

Making the Vision a Reality

Knowledge - Technology - Innovation



AFLMA

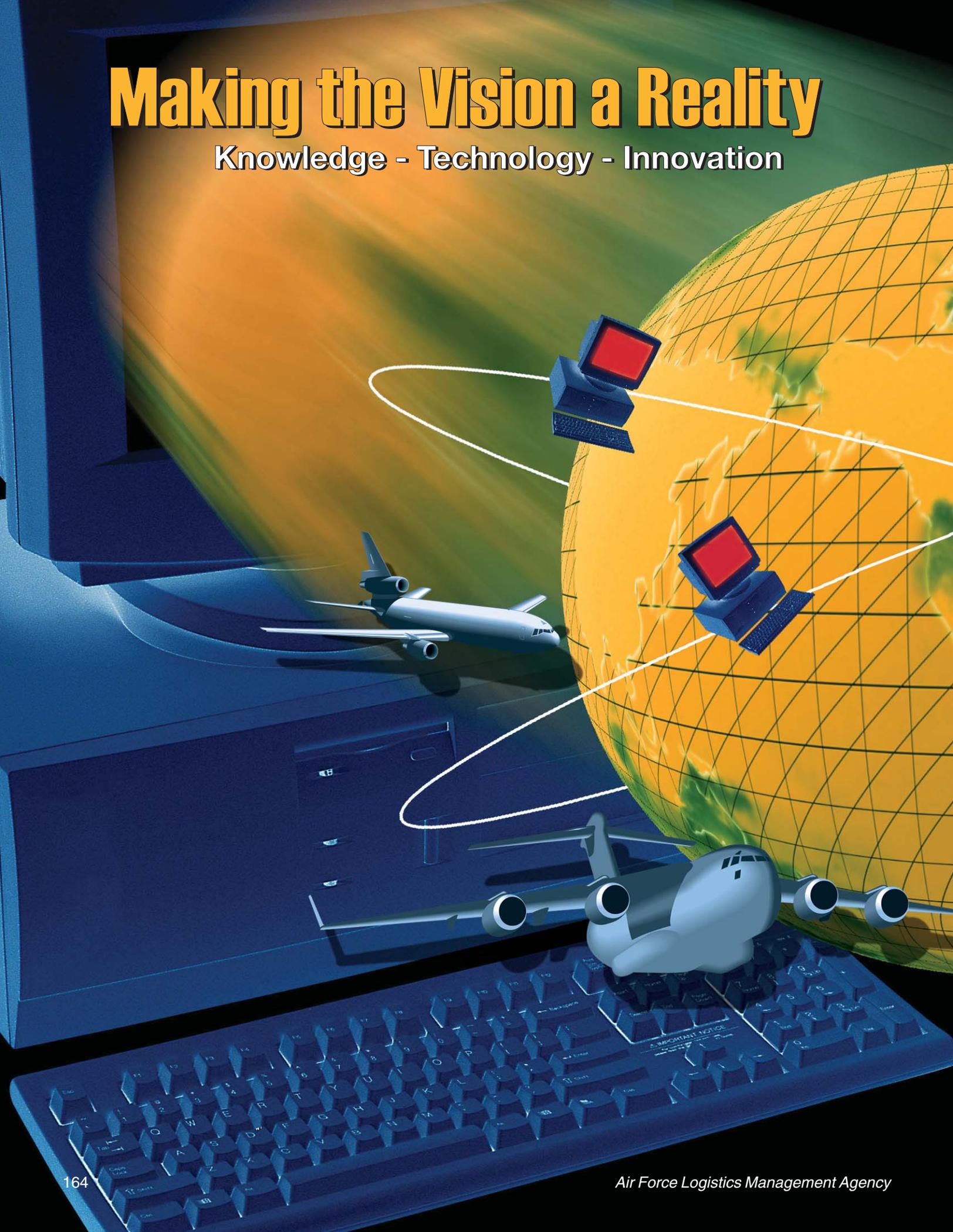
Year in Review

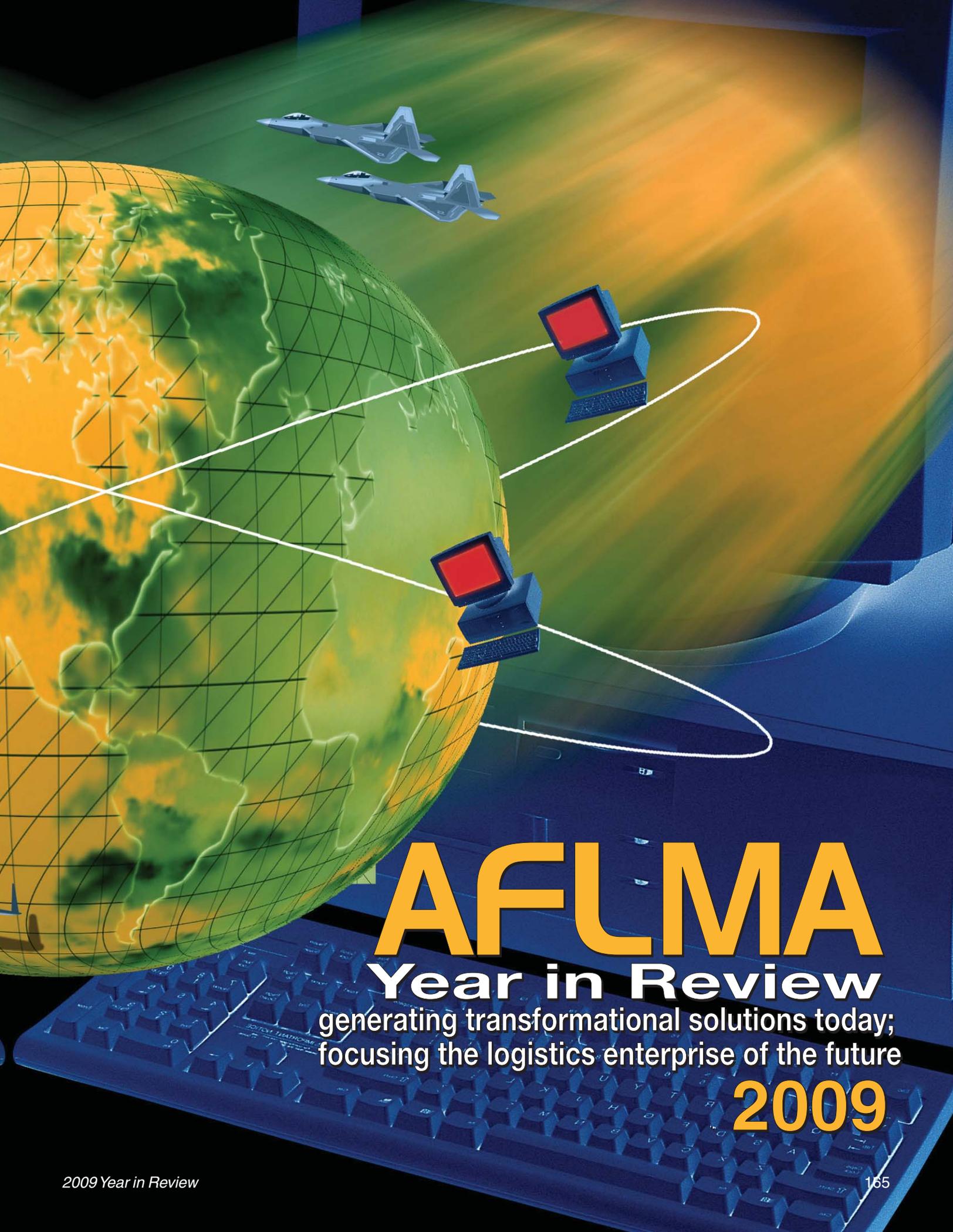
**generating transformational solutions today;
focusing the logistics enterprise of the future**

2009

Making the Vision a Reality

Knowledge - Technology - Innovation





AFLMA

Year in Review

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focusing the logistics enterprise of the future

2009

departments

AFLMA

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features
AFLMA



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Our Continuing
**Knowledge,
Technology,
Innovation!**

Commitment

You won't find lots of fancy words in the pages that follow. As you'll soon notice, this review gets right to the point. That's part of our commitment to you—the most demanding customers in the world need to know what we're doing to solve their problems, and they need to know now.

**GENERATING TRANSFORMATIONAL
SOLUTIONS TODAY; FOCUSING THE
LOGISTICS ENTERPRISE OF THE FUTURE**



Our

Generating transformational solutions today; focusing the logistics enterprise of the future is what the Air Force Logistics Management Agency is all about. This statement conveys our strength and energy.

Our track record puts us in the lead in delivering robust, tailored answers to the most difficult and complex Air Force logistics problems. This can be seen in our efforts and partnerships that are turning expeditionary airpower support concepts into real-world capability. It also can be seen in our work in making dramatic improvements to the Air Force supply system and developing high-impact logistics publications as well as our leadership in planning and making logistics play in wargames, simulations,

and exercises truly meaningful. It's also the reason the Agency is a key player in Air Force logistics transformation and in our role as the enterprise architect and analytical checkpoint for the supply chain sustainment process. The message is also loud—we work the important projects that shape tomorrow's Air Force, and we deliver what our customers need today!

The Agency continues to aggressively reach out to its customers. We're not just attending conferences and meetings—in many cases, we're leading them. We have enhanced our World Wide Web (WWW) site to improve customer support, and we've made many of our products available on other WWW sites. At the same time, we've expanded our role and efforts associated

Continuing Commitment

with Expeditionary Logistics for the 21st Century and provided critical support to the Logistics Transformation Office.

In addition, many of the logistics education publications created by the *Air Force Journal of Logistics* staff have become best sellers Department of Defense (DoD)-wide. Of particular note are *Contingency Contracting: A Joint Handbook for the 21st Century*, which has become the standard contingency contracting handbook across the DoD (a third edition was produced in 2010); *Back to Basics: A Handbook for Logistics Readiness and Aerial Port Squadron Commanders*, and an updated version of

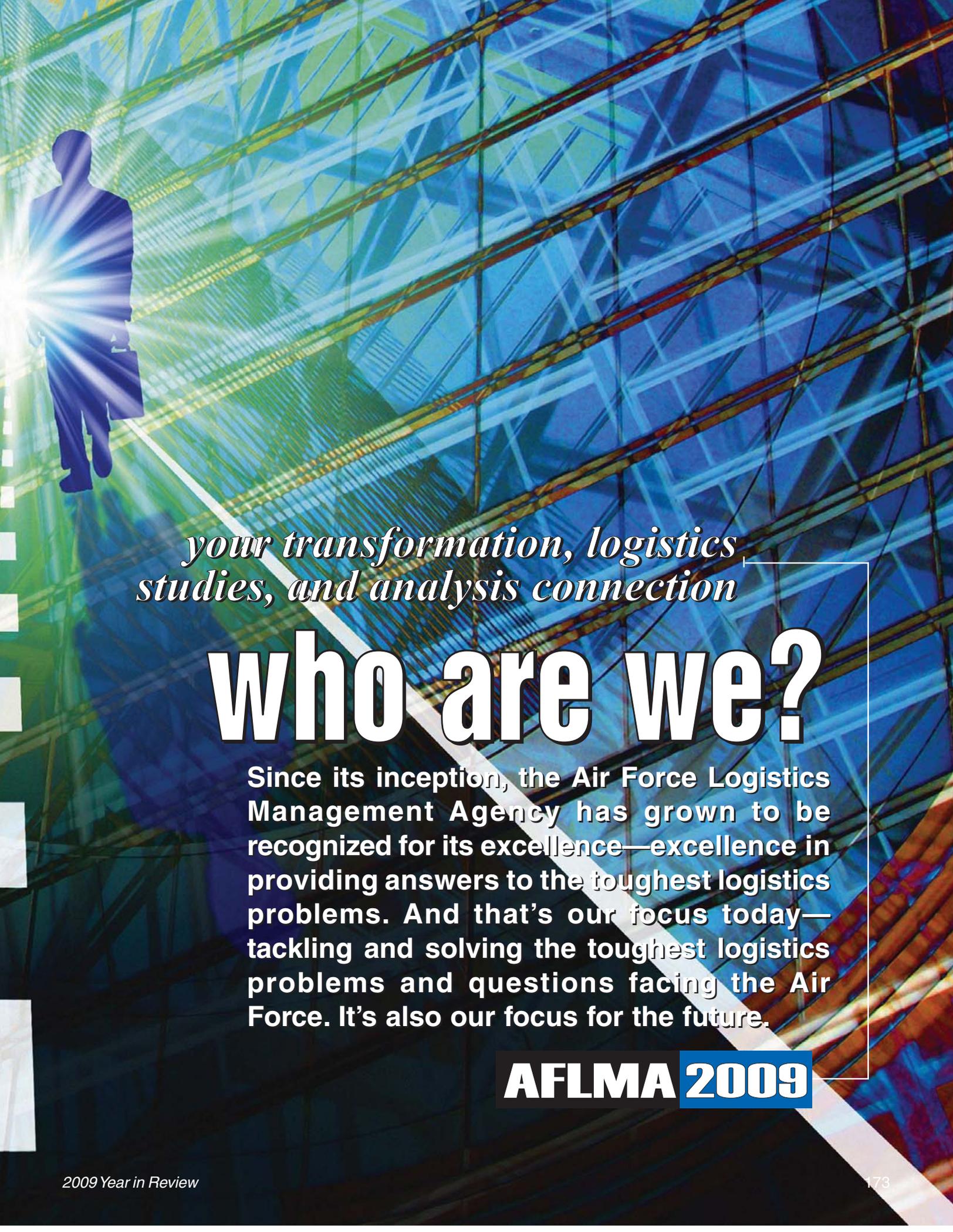
Maintenance Metrics U.S. Air Force (a completely new version will be produced in 2011). Other AFLMA publications are used as course materials in professional education settings. We have even had requests from several of our allies to use some of these materials in their professional military education programs.

