2013
WEAPON SYSTEMS HANDBOOK
AMERICA'S ARMY: THE STRENGTH OF THE NATION™

Dear Reader:

Thank you for your interest in this annual publication, which details the Army's major weapon system programs and illustrates our ongoing efforts to empower, unburden and protect our Soldiers. The Army's Acquisition community is charged with the solemn responsibility of maintaining our Soldiers' unprecedented edge against current and future threats.

With program descriptions, status and specifications, projected activities, and names and locations of large and small contractors, this book will provide you with a better understanding of our efforts to provide Soldiers with the best, most advanced and sustainable equipment possible. To this end, we are mindful of the public trust imposed by the use of taxpayer resources. We continuously seek to improve our business practices to meet the needs of our Soldiers on an efficient and timely basis.

In providing our Soldiers with world-class capabilities, Army acquisition's most important asset is our people. Our skilled and dedicated professionals, working in Program Executive Offices and program offices throughout the nation, execute diverse responsibilities to enable the disciplined management of an extensive acquisition portfolio with programs that range from Soldiers systems to precision fires and from air and mission defense to ground combat systems. The responsibility of safeguarding future Army capabilities is a significant honor for the acquisition community and is one that we do not take lightly.

Heidi Shyu
Assistant Secretary of the Army
(Acquisition, Logistics, and Technology)
and Army Acquisition Executive

Table of Contents

How to Use this Book VI

Introduction 1

Weapon Systems 7

120M Motor Grader 8
2.75 Inch Rocket Systems (Hydra-70) 10
Abrams Tank Upgrade 12
Advanced Field Artillery Tactical Data System (AFATDS) 14
Advanced Threat Infrared Countermeasures (ATIRCM) and Common Missile Warning System (CMWS) Programs and Pre-MDAP Common Infrared Countermeasure (CIRCM) 16
Air Soldier System (Air SS) 18
Air Warrior (AW) 20
Air/Missile Defense Planning and Control System (AMDPCS) 22
Airborne and Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS) 24
Airborne Reconnaissance Low (ARL) 26
Anti-Personnel Mine Clearing System, Remote Control M160 28
AN/TPQ-53 (formerly known as the Enhanced AN/TPQ-36) 30
Armored Multi-Purpose Vehicle (AMPV) 32
Army Integrated Air and Missile Defense (AIAMD) 34
Army Key Management System (AKMS) 36
Artillery Ammunition 38
Assault Breacher Vehicle (ABV) 40
Assembled Chemical Weapons Alternatives (ACWA) 42
Aviation Combined Arms Tactical Trainer (AVCATT) 44
Biometric Enabling Capability (BEC) 46
Black Hawk/UH/HH-60 48
Bradley Fighting Vehicle Systems Upgrade 50
Calibration Sets Equipment (CALSETS) 52
Capability Set 13 (CS 13) 54
CH-47F Chinook 56
Chemical Biological Medical Systems (CBMS)–Prophylaxis 58
Chemical Biological Medical Systems (CBMS)–Diagnostics 60
Chemical Biological Medical Systems (CBMS)–Therapeutics 62
Chemical Biological Protective Shelter (CBPS) M8E1 64
Chemical, Biological, Radiological, Nuclear Dismounted Reconnaissance Sets, Kits, and Outfits (CBRN DR SKO) 66
Clip-on Sniper Night Sight (CoSNS), AN/PVS-30 68
Close Combat Tactical Trainer (CCTT) 70
Combat Service Support Communications (CSS Comms) 72
Command Post Systems and Integration (CPS&I) Standardized Integrated Command Post Systems (SICPS) 74
Common Hardware Systems (CHS) 76
Common Remotely Operated Weapon Station (CROWS) 78
Computer Hardware, Enterprise Software and Solutions (CHESS) 80
Counter Defilade Target Engagement (CDTE)–XM25 82
Countermine 84
Counter-Rocket, Artillery, Mortar (C-RAM) / Indirect Fire Protection Capability (IFPC) 86
Cryptographic Systems 88
Defense Enterprise Wideband SATCOM System (DEWSS) 90
Distributed Common Ground System–Army (DCGS-A) 92
Distributed Learning System (DLS) 94
Dry Support Bridge (DSB) 96
Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) 98
Enterprise Email (EE) 100
Excalibur (M982) 102
Family of Medium Tactical Vehicles (FMTV) 104
Fixed Wing 106
Force Protection Systems 108

