea Education Association Inc
- Shore Lines Mfg Group Inc
- Sippican Inc
- Skyhooks Technologies Inc
- Smith Aerospace Leland
  Electrosystems Vandalia
- Smith Industries Aerospace
- State of New Jersey Police
- Sunstrand Aerospace Rockford
- TCOM, L P, Columbia
- Technologies Inc Horsham
- TECOM Industries
- Teledyne Brown Engineering
- Texaco Exploration & Production Inc
- The Boeing Company
  Seattle
- United Air Surveys
  Lakehurst
- United States Marine Inc
  New Orleans
- United Technologies Research Center
- University of Maryland
  College Park
- Veridian
- Virgin Lightships Inc
- Westinghouse Electric Corp
- Williams International
BOEING J SF

USAF CTOL

USN CV

USMC STOVL

UK STOVL
LOCKHEED MARTIN JSF

USAF CTOL

USN CV

USMC STOVL

UK STOVL
Air Interoperability Center
NAVAIR Business Process Re-engineering Initiatives

**OBJECTIVE**

“Devise a T&E capability development strategy to optimize TEAM support for air combat systems integration into future joint warfare systems (sensor command and control, shooter) in a Network Centric Warfare (NCW) architecture”

WSSA - Weapons System Support Activity
BMIC - Battle Management Integration Center
IBAR - Integrated Battlespace Arena
ACETEF - Air Combat Environment Test & Evaluation Facility
ATR - Atlantic Test Range
AIP - Avionics Improvement Program
Integrated Capabilities to Support Program Requirements

To support Research and Development, Acquisition, Test and Evaluation and Training for NCW capabilities such as:

- C4ISR
- Sensor Fusion
- Combat Identification
- Third Party Targeting
- SoS Integration

Hardware-in-the-loop

WSSA/SSA

S&T Facility

Simulation Facility

Installed System Test Facility

Open Air Range

Common Simulation & Stimulation Environment

Participant in DEP

Joint Service and Fleet Battle Experiments
Joint Advanced Distributed Simulation
High Performance Computing
Business Thrusts

- Form Strategic Alliances with Joint / Allied Warfighters
- Deliver Innovative Products and Services
- Institute TEAM-wide Business Development Processes
- Pursue Business External to the TEAM
- Shape Resources (People / Facilities) to Remain Relevant to Joint Warfighter
Gain the Edge

- Unique Work Force
- World Class Facilities
- Aircraft
- Airspace
- Full-Service Support
- $17.7 Billion Market
NAWCAD (PAX)
Civilians by Discipline

As of March 31, 1999

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<th>Discipline</th>
<th>Count</th>
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<tr>
<td>Prof</td>
<td>2,228</td>
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<tr>
<td>Admin</td>
<td>768</td>
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<tr>
<td>Tech</td>
<td>704</td>
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<tr>
<td>Blue Collar</td>
<td>201</td>
<td>5%</td>
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<tr>
<td>Clerical</td>
<td>171</td>
<td>4%</td>
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<tr>
<td>Other</td>
<td>116</td>
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NAWCAD (PAX)
Civilians by Competency

As of Sept 31, 1999

TOTAL  4152

Engineer/4  2,096 (49%) 687 (17%)
T&E/5  562 (14%)
CorpOps/7  531 (13%)
Shore St/8  141 (3%)
Logistics/3  98 (3%)
Contracts/2  37 (1%)
Prg Mgmt/1

As of Sept 31, 1999
PAX Work Force

TOTAL: 19,994

- Civilians 6,812 (34%)
- Military 2,994 (15%)
- Contractors 10,188 (51%)
Vision

- One TEAM Delivering 21st Century Aviation Solutions Enabling Dominance From The Sea ...