We've continued our work with LMI in transforming and modernizing supply chains and with RAND in developing expeditionary airpower support concepts. The AFLMA will have a key role in shaping and implementing transformation within the Air Force Logistics community.

We've delivered on commitments to our customers, we've partnered with academia and industry, we've had high impact in shaping the support concepts of tomorrow, and the Air Force is benefiting from the synergy of our efforts. We've been on target—you can count on that continuing.

Kenneth J. Timko, Lieutenant Colonel, Deputy Director





*your transformation, logistics
studies, and analysis connection*

who are we?

Since its inception, the Air Force Logistics Management Agency has grown to be recognized for its excellence—excellence in providing answers to the toughest logistics problems. And that's our focus today—tackling and solving the toughest logistics problems and questions facing the Air Force. It's also our focus for the future.

AFLMA 2009



Introduction

The Air Force Logistics Management Agency (AFLMA) is a field operating agency of Headquarters United States Air Force located at Maxwell AFB, Gunter Annex, Alabama, and reports to the Director of Transformation (AF/A4I), under the Deputy Chief of Staff, Logistics, Installations, and Mission Support (AF/A4/7).

Mission

To sharpen agile combat support (ACS) capabilities by generating enterprise supply chain solutions, supporting logistics transformation through research, analysis, wargames, and publication of ACS literature.

The mission of the AFLMA flows directly from the Air Force mission “to fly, fight and win ... in air, space and cyberspace.” While supporting all Air Force goals, the AFLMA mission will contribute specifically to Air Force Strategic Plan goals 2) “sustain air, space, and cyberspace capabilities” and 7) “foster Air Force Smart Operations across the Total Air Force.” The AFLMA mission is also a direct reflection of the AF/A4I mission.

In accomplishing the AFLMA mission stated above, the AFLMA will fulfill *Air Force Mission Directive [MD] 33* (13 November 2002) which states:

The mission of the AFLMA is to consult, conduct studies, manage Air Force logistics wargaming participation, and develop DoD [Department of

Generating Transformational Solutions Today; Focusing the Logistics Enterprise of the Future

AFLMA 2009

who are we?

your logistics studies and analysis connection

Defense] and civilian partnerships to support the development of policy and identify the resources needed to deliver ACS across the full spectrum of operations. The AFLMA produces solutions to logistics problems and designs new and improved concepts, methods, and systems to improve overall logistics and combat capability. Also, the AFLMA publishes the *Air Force Journal of Logistics* and other publications on logistics issues.

In order to meet the logistics needs of a transforming Air Force, AFLMA's mission has expanded beyond the mission stated in MD 33 in 2002. The Air Force Logistics Board of Advisors (LBOA) has directed that, while continuing to perform the core functions described in MD 33, AFLMA will also become the

owner of the Logistics Enterprise Architecture (LogEA). As the Air Force implements various initiatives under Expeditionary Logistics for the 21st Century (eLog21), the AFLMA will ensure compliance of those initiatives with the tenets of LogEA.

The expanded mission of the AFLMA incorporates four focus areas: 1) supporting Air Force enterprise logistics transformation (as owner of the LogEA), 2) studies and analyses which generate logistics solutions, 3) support for wargames and modeling and simulation, and 4) publishing ACS literature. As the Expeditionary Combat Support System (ECSS) is developed and implemented, AFLMA will continue to transform toward its

Our goal to tackle tough Air Force logistics issues remains the cornerstone of the AFLMA. *Generating transformational solutions today; focusing the logistics enterprise of the future* conveys our strength and our commitment.

Kenneth J. Timko, Lieutenant Colonel, Deputy Director

primary future mission of supporting Air Force enterprise logistics transformation as the owner of the Air Force LogEA. During this period of development, the AFLMA will perform studies and analyses, with the primary focus being on eLog21 processes. AFLMA will generate high-quality studies, reports, and analyses designed to enhance Air Force enterprise logistics efficiency and effectiveness. Through the research and analysis missions, the AFLMA will design concepts, methods, and systems to improve Air Force-wide logistics and thus increase worldwide readiness and overall combat capability. To accomplish this portion of the mission, the AFLMA will provide decision-quality recommendations which will sharpen ACS capabilities and shape future Air Force logistics policies and processes. At the same time, through enterprise-focused research experience and specialized training, AFLMA team members will develop and hone the competencies needed to skillfully execute the mission of LogEA ownership.

The AFLMA will continue to provide logistics support for wargames. It has been the AF/A4 logistics executive agent for Air Force Title 10 wargames since 1997. In this portion of the mission, the AFLMA's primary role will be to improve logistics play and to develop and execute DCS, Logistics, Installations, and Mission Support (AF/A4) objectives in Air Force Title 10 wargames. More specifically, the mission of the Wargames and Modeling and Simulation Division will include: 1) assist AF/A4 and the Wargame Action Agency to ensure ACS logistics capabilities are accurately portrayed in wargames, 2) provide game design and modeling or simulation assistance, 3) ensure use of relevant logistics information and data in wargames, 4) observe and participate in Title 10 and other major wargames, and 5) provide pre- and post-wargame assessment, and assistance in adjudication of

Title 10 and other major wargame events. Wargames and modeling and simulation will be fully integrated with the other aspects of the AFLMA mission. AFLMA's wargame and modeling and simulation activities will serve as an instrument for testing and honing Air Force enterprise logistics concepts and processes that support eLog21 transformation. Similarly, logistics issues revealed during wargames will be considered as potential subjects for further research through AFLMA's studies mission.

The AFLMA will also continue to publish ACS literature. It will develop, prepare, produce, and publish the *Air Force Journal of Logistics*—the professional logistics publication of the Air Force. The Journal provides an open forum for presenting research, innovative thinking, and ideas and issues of interest to the Air Force and civilian logistics communities. In addition to the primary Air Force audience, the Journal will serve a secondary audience throughout the DoD and US government and a tertiary audience in industry, academia, and foreign nations. The AFLMA will also develop, prepare, produce, and publish books, monographs, and handbooks or guides to meet the needs of the Air Force logistics community at large, professional military education programs, continuing education programs, and mentoring. As with all AFLMA activities, the publishing mission will support Air Force accomplishing eLog21 initiatives. AFLMA publications will serve the change management role of communicating eLog21 transformation to the entire Air Force logistics community.

The AFLMA serves a variety of Air Force customers. From the highest echelons of the Air Staff's senior decisionmakers and the Air Force LBOA, to the warfighting major command headquarters, to logisticians in the field implementing policy decisions, the AFLMA serves each as a consumer or user of the

Agency's outputs. The products and services provided to these customers come in many forms, which include, but are not limited to, studies and analyses, guidebooks, policy and procedural recommendations, wargaming support, model or simulation creation and updates, and publications. Every product and service of the Agency will be focused on sharpening ACS capabilities as AFLMA transforms along with the Air Force enterprise.

Vision

Generating transformational solutions today; focusing the logistics enterprise of the future.

The AFLMA vision is to be an agent of change, generating Air Force enterprise solutions in order to transform and sharpen ACS for the warfighter now and into the future. As the architecture evaluator and analytical checkpoint for LogEA, the Agency expects to be the primary provider of solutions to the complex problems facing Air Force logisticians who are engaged in vital combat support. The AFLMA will be successful to the degree that its recommended solutions result in leaner, more effective and efficient logistics processes, improved delivery of resources to the warfighter, and a more economical sustainment of Air Force systems—in sum, sharpened ACS. The AFLMA will concentrate on transforming itself to provide the skill sets, competencies, capability, and capacity to execute the future mission of sustaining the Air Force supply chain process architecture.

In order to accomplish the vision, the AFLMA will capitalize on the core competencies of its members. These competencies include: 1) a highly qualified, educated, experienced, cross-functional workforce, 2) objective, in-depth, relevant analysis, 3) a rigorous internal process yielding high-quality products, and 4) strong strategic partnerships. The Agency serves a

crucial and unique service to the Air Force logistics community by objectively analyzing information in order to develop solutions which will continue to shape the Air Force logistics enterprise.

AFLMA Goals for 2010

- Target activities to improve ACS capabilities
- Develop our total force core values, professional skills, and quality of life
- Streamline internal processes and sharpen external logistics capabilities through the application of continuous process improvement principles
- Promote AFLMA as a world-class studies and analysis support center
- Develop AFLMA to accomplish supply chain process sustainment

There are many ways to measure mission success. One of them is the *count*—how much did we do, how much got done, what did we complete? A second way to measure success is *meeting our customers' needs*. That means three things: first, understanding what the problem really is; second, giving our customers a great, workable solution; and third, meeting Air Force study priorities and needs.

Introduction

The Air Force Logistics Management Agency (AFLMA) is a field operating agency of Headquarters Air Force (AF) located at Maxwell AFB, Gunter Annex, Alabama.

We serve under the direction of the Director of Transformation (AF A4I), Deputy Chief of Staff (DCS), Logistics, Installations, and Mission Support (AF A4/7). In accordance with *Air Force Mission Directive 33*, we focus on four principal missions: 1) studies and analyses which generate logistics solutions, 2) supporting Air Force enterprise logistics transformation (owner of the Logistics Enterprise Architecture [LogEA]), 3) support for wargames, and 4) publishing literature related to agile combat support (ACS). The Agency assumed the LogEA mission in March 2008. As the Air Force implements various initiatives under Expeditionary Logistics for the 21st Century (eLog21), the AFLMA will ensure

compliance of those initiatives with the overarching LogEA.

We have approximately 40 logistics researchers, analysts, other specialists, and support staffers on hand whose sole purpose is to deliver to you—our customer—the best possible analyses of logistics issues and challenges in order to improve ACS for the warfighter. This *Year in Review* will give you a summary of our activities over the past year.

The AFLMA is uniquely positioned to be a leader in logistics transformation efforts and the logistics *go to* problem solver for the US Air Force. If we get a request for assistance that we can't handle, then we will refer the requester to one of our strategic partners.