Force Provider (FP) 110
Force XXI Battle Command Brigade and Below (FBCB2) 112
Forward Area Air Defense Command and Control (FAAD C2) 114
General Fund Enterprise Business Systems (GFEBS) 116
Global Combat Support System–Army (GCSS-Army) 118
Global Command and Control System–Army (GCCS-A) 120
Ground Combat Vehicle (GCV) 122
Guardrail Common Sensor (GR/CS) 124
Guided Multiple Launch Rocket System (GMLRS) DPICM/Unitary/ Alternative Warhead (Tactical Rockets) 126
Harbormaster Command and Control Center (HCCC) 128
Heavy Expanded Mobility Tactical Truck (HEMTT)/HEMTT Extended Service Program (ESP) 130
Heavy Loader 132
HELLFIRE Family of Missiles 134
Helmet Mounted Night Vision Devices (HMNVD) 136
High Mobility Artillery Rocket System (HIMARS) M142 138
High Mobility Engineer Excavator (HMEE) I and III 140
High Mobility Multipurpose Wheeled Vehicle (HMMWV) Recapitalization (RECAP) Program 142
Improved Environmental Control Unit (IECU) 144
Improved Ribbon Bridge (IRB) 146
Improved Target Acquisition System (ITAS) 148
Improvised Explosive Device Defeat/Protect Force (IEDD/PF) 150
Installation Information Infrastructure Modernization Program (I3MP) 152
Instrumentable Multiple Integrated Laser Engagement System (I-MILES) 154
Integrated Family of Test Equipment (IFTE) 156
Integrated Personnel and Pay System–Army (IPPS-A) 158
Interceptor Body Armor (IBA) 160
Javelin 162
Joint Air-to-Ground Missile (JAGM) 164
Joint Battle Command–Platform (JBC-P) 166
Joint Biological Point Detection System (JBPDS) 168
Joint Biological Tactical Detection System (JBTDS) 170
Joint Chem/Bio Coverall for Combat Vehicle Crewman (JC3) 172
Joint Chemical Agent Detector (JCAD) M4A1 174
Joint Effects Model (JEM) 176
Joint Effects Targeting System (JETS) Target Location Designation System (TLDS) 178
Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) 180
Joint Land Component Constructive Training Capability (JLCCTC) 182
Joint Light Tactical Vehicle (JLTV) 184
Joint Personnel Identification Version 2 (JPIv2) 186
Joint Precision Airdrop System (JPADS) 188
Joint Service Aircrew Mask–Rotary Wing (JSAM RW) (MPU-5) 190
Joint Service General Purpose Mask (JSGPM) M-50/M-51 192
Joint Service Transportable Small Scale Decontaminating Apparatus (JSTSS DA) M26 194
Joint Tactical Ground Station (JTAGS) 196
Joint Tactical Radio System Ground Mobile Radios (JTRS GMR) 198
Joint Tactical Radio System Handheld, Manpack, Small Form Fit (JTRS HMS) 200
Joint Tactical Radio System Network Enterprise Domain (JTRS NED) 202
Joint Warning and Reporting Network (JWARN) 204
Kiowa Warrior 206
Korea Transformation, Yongsan Relocation Plan, Land Partnership Plan (KT/YRP/LPP) 208
Lakota/UH-72A 210
Light Capability Rough Terrain Forklift (LCRTF) 212
Lightweight 155mm Howitzer System (LW155) 214
Lightweight Counter Mortar Radar (LCMR) 216
Lightweight Laser Designator Rangefinder (LLDR) AN/PED-1 & AN/PED-1A 218

