U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND

The Value of AMRDEC

2018
Deliver collaborative and innovative aviation and missile capabilities for responsive and cost-effective research, development and life cycle engineering solutions.
**WHO IS AMRDEC?**

- **Core Competencies**
  - Life Cycle Engineering
  - Research, Technology Development and Demonstration
  - Design and Modification
  - Software Engineering
  - Systems Integration
  - Test and Evaluation
  - Qualification
  - Aerodynamics/Aeromechanics
  - Structures
  - Propulsion
  - Guidance/Navigation
  - Autonomy and Teaming
  - Radio Frequency (RF) Technology
  - Fire Control Radar Technology
  - Image Processing
  - Models and Simulation
  - Cyber Security

**FY17 Summary**

- **FY17 Strength**
  - ~9,211
  - 2,945 Civilian
  - 16 Military
  - 6,250 Contractor
  - 907 / 5343 SETA / Non-SETA

- **FY17 Funding**
  - $2,904M

- **Budget Breakdown**
  - 6% Aviation S&T
  - 7% Missile S&T
  - 63% Army
  - 24% Other
Provide aviation and missile systems solutions to ensure victory on the battlefield today.

#2: Future Force

Develop and mature Science and Technology to provide technical capability to our Army’s (and nation’s) aviation and missile systems.

#3: Soldiers and People

Develop the engineering talent to support both Science and Technology and the aviation and missile materiel enterprise.
Patriot Missions
- Provides verification that software meets all performance and reliability requirements by performing system, software and operation testing
- Maintains an interoperability test bed that is used to perform all PATRIOT Joint Tactical Data Link Certification testing

Corrosion Mitigation
- Developing new procedures and techniques to combat corrosion on aircraft and missile platforms, ground support equipment and parts and components in storage facilities

Aviation and Missile Composites
- On-site fabrication capabilities ensure aviation and missile structures are built and tested to the requirements demanded by the Army’s combat environments

UH-60V
- Features a digital cockpit that updates legacy analog gauges
- Similar to UH-60M Pilot Vehicle Interface
- Meets Global Air Traffic Management requirements
Airworthiness
- Safely attain, sustain, and complete flight in accordance with approved usage limits
- Deliver responsive airworthiness solutions throughout the system life cycle

Modular Missile Technologies (MMT)
- Based on a Modular Open Systems Architecture for guided missiles
- Consists of two different airframe types: a canard-controlled forward firing missile and a tail-controlled drop/glide munition

Simulations, Trainers, & Integration Labs
- New methods include creating a PVI that closely replicates the actual aircraft
- Optimal mix of tactical and simulated hardware to keep trainers concurrent with aircraft

Lethal Miniature Aerial Missile System (LMAMS)
- Soldier-carried, Soldier-launched precision weapon system
- Allows precision engagement of enemy combatants without exposing the Warfighter to direct enemy fire

AMRDEC SUPPORTING READINESS
ARMY MODERNIZATION PRIORITIES

#1: Long Range Precision Fires

#2: Next Gen Combat Vehicles (NGCV)

#3: Future Vertical Lift (FVL)

#4: Network/C31

#5: Air & Missile Defense

#6: Soldier Lethality

Sustain & Train – Crosscutting
AMRDEC & MODERNIZATION

Long Range Precision Fires
- Low-Cost Tactical Extended Range Missile (LC TERM)
- Seekers
- Precision Target Acquisition Seeker (PTAS)
- Land-Based Anti-Ship Missiles (LBASM)
- Long Range Maneuverable Fires (LRMF)

Future Vertical Lift
- Joint Multi-Role Technical Demo (JMR-TD)
- Modular Open System Approach
- Modular Missile Technology
- NexGen Tactical UAS
- Multi-Role Small Guided Missile (MR-SGM)
- Single Multi-Mission Attack Missile (SMAM)
- Degraded Visual Environment-Mitigation

Air & Missile Defense
- Low-cost Extended-Range Air Defense (LowER-AD)
- Maneuvering Air Defense Technologies (MADT)
- Digital Array Radar Testbed (DART)
PLATFORMS
- Structures
- Sustainment
- Concept Design & Assessment

MISSION SYSTEMS
- Survivability
- Avionics & Networks

VEHICLE MANAGEMENT & CONTROL AND ROTORS
- Rotors
- Vehicle Management & Control

AUTONOMOUS AND UNMANNED SYSTEMS
- Autonomy & Teaming
- Human System Interface

MAJOR PROGRAM AREAS
- Joint Multi-Role Technology Demonstration
- Degraded Visual Environment – Mitigation
- Next Generation Tactical UAS Technology Demonstration

POWER
- Engines & Other Power Sources
- Drives

BASIC RESEARCH
- Computational Aeromechanics
- Experimental Aeromechanics

AMRDEC TOP AVIATION S&T INITIATIVES
AMRDEC MISSILE S&T ALIGNED TO ARMY PRIORITIES

LONG RANGE FIRES

- Tail-Controlled GMLRS (TCG) Technology Insertion
- Low-Cost Tactical Extended Range Missile (LC-TERM)
- Land-Based Ship Missile (LBASM)
- Long Range Maneuverable Fires (Hypersonic)

NEXT GENERATION COMBAT VEHICLE

- Enhanced Single Multi-Mission Attack Missile (E-SPSAM)
- Multiple Simultaneous Engagement Technologies (MSET)
- Hard Kill Active Protection System (APS)
- Anti-Armor Missile Demonstration

FUTURE VERTICAL LIFT

- Modular Missile Technologies
- Open Systems Architecture Rocket Propelled & Drop/Glide
- Multi-Role Guided Missile (MRGM)
- Next Generation Air-to-Ground Missile

AIR & MISSILE DEFENSE

- Low-Cost Extended Range Air Defense (LOWER-AD)
- Man-Portable Air Defense System (MANPADS)
- Digital Array Radar Testbed (DART)
- Maneuver Air Defense Tech
- NexGen Lower Tier Missile Technologies
“You can only deter your opponent if your opponent believes that you have the will and the capability...readiness has a deterrent value, as well as a war-fighting value.”

Gen. Mark A. Milley, Chief of Staff of the Army
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