Kenneth J. Timko, Lieutenant Colonel, Deputy Director

THE RESULTS

**Generating Transformational Solutions Today;
Focusing the Logistics Enterprise of the Future**

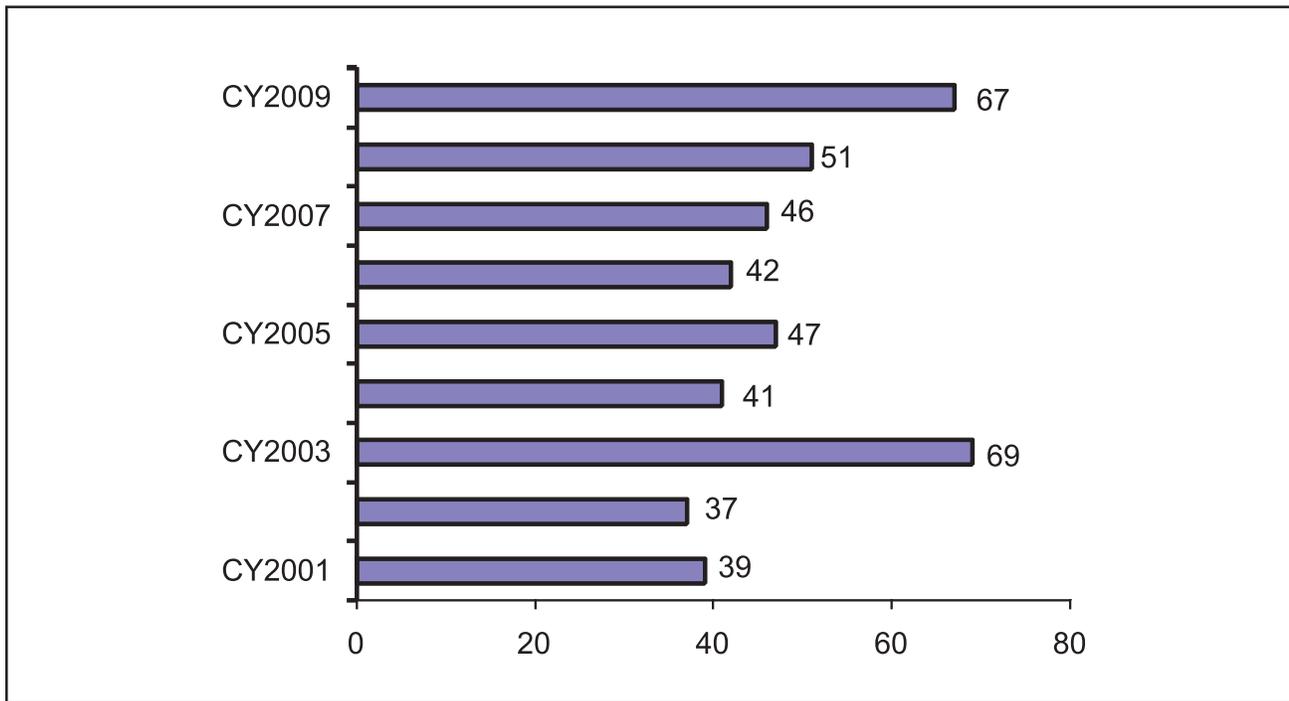


Figure 1. Completed AFLMA Studies 2001-2009

Simply stated, we want to be the *first responders* when Air Force organizations have logistics problems. We also want to make Air Force Smart Operations (AFSO21) principles a way of life both internally and externally for all of our research activities.

A Brief Overview of AFLMA Activities in 2009

In 2009, the Air Force Logistics Management Agency completed 67 studies—16 more than in 2008. Historically the Agency has completed 40 to 50 projects each year. (See Figure 1) Figure 2 stratifies AFLMA studies by project sponsor.

Of the projects completed in 2009, 55 directly supported expeditionary air power and agile combat support in some fashion, 11 supported logistics transformation, 3 supported back to basics initiatives, 4 supported nuclear weapons-related materiel studies and analyses. Twenty-eight projects were enterprise-level efforts.

The review of projects and studies completed in 2009 is organized by AFLMA mission area.

Studies and Analyses

A major charge of the AFLMA is to study and analyze Air Force logistical processes. This is accomplished through the generation of high-quality studies, reports, and analyses that are designed to enhance logistics efficiency and

effectiveness. Through these reports, the AFLMA designs concepts, methods, and systems to improve Air Force logistics and thus increase readiness and overall combat capability. To accomplish this portion of the mission, the AFLMA provides decision-quality recommendations which sharpen ACS capabilities and shape Air Force logistics policies.

A synopsis of major projects and studies completed in 2009 is provided below.

Back to Basics Handbook for LRS and APS Commanders. Not all logistics readiness squadron (LRS) and aerial port squadron (APS) commanders are fully versed in all functional areas under his or her command.

The purpose of this handbook is to provide a quick reference functional guide that highlights the most important processes and issues. It is broken down by process, similar to the current LRS and proposed APS structures. Within the handbook, a chapter is devoted to each flight found in the LRS or APS structure. The chapters provide a general overview of the mission of the flight, specific commander responsibilities, key personnel, major flight functions, forms and reports used, safety concerns, and policy references. The final product was printed in 2010.

Sponsor: HQ AMC/A4

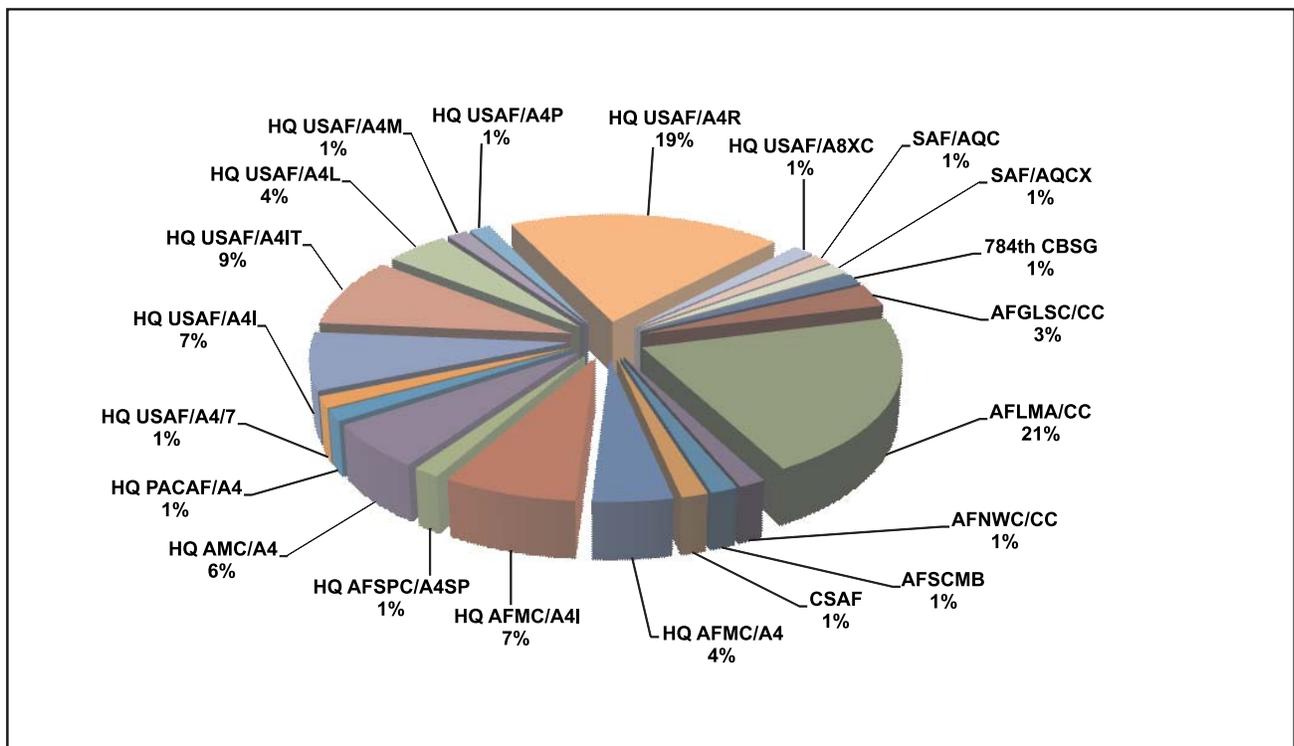


Figure 2. Completed Studies 2009

Fuels and Refueling Maintenance Skill Set Consolidation Implementation Review Phase II Study. This study analyzed the migration of refueling pumping system maintenance personnel from the vehicle maintenance career field to the fuels management career field in order to create a larger pool of deployable mechanics and enhance wartime support. The study provided an objective, third-party analysis of the merger to determine whether it had been beneficial. Prior to the release of this study, maintenance for the refueling vehicles was split between vehicle maintenance for the chassis and fuels management for the pumping system. The study demonstrated the merger actually resulted in a pool of less experienced mechanics. Based on the recommendations made in the study, maintenance for refueling vehicles reverted to vehicle maintenance within the fire truck maintenance shop.

Sponsor: HQ USAF/A4R

Contingency Contracting, A Joint Handbook for the 21st Century. This handbook and its accompanying DVD is a fingertip resource for contingency contracting officers (CCO) from all four Services (over 3,100 personnel). It updated and replaced the original handbook, *Contingency*

Contracting: A Joint Handbook, published by the AFLMA in 2008. In addition to extensive new information, it simplifies and streamlines CCO access to resources and information, thereby allowing them to more accurately and quickly perform contracting support in a wide variety of environments. New material or features contained in or associated with *Contingency Contracting, A Joint Handbook for the 21st Century* are as follows:

- Expanded chapters and extensive new information.
- New or expanded cultural awareness training, antiterrorism, and force protection modules.
- Seventy-five core competency process checklists incorporated on the DVD.
- DVD linked to more than 275 Web sites that address situations a CCO may encounter in the field.
- DVD enhanced and more than 180 additional questions added to the games. The Machery/Jeopardy game has a total of 15 categories that will randomly be selected for each game played. A Combat ACE game is now associated with each chapter. These interactive games enhance the contingency contracting learning environment.

- Public Web site created which CCOs can access when deployed or at home station

The most significant addition to the handbook, however, is a selection of 12 critical checklists in the back of the book. These checklists provide a quick decision tool for deployed CCOs.

Final printing and distribution of the handbook was completed in 2009.

Sponsor: SAF/AQC and OSD/AT&L

Maintenance Metrics U.S. Air Force. This project was an update to the original maintenance metrics handbook which was first published by the AFLMA in 2001 and subsequently reprinted five times. The updated edition of the handbook, as with its predecessor, provides maintenance managers a quick reference guide for understanding, evaluating, and using aircraft maintenance metrics. This edition of the handbook incorporates new metrics and changes requested by the Air Staff.

Sponsor: HQ USAF/A4M

Inventory Control Matrix. As a result of the nuclear weapons-related materiel (NWRM) inventory, the Air Force created a concept of operations to provide positive inventory control (PIC) for NWRM assets. Subsequently, the Supply Chain Management Board proposed a hierarchy of inventory control with PIC as the *gold standard*. This project identified inventory control measures for existing categories of supply as a first step to reducing the number of categories and standardizing inventory control measures. The project result is an as-is view that is the basis for AF/A4LE Air Force-wide inventory control strategy development.

Sponsor: HQ USAF/A4R

Other projects provided decision support for supply chain management analysis, information technology development and data management projects, and cost studies.

Logistics Transformation

To fully meet the Agency's role in transformation, the Agency was reorganized in 2008 and the Logistics Transformation Division was created. (See Figure 3) Since that time, the division has continued to mature and has established a number of critical partnerships to further transformation.

The evolution of the Logistics Transformation Division continued in 2009. The division is the lead

architecture evaluator for LogEA. In that role, it provides the compliance requirements and documentation for three distinct missions involving the Logistics Enterprise Architecture. The division ensures compliance for LogEA and DoD architecture framework requirements for operational and system architecture views for each eLog21 initiative. It also provides facilitation and has a reporting role in maintaining and updating the Systems & Services View (SV-8) for ECSS.

Examples of major efforts completed in 2009 are provided below.

LogEA Actions 2009. Work under this project supported a wide variety of efforts and activities with outside agencies.

- Evaluated the Guided Global Ammunition Control Point architecture—the architecture is the now LogEA certified
- Defined enterprise logistics governance architecture requirements for emerging logistic initiatives
- Provided expertise to the DoD Architecture Framework Planning Group concerning the enterprise resource planning government solution

Sponsor: HQ USAF/A4I

Also during 2009, the division: (1) acquired funding for an architecture modeling tool—enables standardization and (2) scoped a program objective memorandum submission for LogEA proliferation—discussed and defined new organizational goals to support future Air Force logistics architecture requirements.

Wargames and Modeling and Simulation

Today, the AFLMA is on the leading edge of logistics transformation as it assists with the examination of evolving ACS concepts and supports doctrine development. In today's ever increasing Joint environment, the AFLMA does not do this in isolation. The Agency relies on support from a growing team—major command staffs, Air Force Institute of Technology, Defense Logistics Agency, sister Services, and contractors.