Table of Contents

Line Haul Tractor 220
Load Handling System Compatible Water Tank Rack (Hippo) 222
Longbow Apache (AH-64D) (LBA) 224
M109 Family of Vehicles (FOV) (Paladin/FAASV, PIM SPH/CAT) 226
M1200 Armored Knight 228
Medical Communications for Combat Casualty Care (MC4) 230
Medical Simulation Training Center (MSTC) 232
Medium Caliber Ammunition (MCA) 234
Medium Extended Air Defense System (MEADS) 236
Meteorological Measuring Set-Profiler (MMS-P)/Computer Meteorological Data-Profiler (CMD-P) 238
Mine Protection Vehicle Family (MPVF), Area Mine Clearing System (AMCS), Interrogation Arm 240
Mine Resistant Ambush Protected Vehicles (MRAP), Army 242
Modular Fuel System (MFS) 244
Mortar Systems 246
Movement Tracking System (MTS) 248
MQ-1C Gray Eagle Unmanned Aircraft System (UAS) 250
Multiple Launch Rocket System (MLRS) M270A1 252
NAVSTAR Global Positioning System (GPS) 254
Nett Warrior (NW) 256
Night Vision Thermal Systems–Thermal Weapon Sight (TWS) 258
Non-Intrusive Inspection Systems (NIIS) 260
Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) –Stryker Sensor Suites 262
One Semi-Automated Force (OneSAF) 264
Palletized Load System (PLS) and PLS Extended Service Program (ESP) 266
PATRIOT Advanced Capability–3 (PAC-3) 268
Precision Guidance Kit (PGK) 270
Prophet 272
Rocket, Artillery, Mortar (RAM) Warn 274
Rough Terrain Container Handler (RTCH) 276
RQ-11B Raven Small Unmanned Aircraft System (SUAS) 278
RQ-7B Shadow Tactical Unmanned Aircraft System (TUAS) 280
Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) 282
Sentinel 284
Single Channel Ground and Airborne Radio System (SINCGARS) 286
Small Arms–Crew Served Weapons 288
Small Arms–Individual Weapons 290
Small Arms–Precision Weapons 292
Small Caliber Ammunition 294
Stryker Family of Vehicles 296
Sustainment System Mission Command (SSMC) 298
T-9 Medium Dozer 300
Tactical Electric Power (TEP) 302
Tactical Mission Command (TMC)/Maneuver Control System (MCS) 304
Tank Ammunition 306
Test Equipment Modernization (TEMOD) 308
Transportation Coordinators'–Automated Information for Movement System II (TC-AIMS II) 310
Tube-Launched, Optically-Tracked, Wire-Guided (TOW) Missiles 312
Unified Command Suite (UCS) 314
Unit Water Pod System (Camel II) 316
Warfighter Information Network–Tactical (WIN-T) Increment 1 318
Warfighter Information Network–Tactical (WIN-T) Increment 2 320
Warfighter Information Network–Tactical (WIN-T) Increment 3 322
XM1216 & XM1216 E1 Small Unmanned Ground System (SUGV) 324
XM7 Spider 326

Science and Technology 328
Army S&T Mission 328
Science and Technology Tenets 329
Resourcing S&T 330
Army S&T in Action 331
S&T Portfolios – Defining the Army's Capabilities of Tomorrow 331
Soldier S&T Portfolio 332
    Major Efforts 333
Ground S&T Portfolio 334
    Major Efforts 334
Air Portfolio 336
    Major Efforts 336
Command, Control, Communications & Intelligence (C3I) Portfolio 337
    Major Efforts 338
Innovation Enablers Portfolio 339
Basic Research Portfolio 340
    Major Efforts 340
Technology Transition – A Key Metric of Performance 342
Summary 343

Appendices 344
Army Combat Organizations 345
Glossary of Terms 346
Systems by Contractors 350
Contractors by State 363
Points of Contact 368