Of growing importance are modeling and simulation activities. In 2009 the Agency played a major role in supporting the Air Force initiative to improve the use and management of modeling and simulation. As a key advisor to AF/A4I-led

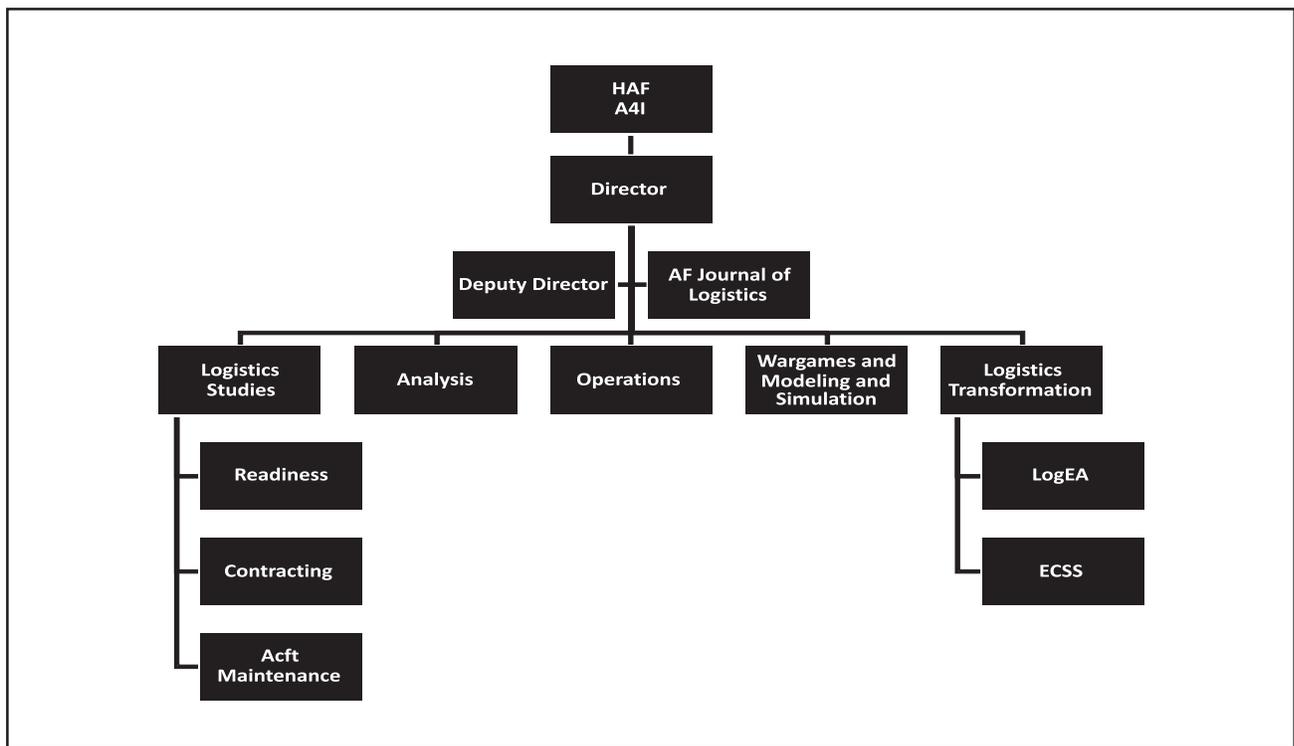


Figure 3. Current AFLMA Organizational Structure

logistics modeling and simulation efforts, the AFLMA assisted with the continued development of strategic and implementation plans to guide the integration and application of these tools.

Wargames and Exercises

In 2009, the Agency supported six major wargames or exercises.

Future Capabilities Wargame 2009. The Future Capabilities Wargame, is set in the long-term and occurs biennially in the off year from Unified Engagement. It *red-teams* the existing Air Force strategic plan, vision, and force structure and explores alternative futures and force structure to support strategic planning inputs. Its outputs are used to impact strategic planning, experimentation, concept development, concepts of operations, future force structure investment streams, and the Air Force vision.

Sponsor: HQ USAF/A8XC

Joint Land Air and Sea Simulation (JLASS). The JLASS wargame is a multilateral, dynamic, computer-assisted, seminar-based strategic and operational wargame conducted at the field army, task force and tactical air force level, and above. Service school participants are divided into red and blue teams. These teams assume the role of a combined command and subordinate staffs. The

blue team is composed of Air War College (AWC), Army War College (USAWC), Marine Corps War College, College of Navy Warfare, and Industrial College of the Armed Forces students, while the Air War College acts as the Southwest Asia area of responsibility (AOR) red team staff. Red teams for United States Pacific Command and United State European Command AORs are comprised of senior-level college faculty members and intelligence personnel. Participants are introduced to a crisis scenario that involves regional conflicts 10 years in the future. Their mission is to promote the policies and objectives of their assigned team.

Sponsor: AFLMA/CC

Solo Challenge (SC). SC is the capstone wargame of the AWC academic year and includes the themes of leadership, doctrine, strategy, political and military affairs, Joint and Combined warfare, air and space power, and technology. It provides AWC students with the opportunity to demonstrate their ability to translate national-level decisions into operational-level action. During SC, participants are forced to manage ongoing global crises and a homeland security scenario, while confronted with projected limits on force structure and overseas basing. This wargame is conducted at the unclassified level. The game supports two

general objectives: (1) Analyze emerging regional conflicts in terms of US national security interests and (2) Synthesize national interests and objectives to produce a reasonable, resource sustainable, operational strategy to protect and achieve those interests and objectives.

Sponsor: AFLMA/CC

United States Army War College Strategic Decision Making Exercise (SDME) 2009. SDME serves as the capstone exercise for USAWC students. SDME is a six-day, interactive strategic-level, political-military exercise based in 2021, that gives students the opportunity to integrate and apply the knowledge they acquired during the academic year to a real-life situation. The exercise brings together more than 600 personnel from the USAWC and subject matter experts from outside the school to serve as controllers, observer controllers, or exercise facilitators. Personnel participating in the exercise come from numerous government organizations, including the Department of State, Joint Staff, Federal Emergency Management Agency, United States Central Command, Federal Bureau of Investigation, and the Central Intelligence Agency. Each year more than 50 distinguished visitors participate as role-players in the exercise—most are leaders from the military, diplomatic, interagency, business, and education communities.

Sponsor: AFLMA/CC

Unified Engagement (UE) 2010. Unified Engagement is the Air Forces's near- to mid-term Title 10 wargame, and consists of a series of supporting events, workshops, and mini-wargames over a two-year period prior to a Capstone event. The purpose of UE is to enhance Joint and Combined warfighting capabilities and relationships; prevent or mitigate operational surprise; explore concept, capability, and capacity shortfalls; build and nurture partnerships and alliances worldwide; and develop officers for operational and strategic leadership.

Sponsor: Chief of Staff of the Air Force

Future Mobility 2009 (FUMO). FUMO 2009 was the first of what will become a biennial wargame event sponsored by Air Mobility Command (AMC) to refine scenario development for the Futures Title 10 wargame. The intent of the inaugural FUMO was to identify risks and potential mitigation strategies for the expected threat environment in the year 2028, with special attention given to the *Joint Chiefs of Staff Top Ten Warfighter Challenges*. Additionally, the information derived from this event was captured to support AMC leadership

when making research, development, test, and evaluation decisions by highlighting future air mobility requirements and warfighting capabilities.

Sponsor: AFLMA/CC

Modeling and Simulation

Logistics Modeling and Simulation Integrated Product Team. As part of the M&S transformation, the Air Force logistics community developed a Logistics M&S Integrated Product Team (IPT) to enable and manage the development of the logistics M&S framework and logistics focused M&S solutions. The IPT will enable an integrated, enterprise approach for utilizing live, virtual, and constructive tools supporting logistics processes. The intended outcomes are logistics M&S solutions that are accessible to the logistics community at large and compliant with overarching Air Force and DoD M&S goals—commonality, interoperability, and visibility. The IPT is composed of five sub-IPTs. AFLMA/LGX is the co-lead of the Exercises and Wargames Sub-IPT with AF/A4/7Z.

The Exercise, Wargame and Experiment (EXWAREX) M&S Sub-IPT seeks to integrate Air Force logistics concepts development, operational logistics decision support, and logistics analysis by identifying and using M&S techniques that emulate the full spectrum of Air Force logistics capabilities into EXWAREX events. EXWAREX M&S will provide the ability to robustly examine real-time and near-, mid-, and far-term logistics impacts on operational concepts. Logistics M&S will greatly improve the logisticians' ability to develop and examine logistics concepts needed to support the operational mission. A comprehensive EXWAREX M&S program will greatly improve the fidelity of logistics capabilities presented during EXWAREX events and provide the operational warfighter with an accurate assessment of logistics support capabilities.

Major M&S milestones completed in 2009 are as follows:

- As-Is Process Assessment
 - Documented the existing process for implementing a solution
 - Identified the different individuals and entities that enable the existing process
 - Documented the strengths and weaknesses of the existing process
 - Identified opportunities to improve the existing process
- Identify Future State Capabilities
 - Defined starting point—goals, objectives, and capabilities identified in the *M&S Strategic Plan*

- Prioritized all identified capabilities by mission criticality and ease of implementation

Sponsor: AFLMA/CC

Publications

The fourth mission focus area for the AFLMA is publishing ACS-related literature.

Journal of Logistics. Four editions of the peer-reviewed *Air Force Journal of Logistics* were produced in 2009. Of note during 2009 was production of the first ever *Journal of Logistics Annual*.

These publications reached in excess of 12,000 readers each quarter.

During 2009 the Journal Web site often had more than 100,000 hits per quarter.

Sponsor: HQ USAF/A4/7 and AFLMA/CC

Books, Monographs, Handbooks, and Promotional Literature. In 2009, without question, the most significant publication was *Contingency Contracting: A Joint Handbook for the 21st Century*. This pocket-sized handbook and its accompanying DVD directly facilitates the training and support of all acquisition professionals from all branches of Service. More than 10,000 copies were produced to support the DoD requirement.

Other major publishing projects for 2009 were *Back to Basics: A Handbook for Logistics Readiness and Aerial Port Squadron Commanders, Maintenance Metrics U.S. Air Force, Thinking About Logistics 2009*, and *AFLMA Year in Review 2008*.

The Journal staff also managed the design, development, and production of the new AFLMA conference booth and six other associated Agency or Journal promotional publications.

Sponsor: AFLMA/CC

While produced in 2007 and 2008, several books, monographs, and reference works continued to be best sellers in 2009—*C-5 TNMCM Study II; AEF Fuels Management Pocket Guide, Third Edition; and Quotes for the Air Force Logistician* (box set).

Special Mention

During 2009, at any given time approximately 15 percent of the AFLMA staff was deployed. A total of 79 man months were lost to deployments.

Conclusion

If you can't find the logistics knowledge you need in our publications or on our Web site, let us know. We'll work with you to find that knowledge.

2009 Completed Projects

Contracting

- LC200821304, Common Support Equipment Contracts
- LC200824902, Performance-Based Service Contracting Statement of Work Writing Illustration Guide
- LC200926401, The Effective Management of Air Force Contingency Contracting Manpower: Phase 1 Reachback Cost Analysis

Transformation

- LI200919701, Nonprogrammed Foreign Military Sales Orders
- LI200920201, Logistics Enterprise Architecture Actions 2009
- LI200926600, 649 MUNS Shipping Process Air Force Smart Operations for the 21st Century Event

Maintenance

- LM200724906, Aircrew/Aircraft Tasking System Maintenance Capability Study
- LM200803100, Maintenance Metrics Handbook
- LM200835804, Expeditionary Combat Support System Common Language for Organizational Change Management
- LM200835805, Expeditionary Combat Support System Perfect Order Fulfillment Key Performance Parameters for Operation Test & Evaluation
- LM200835808, Air Force Flying Hour Information Technology Systems and Potential ECSS Interfaces
- LM200835809, Expeditionary Combat Support System Capabilities Document Review
- LM200926400, Acquire Access to Maintenance Data for Air Force Logistics Management Agency Research Support

Readiness

- LR200725700, Readiness-Based Leveling
Version Testing and Validation
- LR200809403, Review of F-22 Spares
Forecasting Techniques—Part 6 Strategic
Repair Requirements Model
- LR200815804, Equipment Authorization
Fluctuation
- LR200815805, Enterprise Management of
Equipment Commodities
- LR200816900, Contingency Consumable Item
Support
- LR200819700, Contingency High Priority
Mission Support Kit for KC-135s at Incirlik Air
Base
- LR200821302, Nuclear Weapons-Related
Materiel Enterprise Inventory Results
- LR200824601, Evaluate Cost Effectiveness for
75 Months Retention
- LR200827500, Inventory of Weapons in the
Area of Responsibility
- LR200827501, Review/Update of Logistics
Readiness Squadron Documentation
- LR200827502, Back to Basics Logistics
Readiness Squadron and Aerial Port
Commander Handbook
- LR200827600, Logistics Readiness Metrics
- LR200834300, Contingency High Priority
Mission Support Kit Review 2008
- LR200835810, Quantify Extent of MICAPs
Across the Supply Chain
- LR200900700, Fuels and Refueling
Maintenance Skill Set Consolidation
Implementation Review
- LR200902600, Contingency High Priority
Mission Support Kit Reviews in 2009
- LR200903400, Impact of Using Joint Chiefs of
Staff Project Codes at Guam
- LR200903401, Reducing Volatility in
Requirements and Levels
- LR200904800, Reset Analysis
- LR200909803, Working Capital Fund for
Second Destination Transportation
- LR200910000, Stockage Effectiveness by
Weapon System
- LR200910003, Equipment Unsatisfactory
Substitutes Requirements Analysis
- LR200911800, Fuels and Refueling
Maintenance Skill Set Consolidation
Implementation Review Phase
- LR200912800, Equipment Requirements
Review Board
- LR200912802, Equipment Agile Combat
Supply Groupings for LIMS-EV
- LR200912812, Joint Chiefs of Staff Project
Code Policy for Equipment
- LR200914901, Inventory Control Matrix
- LR200917000, Readiness-Based Leveling
Quarterly Computation Analysis Support—
Fourth Quarter (2008)
- LR200917001, Readiness-Based Leveling
Quarterly Computation Analysis Support—
First Quarter (2009)
- LR200917002, Readiness-Based Leveling
Quarterly Computation Analysis Support—
Second Quarter (2009)
- LR200917300, Establishing Air Force *Pseudo-
Joint Chiefs of Staff* Project Codes for Quick
Response Taskings
- LR200921800, Information Request AFLSW
(2009)
- LR200921900, Readiness-Based Leveling
Quarterly Computation Analysis Support—
Third Quarter (2009)
- LR200928701, Computing In-Place Readiness
Spares Packages Off-Set Levels for Fiscal
Year 2011 Kits

Wargames

- LX200726206, Unified Engagement 2008
- LX200730401, War Readiness Material
Afloat—Phase 1 Feasibility

LX200908400, United States Army War College Strategic Decision Making Exercise 2009

LX200908401, Joint Land Air and Sea Simulation

LX200908500, Air Force Logistics Modeling and Simulation IPT/ EXWAREX Sub-IPT Co-Lead Activities (Fourth Quarter 2009)

LX200909800, Solo Challenge

LX200909801, Air Force Modeling and Simulation Conference

LX200909802, FUMO Planning Conference

LX200913900, Air Force Supply Chain System Vulnerabilities

LX200913901, Logistics Modeling and Simulation Strategic Plan

LX200932000, Future Capabilities Wargame 2009

LX201000600, Unified Engagement 2010 (UE10) Fourth Quarter 2009 Update

Analysis

LY200719000, Pacific Air Forces War Reserve Material Fuel Tanks and Pylons

LY200824700, Acquisition Logistician Modeling and Simulation

LY200835806, Expeditionary Combat Support System Lead Times Study

LY200835807, Support Assets Management Potential within Expeditionary Combat Support System

LY200905500, Contracting-Finance Merger Survey Analysis

LY200917401, Air Force Comprehensive Assessment of Nuclear Sustainment II

LY200917402, Analysis Support to AF/A10 Supporting the Air Force Nuclear Task Force 2009

LY200927800, Nuclear Weapons-Related Materiel End-to-End Assessment Support

results at a glance

Total 2009 Completed Projects

- **67 Studies**

Completed Expeditionary Airpower and Agile Combat Support Studies and Research

2009 Completed Projects

- LC200821304, Common Support Equipment Contracts
- LC200926401, The Effective Management of Air Force Contingency Contracting Manpower: Phase 1 Reachback Cost Analysis
- LI200920201, Logistics Enterprise Architecture Actions 2009
- LM200724906, Aircrew/Aircraft Tasking System Maintenance Capability Study
- LM200803100, Maintenance Metrics Handbook
- LM200835804, Expeditionary Combat Support System Common Language for Organizational Change Management
- LM200835805, Expeditionary Combat Support System Perfect Order Fulfillment Key Performance Parameters for Operation Test & Evaluation
- LM200835808, Air Force Flying Hour Information Technology Systems and Potential ECSS Interfaces
- LM200835809, Expeditionary Combat Support System Capabilities Document Review
- LM200926400, Acquire Access to Maintenance Data for Air Force Logistics Management Agency Research Support
- LR200725700, Readiness-Based Leveling Version Testing and Validation
- LR200809403, Review of F-22 Spares Forecasting Techniques—Part 6 Strategic Repair Requirements Model
- LR200815804, Equipment Authorization Fluctuation
- LR200815805, Enterprise Management of Equipment Commodities

- LR200816900, Contingency Consumable Item Support
- LR200819700, Contingency High Priority Mission Support Kit for KC-135s at Incirlik Air Base
- LR200824601, Evaluate Cost Effectiveness for 75 Months Retention
- LR200827500, Inventory of Weapons in the Area of Responsibility
- LR200827501, Review/Update of Logistics Readiness Squadron Documentation
- LR200827502, Back to Basics Logistics Readiness Squadron and Aerial Port Commander Handbook
- LR200827600, Logistics Readiness Metrics
- LR200834300, Contingency High Priority Mission Support Kit Review 2008
- LR200835810, Quantify Extent of MICAPs Across the Supply Chain
- LR200900700, Fuels and Refueling Maintenance Skill Set Consolidation Implementation Review
- LR200902600, Contingency High Priority Mission Support Kit Reviews in 2009
- LR200903401, Reducing Volatility in Requirements and Levels
- LR200904800, Reset Analysis
- LR200909803, Working Capital Fund for Second Destination Transportation
- LR200910000, Stockage Effectiveness by Weapon System
- LR200910003, Equipment Unsatisfactory Substitutes Requirements Analysis
- LR200911800, Fuels and Refueling Maintenance Skill Set Consolidation Implementation Review Phase II
- LR200912800, Equipment Requirements Review Board
- LR200912802, Equipment Agile Combat Supply Groupings for LIMS-EV
- LR200914901, Inventory Control Matrix
- LR200917000, Readiness-Based Leveling Quarterly Computation Analysis Support—Fourth Quarter (2008)
- LR200917001, Readiness-Based Leveling Quarterly Computation Analysis Support—First Quarter (2009)
- LR200917002, Readiness-Based Leveling Quarterly Computation Analysis Support—Second Quarter (2009)
- LR200917300, Establishing Air Force *Pseudo-Joint Chiefs of Staff* Project Codes for Quick Response Taskings
- LR200921900, Readiness-Based Leveling Quarterly Computation Analysis Support—Third Quarter (2009)
- LR200928701, Computing In-Place Readiness Spares Packages Off-Set Levels for Fiscal Year 2011 Kits
- LX200726206, Unified Engagement 2008
- LX200730401, War Readiness Material Afloat—Phase 1 Feasibility
- LX200908401, Joint Land Air and Sea Simulation
- LX200909800, Solo Challenge
- LX200913900, Air Force Supply Chain System Vulnerabilities
- LX200913901, Logistics Modeling and Simulation Strategic Plan
- LX200932000, Future Capabilities Wargame 2009
- LX201000600, Unified Engagement 2010 (UE10) Fourth Quarter 2009 Update
- LY200719000, Pacific Air Forces War Reserve Material Fuel Tanks, and Pylons
- LY200835806, Expeditionary Combat Support System Lead Times Study
- LY200835807, Support Assets Management Potential within Expeditionary Combat Support System

Major Publishing Projects

Contingency Contracting: A Joint Handbook for the 21st Century

Maintenance Metrics U.S. Air Force

Back to Basics: A Handbook for Logistics Readiness Squadron and Aerial Port Commanders

Thinking About Logistics 2009

Cumulative Index: Air Force Journal of Logistics, Ninth Edition

Information for Contributors: Air Force Journal of Logistics

Information Book: Air Force Journal of Logistics

AFLMA Advertising Material

Air Force Journal of Logistics—four editions

Agency Folder and Brochure

Strategic Plan: AFLMA

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Agency Booth and Display



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studies.



AFLMA
Your Logistics Studies and Analysis Connection

Partnerships

Partnering, partnerships, strategic partnerships—those are some interesting words. You’ve probably heard them bantered about frequently during the last few years. Likewise, you’ve probably seen a variety of briefs, books, pamphlets, or handouts where organizations told you about their partnerships.

Have you ever found yourself thinking *yeah, right?* Or saying *all eyewash?* Simply renaming a traditional relationship with another organization does not make a strategic partnership. Merely identifying our daily efforts with another Air Force organization as *teaming up* is not our approach. Rather, we recognize partnerships as a needed tool to make things such as transformation, agile combat support (ACS), and expeditionary airpower a reality.

We use partnerships to give us the capabilities we don’t have, and we use them to be able to do—or do better—some of the things listed below.

- Finding those private sector practices that benefit Air Force logistics
- Finding ways to improve resource management
- Integrating new or emerging technology
- Making Air Force logistics streamlined and more responsive
- Improving Air Force logistics modeling and simulation



Our strategic partnerships include three of the most well-known research corporations: RAND, ICF International, and the Logistics Management Institute (LMI). These partnerships are well-established and growing. We're working with RAND on a variety of ACS expeditionary airpower issues and problems. Our efforts with LMI are making Air Force supply systems leaner and more responsive. Our partnership with ICF International will improve wargaming and logistics modeling and simulation support. This partnership was essential to our support of Global Engagement, Unified Engagement, and Joint Expeditionary Force Experiment. It will be just as valuable as we design the logistics play for future exercises and wargames.

Look into your crystal ball. What do you see? Do you see change? We think we do. We think we see an increased tempo to the kind of change we've seen the last 10 years: the Secretary of Defense-directed sweeping program to reform the business of the Department of Defense; defense reform initiatives that mandated adoption of business practices used by American industry to become leaner, more flexible, and more competitive; the National Military Strategy; Global Engagement; *Joint Vision 2010 and 2020*; agile combat support; and transformation. Our partnerships help us respond to change, and perhaps more important, they help us anticipate change.

Major Strategic Partners

Expeditionary Airpower Studies

RAND

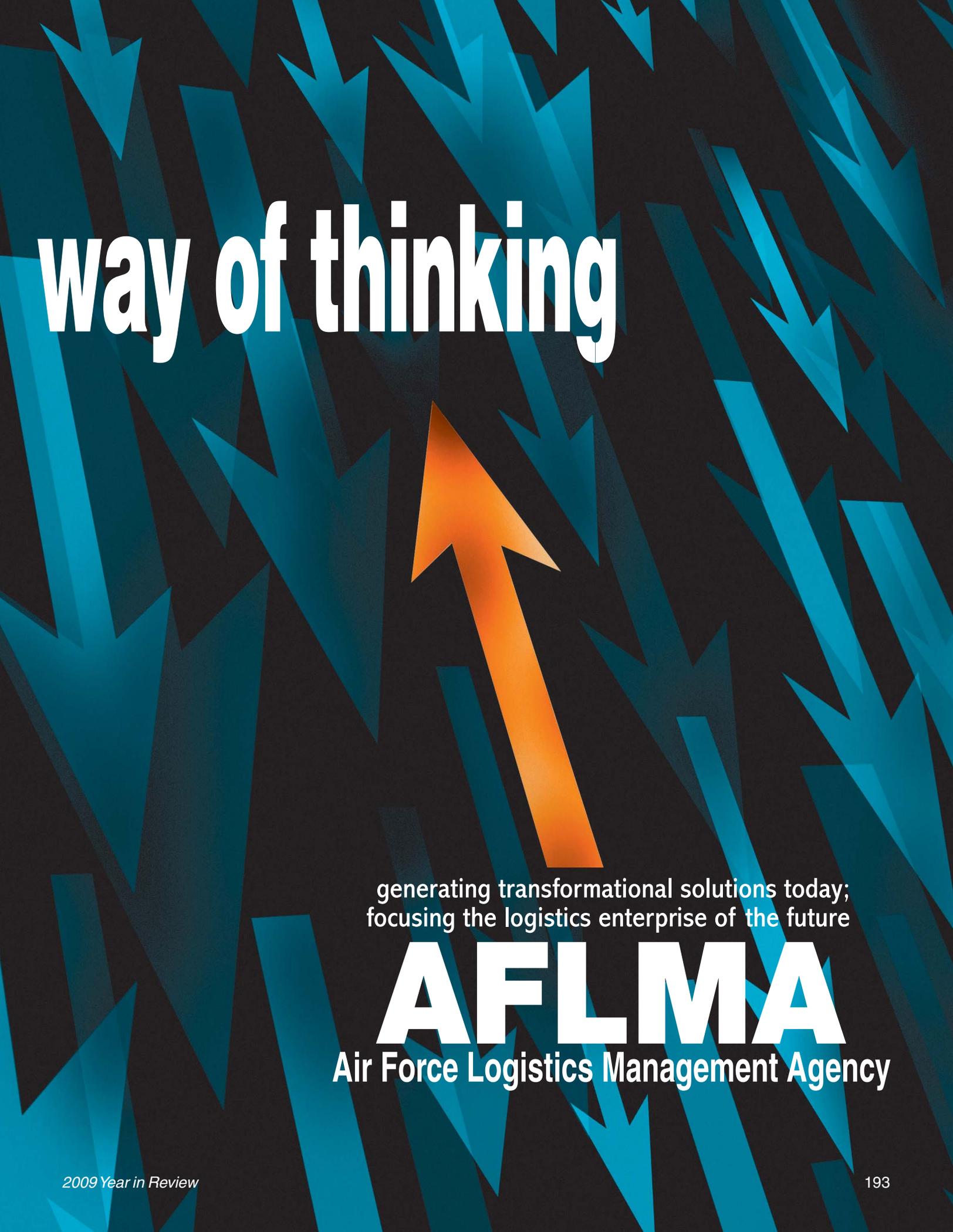
Wargames and Exercises

ICF International

Inventory and Supply Chain Management

Logistics Management Institute

A different



way of thinking

generating transformational solutions today;
focusing the logistics enterprise of the future