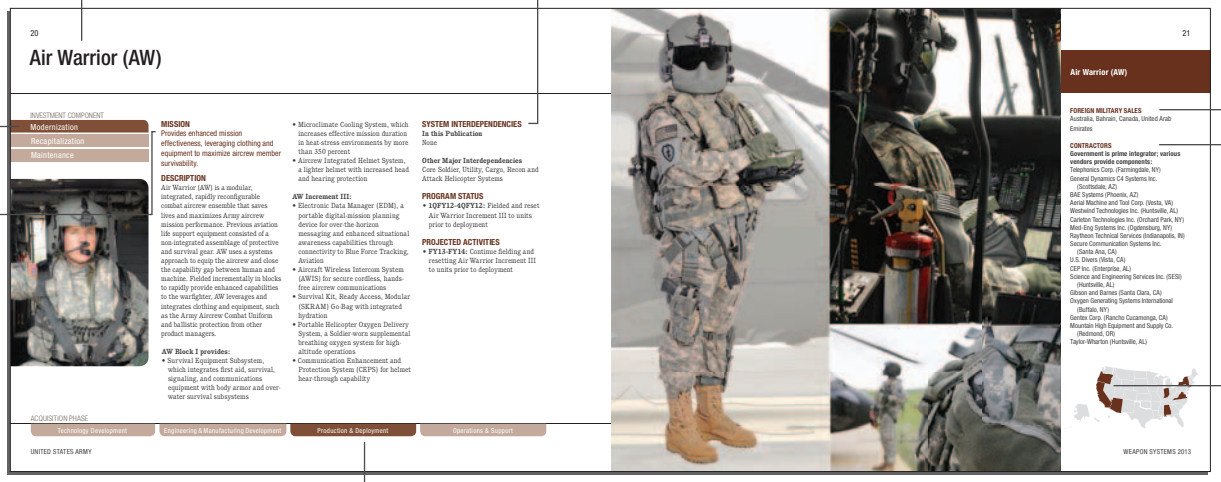
How to Use this Book

All systems are in alphabetical order

System interdependencies

Highlighted tabs indicate investment component

Mission statement: How the system benefits warfighters, combatant commanders, and support personnel



Highlighted tabs indicate acquisition phase

Foreign military sales

Contractor information

Contractor locations are highlighted

WHAT ARE SYSTEM INTERDEPENDENCIES?

The purpose of the **System Interdependencies** section is to identify which other weapon systems or components (if any) the main system works in concert with or relies upon for its operation. We categorize the interdependencies in two ways: 1) under the heading "In this Publication," which is a listing of systems in this 2013 edition and 2) "Other Major Interdependencies," which is a listing of systems that are not included in this publication.

WHAT ARE INVESTMENT COMPONENTS?

Modernization programs develop and/or procure new systems with improved warfighting capabilities.

Recapitalization programs rebuild or provide selected upgrades to currently fielded systems to ensure operational readiness and a zero-time, zero-mile system.

Maintenance programs include the repair or replacement of end items, parts, assemblies, and subassemblies that wear out or break.

WHAT ARE ACQUISITION PHASES?

Technology Development refers to the development of a materiel solution to an identified, validated need. During this phase, the Mission Needs Statement is approved, technology issues are considered, and possible alternatives are identified. This phase includes:

- Concept exploration
- Decision review
- Component advanced development

Engineering & Manufacturing Development is the phase in which a system is developed, program risk is reduced, operational supportability and design feasibility are ensured, and feasibility and affordability are demonstrated. This is also the phase in which system integration, interoperability, and utility are demonstrated. It includes:

- System integration
- System demonstration
- Interim progress review

Production & Deployment achieves an operational capability that satisfies mission needs. Components of this phase are:

- Low-rate initial production
- Full-rate production decision review
- Full-rate production and deployment
- Military equipment valuation

Operations & Support ensures that operational support performance requirements and sustainment of systems are met in the most cost-effective manner. Support varies but generally includes:

- Supply
- Maintenance
- Transportation
- Sustaining engineering
- Data management
- Configuration management
- Human factors engineering
- Personnel
- Manpower
- Training
- Habitability
- Survivability
- Safety and occupational health
- Information technology supportability
- Environmental management functions
- Anti-tamper provisions
- Interoperability
- Disposal/demilitarization

Because the Army is spiraling technology to the troops as soon as it is feasible, some programs and systems may be in all four phases at the same time. Mature programs are often only in one phase, such as operations and support, while newer systems are only in concept and technology development.

For additional information and definitions of these categories and terms, please see the Glossary.

DESIGN / DEVELOP / DELIVER / DOMINATE
TODAY AND TOMORROW
UNITED STATES ARMY

ASA(ALT)

MISSION

Provide our Soldiers a decisive advantage in any mission by developing, acquiring, fielding, and sustaining the world's best equipment and services and leveraging technologies and capabilities to meet current and future Army needs.