AFLMA
Air Force Logistics Management Agency

AFLMA 2009





We use a broad range of functional, analytical, and scientific expertise to produce innovative problem solutions and design new or improved concepts, methods, systems, or policies that improve peacetime readiness and build war-winning logistics capabilities. Delivering on what we promise makes us the study and analysis agency of choice for command and staff organizations throughout the Air Force.

What you need
Answers
When you need it

Anyone can submit a proposed project, problem, or area for study to the AFLMA, but it must be channeled through the appropriate command director of logistics (A4) or one of the Air Staff directors. Before a study or research effort can be started, it must be sponsored by a command A4 or Air Staff director.

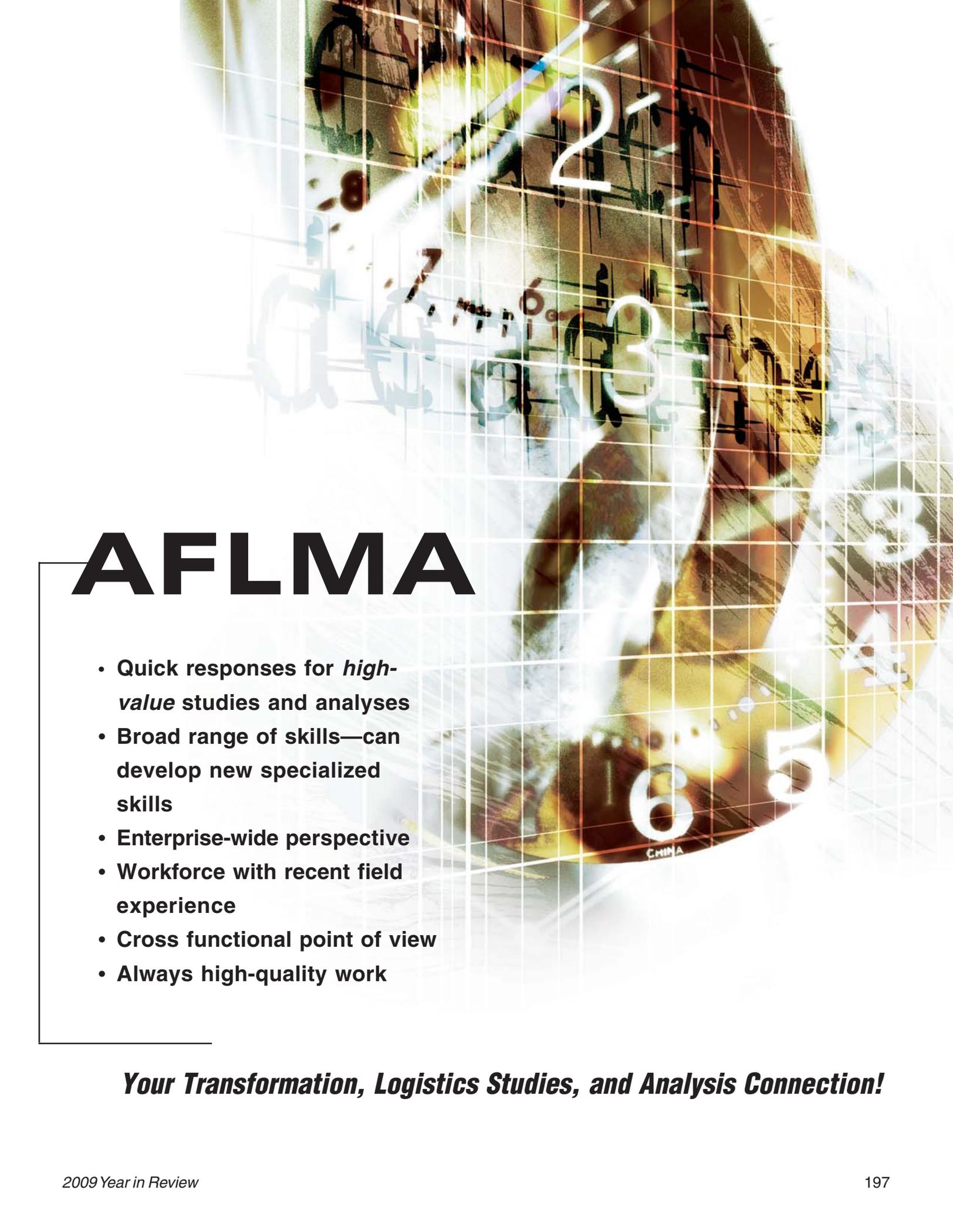
You've just had your fifth call in the last month about why the wings can't get spare parts for the *zamboni loader* (the zamboni loader is used to move *hardened phasetrons*, and phasetrons are no good if you can't move them). Your boss is screaming, his boss is screaming, the wing commanders are screaming, the major command commander now *knows you personally*, and to make matters worse, your dog even gives you dirty looks when you come home. You've checked with your operational analysis folks and some of the operational analysis folks in the wings, and no one has any answers. During your last call, the chief of analysis mentioned something called the AFLMA. After you hang up, you find yourself wondering: What's an AFLMA? How do I get the AFLMA to take on this problem? How much will it cost? How long will they take? What do they produce?

First of all, the AFLMA—Air Force Logistics Management Agency—is located at Maxwell AFB, Gunter Annex, Alabama. We're a logistics problem-solving agency. Within the Agency, we have three product divisions: Logistics Studies, Logistics Transformation, and Logistics Wargames, along with the Business Operations and Logistics Analysis divisions. The Logistics Analysis Division provides state-of-the-art and leading-edge analysis and modeling and simulation capabilities.

Anyone can submit a proposed project, problem, or area for study to the AFLMA, but it must be channeled through the appropriate

command director of logistics A4 or Air Staff director. Before a study or research effort can be started, it must be sponsored by a command A4 or Air Staff director. Upon receipt, the proposed study undergoes an extensive preliminary analysis and is submitted to the Director, AFLMA for approval. If we can't accomplish the project, we'll suggest other agencies that may be better suited for the task. When a project is accepted for study, one of our project managers assembles a cross-functional team to study the problem. Together, the functional experts and analysts ensure project results are sound, logical, and practical. Additionally, a multidisciplinary approach helps prevent functional suboptimization. We don't want a proposed solution to a maintenance problem to create supply or transportation problems. As part of the project effort, we regularly update the organization or activity that proposed the study, along with the project sponsor. When the project is completed, the Agency provides the project sponsor with a detailed report that outlines the problem, provides a solution or solutions, and makes specific recommendations. The sponsor is responsible for implementing the solution or recommendations. All our services are free to Air Force organizations.

We produce a variety of products, including process improvement studies, consulting studies, software prototypes, computer models, policy evaluations, handbooks or guides, and CD-ROM-based materials. Study length varies with each project.



AFLMA

- Quick responses for *high-value* studies and analyses
- Broad range of skills—can develop new specialized skills
- Enterprise-wide perspective
- Workforce with recent field experience
- Cross functional point of view
- Always high-quality work

Your Transformation, Logistics Studies, and Analysis Connection!



Major Anthony Antoline, AFLMA

On the Hilltop

What can be said about timing, momentum, the perfect storm, or any other euphemism you care to use when talking about a team of individuals coming together to make the mission happen? Take a maintainer, two munitions troops, and a scientist—and no, it is not the start of a joke—it is the beginning of a team. The Air Force Logistics Management Agency (AFLMA) has a mission centered on logistics processes and the information and data associated with those processes. The Logistics Enterprise Architecture (LogEA) depicts how the Air Force performs transformational logistics. The Expeditionary Logistics for the 21st Century (eLog21) initiatives are documenting how the Air Force conducts business, as well as changes to current business processes that need to occur in order to focus on the enterprise. The AFLMA is now the owner of LogEA and is responsible for evaluating the products produced by the eLog21 initiatives, ensuring they add to the analytical capability of the LogEA model. After two years of working on architecture endeavors the Agency is poised to start providing leadership critical information on how the Air Force performs logistics. This is largely due to the aforementioned team, who will soon be able to perform analysis that brings the vision set by Director of Transformation, Mr Grover Dunn (A4I), to bear on logistics issues. The Agency has made significant progress in bringing this capability forward. The AFLMA/LGI team has built up potential energy, now we just have to push the rock over the hill.



Logistics Transformation

2009

Introduction

How many meetings are held in a week to keep leadership informed as well as receive guidance on how to proceed? Wouldn't it be great if those meetings were condensed into one quarterly meeting? This would facilitate leadership and the workforce in getting back to the business of making the mission happen. Within the logistics community this thought has come to fruition. The Enterprise Logistics Governance (ELG) is a structure designed to facilitate decisionmaking within the logistics domain. The vision for the ELG is shown in Table 1. This structure was created to consolidate decisionmaking bodies and focus on the enterprise, rather than functional alignment.

Transformation is a tough endeavor that spans lines of authority and funding streams. Logistics adds even more cross-functional variables to that situation. Now try asking everyone that a transformation effort may impact for permission to proceed with an effort. Simply put, the ELG will consolidate the transformation efforts for which a dedicated group can agree on a way forward. The ELG will enable leadership to govern and direct enterprise logistics processes which are represented in Figure 1.

- Validate alignment of Air Force logistics strategy, including Expeditionary Logistics for the 21st Century

(eLog21), with Department of Defense (DoD) and Air Force priorities

- Maintain the Logistics Enterprise Architecture (LogEA) so as to be consistent with Air Force logistics strategy
- Oversee the effectiveness of logistics processes and policies to enable optimal enterprise performance—monitor compliance
- Provide timely and responsive issue resolution
- Ensure alignment of Air Force logistics strategy with policy per the Integrated Life Cycle Management Policy Review Board process
- Ensure timely, clear, and consistent communication of logistics enterprise strategies, initiatives, and results to logisticians and other stakeholders
- Interface with external organizations or structures governing processes that impact enterprise logistics
- Approve, prioritize, and oversee enterprise-level initiatives, efforts, or programs including eLog21 initiatives

ELG Objectives

The ELG will be composed of three tiers. The concept follows the tactical, operation,

strategic construct. The logistics working group (LWG) will be operating on the front line. This tier will primarily be composed of individuals serving at the colonel (O-6) level. The operational level is the logistics board (LB), which will be composed of major command logistics (MAJCOM A4s), Headquarters Air Force Logistics (AF/A4) leadership, and center commanders. The final level will be the logistics council (LC), made up of three- and four-star generals and their equivalents. It will focus on strategic integration and respond to issues that require MAJCOM coordination beyond that of the logistics community.

The meeting cadence is set so as to immediately follow the CORONA conferences. This permits logistics leadership to adjust efforts based upon the goals set by top Air Force leadership. The ELG provides a forum for Air Force

process owners and process operators to coordinate and integrate changes to policies, processes, systems, and training. The ELG provides an opportunity to better focus, prioritize, and integrate the decisionmaking

Past	Future
DoD/Joint Strategy	DoD/Joint Strategy
AF Strat Plan/CONOPs	AF Strat Plan/CONOPs
No Log Strategy	Logistics Strategy/Architecture
LBOA + Many GOSGs	Integrated Governance
Multitude Disconnected MAJCOM & Functional Initiatives (PowerPoint)	Fewer Cross Functional Initiatives Aligned to Architecture (Project)
Functional Policy	Integrated Policy
Functional Systems	Integrated Systems
Functional Training	Functional Training

Table 1. Enterprise Logistics Governance Vision

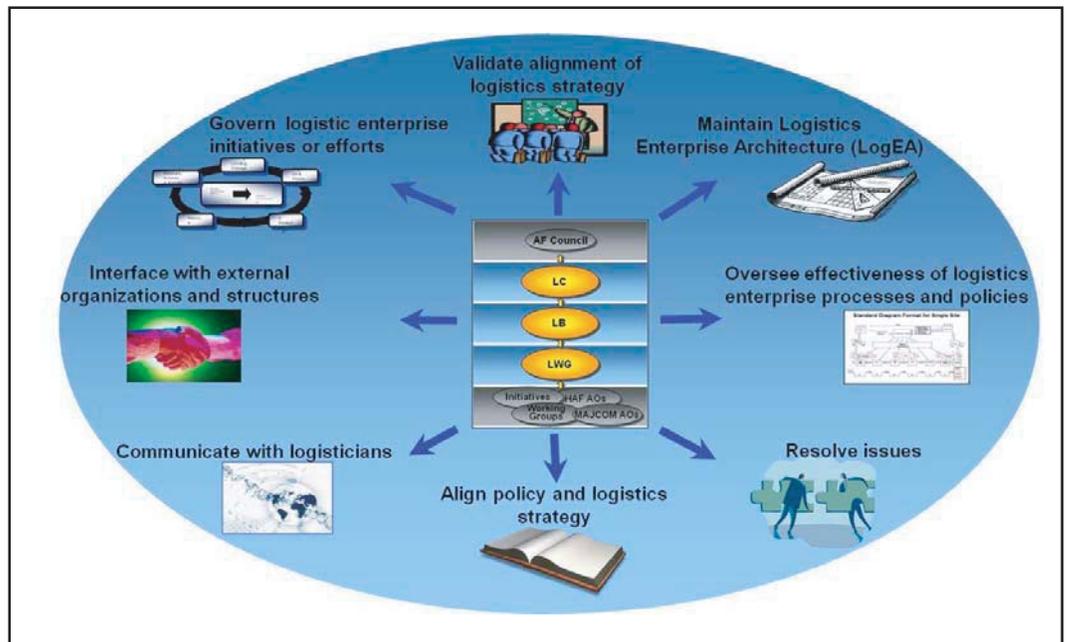


Figure 1. Governing and Directing Enterprise Logistics Processes



Logistics Transformation

process. Just as most policy, process, systems, and training decisions today are made well below the MAJCOM commander level, major decisions, such as comprehensive structural or organizational changes, will be referred to the appropriate level of Air Force leadership above the ELG. This could include the Air Force corporate structure, the Air Force chief management officer, the Air Force Chief of Staff, the Secretary of the Air Force, and the MAJCOM commanders.

Upon implementation, the ELG will assume the responsibilities of select governance bodies. It will assume the functions of the Logistics Board of Advisors and oversee existing eLog21 initiatives. It will become the process owner for Logistics Enterprise Architecture compliance, as well as oversee other initiatives the LB deems appropriate. The ELG provides an environment for integration of the concerns and issues of the communities served by the Air Force Maintenance Advisory Group and Air Force Logistics Readiness Board. The LWG includes Headquarters Air Force representatives.

The work of governance and developing strategic direction, overseeing progress, providing guidance and recommendations, and making decisions, is some of the most critical work leaders perform. Most governance is done in multiple and often overlapping and nonintegrated structures, using ad hoc processes that lack standardization. The results are outputs—guidance, recommendations, and decisions—that frequently are

based on insufficient or uncoordinated information and drive unnecessary rework. The nature of leaders' jobs requires them to be problem solvers. Without coming together to discuss how the solutions effect one another those solutions tend to be egocentric. This is to be expected, but if care is not taken the solutions have the potential to build walls. The fault does not lie in the members of the governing bodies, but in the stovepiped structures and lack of streamlined standard work processes.

The ELG structure described previously is process-based using Air Force Smart Operations for the 21st Century principles and tools. It maximizes the effective use of board members time by reducing the number of boards required to govern logistics processes and initiatives, and by providing a logical lean process to facilitate the work of the boards. The ELG process drives alignment of actions across Air Force logistics with regard to policy, process, systems, and training. At the heart of this process is the creation of standard packages of information that provide board members critical information tailored to

the activities that occur in the meetings (decisions, recommendations, oversight). The standard packages the board members will review during meetings are designed to elicit actions and outputs, document decisions, and then drive execution of decisions via the appropriate authority. Standardizing both information and the formats in which information is presented adds value to the time and effort of all involved. This will reduce *PowerPoint engineering*,

which can lack critical data to facilitate decisions. The goal is to put enough information in front of the decisionmaking body to eliminate being directed to perform further exploration to assure leadership the necessary research has been done. The creation of this structure and elimination of other sometimes redundant bodies will drive Air Force Logistics transformation for the future.

Knowledge - Technology - Innovation

Generating Transformational Solutions Today; Focusing the Logistics Enterprise of the Future aren't just words to us—they're our organizational culture. We use a broad range of functional, analytical, and scientific expertise to produce innovative solutions to problems and design new or improved concepts, methods, systems, or policies that improve peacetime readiness and build war-winning logistics capabilities. Our key strength is our people. They're all professionals from logistics functions, operational analysis sections, and computer programming shops. Virtually all of them have advanced degrees. But more important, virtually all of them have recent field experience. They've been there and done that. They have the kind of experience that lets us blend innovation and new technology with real-world common sense and moxie. Our special blend of problem-solving capabilities is available to every logistician in the Air Force.

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Introduction

Since 2006, the United States Air Force has operated an average of 2,032,948 flying hours per year to include both training missions and contingency operations.¹ According to Air Force Instruction (AFI) 11-102, *Flying-Hour Program Management*, the Air Force Flying-Hour Program (FHP) consists of the flying hours necessary to train aircrews to safely operate their aircraft and sustain them in numbers sufficient to execute their core tasked missions.² In short, the FHP equates flying hours to combat

Special Feature

capability.³ The Air Force mandates that each major command (MAJCOM) manage its budgeted portion of the overall FHP. This mandate requires continuous coordination between the maintenance and operations communities at both the MAJCOM and unit levels. Although AFI 11-102, *Flying-Hour Program Management* outlines the general process for managing the FHP, it does not prescribe specific, low-level details. The result of this lack of detail is a lack of standardization in the MAJCOM execution of the FHP. For example, a number of different information technology (IT) systems are used to manage the FHP depending upon MAJCOM and mission design series (MDS). However, in the coming years the Expeditionary Combat Support System (ECSS) is expected to manage logistics data for the FHP. ECSS is an enterprise resource planning system that will subsume or consolidate over 250 Air Force legacy IT systems. ECSS will plan and execute an extensive number of Air Force logistical processes to include supply, maintenance, and procurement. A driving factor for all aspects of Air Force logistics is the number of hours aircraft are flown. Flying hours not only determine immediate parts and maintenance demand levels but also affect longer term derived demands associated with maintenance activities and personnel support. Flying-hour demands are, in turn, driven by wartime and contingency needs as well as aircrew training and currency requirements. The FHP is designed to project flying hours associated solely with training and currency requirements, and represents a large proportion of total hours flown. Unlike flying hours associated with wartime and contingency operations, the FHP requirements are relatively predictable. For ECSS to be effective in planning logistics, it must have access to planned and executed flying-hour data. The capability to access FHP data is an ECSS requirement, but the specific processes and systems that must access the data have not yet been specified. Hence, the required capability does not exist in the current design of ECSS. Because the FHP represents a large, relatively predictable proportion of total flying hours, the effectiveness of ECSS would be considerably increased by attaining access to both planned and executed FHP data.

This article will identify the processes used to plan and execute FHP hours at both the Air Staff and MAJCOM level, to include IT systems used, in order to identify potential touchpoints for ECSS. Since a centralized effort to manage flying hours does not exist and there is limited capability to input and view FHP data, the potential touchpoints will be evaluated based on ease of access, integrity of underlying data, and degree of applicability

Selected Reading

Air Force Journal of Logistics

Poten



Elise Strachan, Captain, USAF
John Flory, University of Pittsburgh
Edward Bennett, Jr, Senior Master Sergeant, USAF
Richard Harken, Morgan Borszcz Consulting
Anthony Antoline, Major, USAF

Global Interfaces

ECSS and Flying-Hour Systems

Article Highlights

The Air Force Flying-Hour Program (FHP) consists of the flying hours necessary to train aircrews to safely operate their aircraft and sustain them in numbers sufficient to execute their core tasked missions. In short, the FHP equates flying hours to combat capability.

“Potential Interfaces: ECSS and Flying-Hour Programs” identifies the processes used to plan and execute FHP hours at both the Air Staff and major command (MAJCOM) level, to include information technology (IT) systems used, in order to identify potential touchpoints for the Expeditionary Combat Support System (ECSS).

A number of conclusions can be drawn from the analysis performed. First, the processes the MAJCOMs and Air Staff use to program and execute the FHP can be decomposed into three high-level processes, having commonality across the MAJCOMs. Second, ECSS’s subsuming of the Reliability and Maintainability Information System (REMIS) should be the focal point for gaining access to near real-time flying-hour data. The integrity of this data can be improved by checking data at the point of entry. Third, MAJCOMs are working toward commonality between base-level systems used by operations to manage the day-to-day aspects of the FHP. Some base-level systems, such as Patriot Excalibur, provide significant utility to the units.

A number of recommendations also resulted. First, flying-hour data should be validated at the point of entry and should be viewable through a business intelligence suite at the appropriate Air Force level. Second, an opportunity exists to automate initial input—FHP execution and utilization reporting at the unit, MAJCOM, and Air Force levels and display data in a dashboard. Third, AF/A3 should develop a standardized First Look model for all MAJCOMs’ unique mission requirements to ensure communication between operations and maintenance in determining requirements and their sustainability. Fourth, ECSS may consider expanding functionality in the future to subsume or integrate scheduling functions currently provided by one or more of the base-level systems. Additionally, a formal process may be developed to reconcile Automated Records Management System data with the FHP process at the unit level. Fifth, replacing paper 781s with an automated data acquisition system should be considered as AF/A3 and AF/A4 (Directorate of Logistics) communication is key to advancing transformation initiatives and avoiding stovepiping of IT system development in the future.

across Air Force organizations. Identifying effective avenues for obtaining FHP data will increase the effectiveness with which ECSS can plan and execute logistical processes. Determining the processes and IT systems used in the FHP requires two primary sources of information—AFI and subject matter experts (SME). Although the AFIs give high-level overviews of the FHP at the Air Force and MAJCOM-specific levels, they are often outdated and omit detailed process flows that can only be captured by interviewing SMEs. In order to fully capture FHPs across the Air Force, SMEs were interviewed at the following MAJCOMs: Air Combat Command (ACC), Air Education and Training Command (AETC), Air Mobility Command (AMC), Air Force Special Operations Command (AFSOC), and Air National Guard (ANG). United States Air Forces Europe and Pacific Air Forces (PACAF) were omitted because FHPs for their respective lead commands—Combat Air Force (CAF) and Mobility Air Force (MAF) assets are managed by ACC and AMC, respectively. Additional SMEs were interviewed for systems and processes affecting the FHP. As processes to manage the FHP across the Air Force were identified, potential touchpoints with ECSS were evaluated on the following three criteria:

- **Accessibility.** ECSS touchpoints should be readily accessible. The workload associated with repeated data transfers should be minimal. Furthermore, setting up the data transfer pathway between systems should not be prohibitively difficult or violate classification procedures.
- **Data Integrity.** Candidate systems should have high data integrity and their data should be primary, not derivative. Ideally, a system’s data should be accurate and timely.
- **Applicability.** Touchpoints should be selected that are applicable to multiple organizations across the Air Force, thereby minimizing the required number of touchpoints.