VISION

Highly efficient, effective, agile organization responsible for acquiring, developing, delivering, supporting, and sustaining the most capable affordable systems and services for our Soldiers:

// Enabling our Soldiers to dominate the battlespace, safely and securely.

// Enabling our Soldiers to achieve first look, first strike advantage with unprecedented speed and accuracy.

STRATEGIC CONTEXT

The U.S. Army is involved in combat operations around the world against adaptive enemies able to take advantage of the ever-increasing pace of technological change. Concurrently, we are facing an increasingly constrained fiscal environment. In this challenging environment, our goal in the Acquisition, Logistics, and Technology community is to do everything we can to provide the best equipment and services to our Soldiers.

Our Soldiers require comprehensive capabilities that allow them to communicate, engage, and disengage. Our troops must continue to operate with confidence in their equipment, operational capabilities, communication technology, enhanced situational awareness, and force protection. We must provide our Soldiers a decisive advantage in every fight so they return safely from every operation and engagement.

Modernizing the Army enables us to counter rapidly emerging threats that change the nature of battlefield operations. Through lessons learned, the Army will develop and field new capabilities or sustain, improve, or divest current systems based on operational value, capabilities shortfalls, and available resources.

After 10 years of combat, today's Army is significantly more capable than the Army of 2001. As we draw down from Iraq and Afghanistan, we must remain flexible, adaptable, and agile enough to respond and meet the needs of the combatant commanders. Our objective is to equip and maintain an Army with the latest most advanced weaponry to win and return home quickly.

The right foundation for success is based on sound planning – we cannot succeed unless requirements are matched with stable and well-planned resources under sound program management. This necessary collaboration does not end when programs are launched – and we have learned that it DOES take this collaboration to even get them launched, in the case of the Ground Combat Vehicle (GCV) – it must continue throughout the acquisition lifecycle. We have also reviewed our ongoing programs to mitigate risk by embracing competition, adopting sensible acquisition strategies that reflect more realistic assessments of what a program will cost, and address technological maturity.

The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) is deeply invested in developing, delivering, and sustaining the best weapons technology available. With the Soldier as the key focus, ASA(ALT) seeks to equip Soldiers with the best in cutting-edge technology and effectively manage over 600+ programs that are vital to success in combat.

ASA(ALT)'s focus is closely aligned with the Army Modernization Strategy, which outlines a series of key goals—such as the continued development of new technologies engineered to provide Soldiers with the decisive edge in battle. These technologies in development span a range of new capability to include sensors, Unmanned Aircraft Systems (UAS), missiles and missile guidance systems, emerging combat platforms such as the GCV, and key technologies such as the Army's maturing network, designed to connect Soldiers, sensors, and multiple nodes to one another in real-time to improve operational effectiveness across the full spectrum of combat operations.

The Army's equipping strategy is designed to counter changing threats and addresses the emergence of hybrid threats—the dynamic combination of conventional, irregular, terrorist, and criminal capabilities. The Army seeks to train, develop, and equip Soldiers who are able to stay in front of an adaptive, fast-changing adversary. By emphasizing the best design, delivery, and sustainment of Army equipment, ASA(ALT) will remain focused on harnessing scientific innovations in order to identify and develop the most promising new technologies.

We are focused upon preserving investment in our Science and Technology (S&T) efforts, to identify, leverage and deliver critical innovations which will better equip, empower and enable our force for the future. We strive to develop and sustain a near, mid and far-term S&T investment strategy so that we can spiral in new capabilities and technologies as they emerge and also identify disruptive or paradigm changing next-generation systems and solutions.

The Army is also implementing a more "Agile" acquisition and modernization process by conducting Network Evaluation Exercises (NIEs). The NIEs place emerging technologies in the hands of Soldiers in a combat-realistic environment in order to harness their feedback, keep pace with the speed of technological change, and in some cases, blend commercial-off-the-shelf technologies with existing programs of record. The heart of the NIE exercises is using the best available technologies to move information, voice, video, data, and images faster, further, and more efficiently across the force, and developing systems within a Common Operating Environment (COE), meaning they are built on software foundations that enable the maximum amount of interoperability. The Army's network will make it possible for Soldiers in a vehicle on-the-move to view and share real-time feeds from a nearby robot, ground sensor, or UAS—instantaneously providing them combat-relevant information and enabling them to share that information with other units on-the-move, dismounted Soldiers, and higher echelons of the force.

TRANSFORMING ARMY ACQUISITION AND BUSINESS PRACTICES

The Army remains focused on finding ways to continually examine and improve the acquisition process while increasing efficiency and serving as a full partner in the Department of Defense's Better Buying Power Initiatives.

A major challenge to acquisition continues to be the need to properly prioritize, streamline, and collaborate on requirements at the front end of the process in order to emphasize technological maturity, affordability, and productivity. The revised Request for Proposal for the GCV is an excellent demonstration of how we approached reform in this area; requirements were properly "tiered" and industry was given "trade space" designed to encourage innovation.

Also, we have learned of the importance of streamlining and at times challenging requirements in order to emphasize technological maturity and lower costs wherever possible. For instance, in our Joint Light Tactical Vehicle program, the Army worked with industry participants to "trade-off" certain requirements in order to lower costs and meet scheduling goals. Through this process, the Army was able to substantially lower the unit price of the vehicle while simultaneously ensuring the platform will succeed in delivering important next-generation capabilities.

The goal of our acquisition initiatives is to work with our industry and academic partners to more efficiently develop and deliver capabilities needed by the Soldier. A key aspect of this is an effort to identify and address inefficiencies discovered in the acquisition process.

A system-of-systems approach is vital to these ongoing efforts to transform business practices. The Army will continue to look at developing, managing, and acquiring technologies in the most efficient way possible, an approach which includes the need to understand the interdependencies among systems. We place an emphasis upon maturing the capability to synchronize programs and integrate schedules, deliveries, and other developments across the acquisition process.

As a result of these and other practices, the acquisition community remains acutely aware of its need to further the transformation of its business efforts. These initiatives help the Army transform as an institution and ensure that the best value possible is provided to the taxpayer and the Soldier—who is at the very center of these efforts.

COMMUNICATING AND COLLABORATING WITH INDUSTRY

ASA(ALT) will continue to foster, develop, and enhance its relationships with vital industry partners as a way to ensure the best possible development of new and emerging systems. With this as an organizing principle, ASA(ALT) has an industry outreach engagement program squarely focused on furthering partnerships with industry and facilitating constructive dialogue designed to achieve the best results for Soldiers in combat. Recognizing the importance of revitalizing industry engagement, the Army continues to nurture this outreach program, fostering and preserving strong relationships between the Army and its key industry partners.

Often there are circumstances where procurement sensitivities and ongoing competition may preclude the occasion to dialogue with industry. There are, nonetheless, ample opportunities for positive, proactive, and constructive engagement with industry partners. While placing a premium upon the importance of properly defining the parameters for discussion with industry partners, ASA(ALT) seeks to foster an environment of open dialogue.

The rationale behind this approach is based on the effort to minimize misunderstandings and “eleventh hour” reactions. This industry program is designed to anticipate future developments, recognize and communicate industry trends, and identify the evolution of key technologies that will support and protect our Soldiers in combat.

PATH FORWARD

We will provide whatever it takes to achieve the Nation's objectives in the current fight. At the same time, we will develop a shared vision to build tomorrow's Army—designing and preparing units, developing Soldiers, and growing leaders to win in an increasingly competitive learning environment. We will continue to maintain battlefield dominance but remain versatile and adaptable to any task our Nation may call upon us to perform. Continuous modernization is key to transforming Army capabilities and maintaining a technological advantage over our adversaries across the full spectrum of operations. ASA(ALT) looks forward to collaboration with all stakeholders to achieve the Army's broad modernization goals while supporting a cost-conscious culture.

The systems listed in this book are not isolated, individual products. Rather, they are part of an integrated Army system-of-systems investment designed to equip the Army of the future to successfully face any challenges. Each system and capability is important. Our goal is to develop and field a versatile and affordable mix of equipment that will enable Soldiers to succeed and maintain our decisive advantage over any enemy we face.

UNITED STATES ARMY

WEAPON SYSTEMS

LISTED IN ALPHABETICAL ORDER