The absence of specific, low-level detail in AFI 11-102 for managing the FHP results in the lack of process standardization across MAJCOM execution of the FHP. The lack of detail was confirmed in extensive interviews with SMEs. However, although the MAJCOM processes have low-level, mission-driven differences, they generally share many high-level similarities. In general, the MAJCOMs interact with Air Staff through three high-level processes to program and execute the FHP. The three processes can be categorized by their functions as follows: Programming, First Look, and Execution. (See Figure 1)

The Programming Process

The Programming process occurs at Air Staff and projects allocated flying hours at the Air Force level program element with a reconciliation of force structure data with flying-hour requirements for a time horizon of 2 to 10 years. This process determines FHP requirements based on aircrew currency and reconciles the requirements with force structure and sustainability constraints to determine a supportable FHP allocation. The office of primary responsibility for computing force structure is the Directorate of Programs, Program Integration Division (AF/A8PE), and it relies on two data sources as shown in Figure 1. The first is inputs from force programmers in each MAJCOM on near- and far-term events impacting their respective MAJCOM’s force structures. The second source is the Manpower

Article Highlights

Article Acronyms

Programming and Execution System (MPES), a personnel system containing data on the number and types of aircrew requiring training. The computed force structure, to include primary aircraft inventory and crew ratios, is combined with aircrew training requirements from the Directorate of Air, Space, and Information Systems (AF/A3) to serve as inputs for the Air Force Single Flying-Hour Model (AFFHM). The AFFHM applies formulas specific to each requirement to determine the necessary flying hours. The outputs of the AFFHM are then passed to each MAJCOM's units in late February. The units apply the ready aircrew program process to fine-tune the outputs of the Single Flying-Hour Model. The units send their projected flying hours to the MAJCOMS. After MAJCOM review, the projected allocations are pushed to the Program Data System (PDS), a classified system that serves as the final repository for programmed and executed flying hours and is matched with funding in the Automated Budget Interactive Data Environment System (ABIDES) in late September. In the past, this process was mostly driven by Air Staff, but it is now more collaborative with MAJCOM units validating their programmed hours. AFSOC uses a modified process as its flying hours are controlled and managed by United States Special Operations Command (USSOCOM). While the same models are used to project force structure, personnel, and requirements, the programmed hours must be vetted through USSOCOM. (See Figure 2)

The First Look Process

The next high-level process to program and execute the FHP is First Look. First look is a process whereby MAJCOMs thoroughly vet the next fiscal year's programmed hours for sustainability. It is mandated by AFI 21-101, *Aircraft and Equipment Maintenance Management*, that all MAJCOMs conduct the First Look process, although waiver authority for this instruction is the Aircraft Maintenance and Munitions Division (AF/A4M). The critical step that characterizes First Look is the coordination between maintenance and operations at the unit level to ensure harmony between the need to fulfill requirements and the ability to sustain aircraft with manpower, equipment, and facilities. First Look begins when Air Staff disseminates projected hours from PDS to the MAJCOMs, typically in late February. MAJCOMs in turn, disseminate the FHP to the unit level. The operational and maintenance organizations at each unit must then negotiate a sustainable flying hour allocation. It should be noted that there is no standardized model for determining maintenance capacity across the Air Force. Ideally a standardized First Look model would exist that considers MAJCOM-specific mission requirements. The units then pass their agreed upon allocation for MAJCOM and Air Staff review. The allocations are validated and adjusted in the First Look process, stored in PDS, and matched with funding in ABIDES. First Look is typically done in March—six months prior to execution. There is limited ability to adjust execution as the President's budget is published in March, so First Look should perhaps more aptly be called *Last Look*. Altering the First Look process so the next two programmed years are considered could improve its effectiveness, as is currently done by AETC.

There are several differences in the ways each MAJCOM approaches the First Look process. For example, AMC does not conduct the First Look process. One year prior to execution, flying hours are projected at the MAJCOM level, but there is no iterative collaboration between operations and maintenance organizations

ABIDES – Automated Budget Interactive Data Environment System
ACC – Air Combat Command
AETC – Air Education and Training Command
AF/A3 – The Directorate of Air, Space, and Information Systems
AF/A3O – AT – Air Force Air Operations Training
AF/A4M – The Aircraft Maintenance and Munitions Division
AF/A8PE – The Directorate of Programs, Program Integration Division
AFFHM – Air Force Single Flying-Hour Model
AFI – Air Force Instruction
AMC – Air Mobility Command
ANG – Air National Guard
AOR – Area of Responsibility
ARMS – Automated Records Management System
AVDO – Aerospace Vehicle Distribution Officer
AVUM – Aerospace Vehicle Utilization Monitor
CAF – Combat Air Forces
D200F – Applications, Programs and Indentures System
ECSS – Expeditionary Combat Support System
FHP – Flying-Hour Program
FIRST – Financial Information Resource System
FM/IMT 781 – Form
FSDM – Force Structure Data Management
G081 – Core Automated Maintenance System for Mobility
GDSS – Global Decision Support System
GTIMS – Graduate Training Integration Management System
IMDS – Integrated Maintenance Data System
IT – Information Technology
K002 – Peacetime Programming Computational System
MAF – Mobility Air Forces
MAJCOM – Major Command
MDS – Mission Design Series
MPES – Manpower Programming and Execution System
MX – Maintenance
OPS – Operations
PACAF – Pacific Air Forces
PDS – Program Data System
PEX- Patriot Excalibur
RAP – Ready Aircrew Program
RAPIDS – Resource Allocation Programming Information Decision System
REMIS – Reliability and Maintainability Information System
SME – Subject Matter Expert
TIMS – Training Integration Management System
TBMCS – Theater Battle Management Core Systems
USSOCOM – United States Special Operations Command

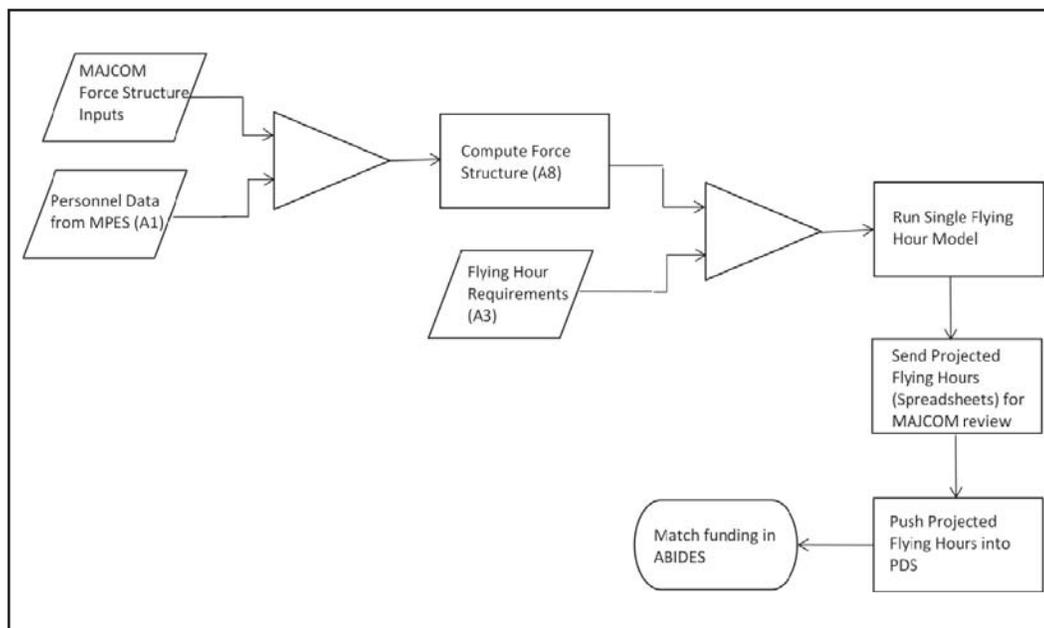


Figure 1. Programming Process

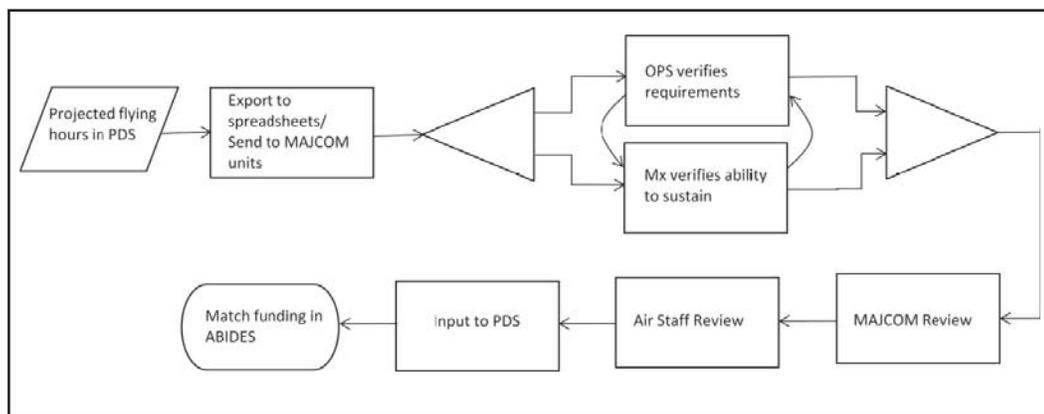


Figure 2. First Look Process

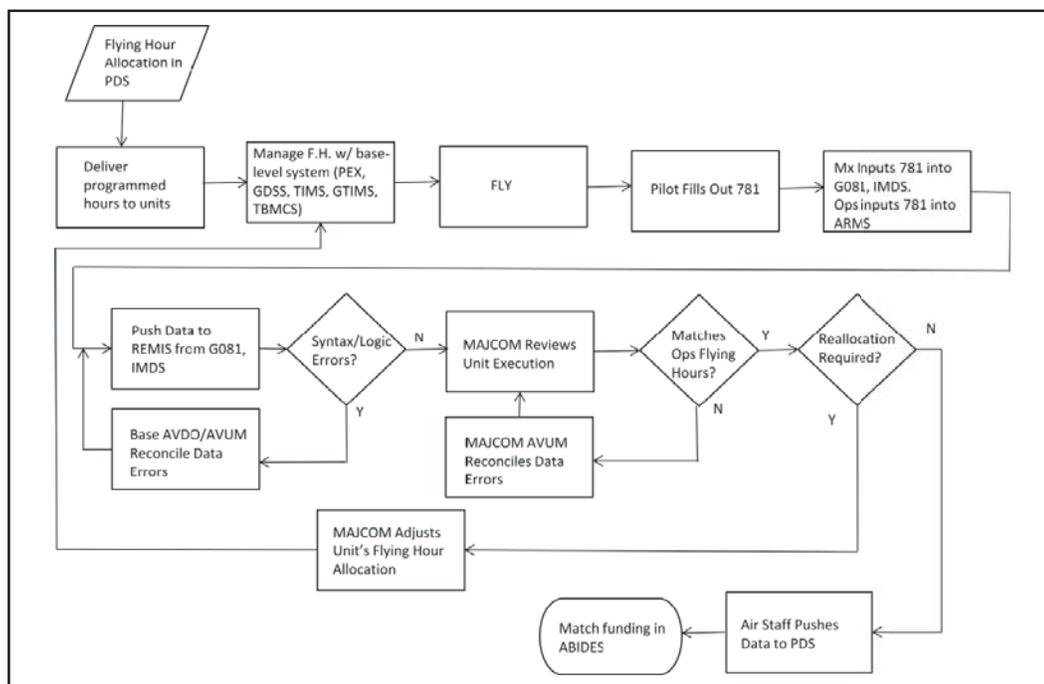


Figure 3. Execution Process

at the unit level. AETC, which has a fairly reliable flying schedule, conducts a more extensive First Look process than the other MAJCOMs. Synchronization of base-level operations and maintenance occurs two weeks prior to AETC's MAJCOM Program Flying Training conference, which validates the next two years of FHP requirements. Additionally, AETC uses different requirements for its *white tail* (initial training) aircraft and *grey tail* (operational training) aircraft. White tail requirements are based on initial student pilot production given by Air Force Air Operations Training (AF/A3O-AT), whereas, grey tail requirements use the AFFHM. Lastly, ACC and AFSOC have well organized First Look processes. However, ACC holds an annual Flying-Hour Conference as part of its First Look, and AFSOC has a standardized process for obtaining training sustainable flying hours from its units.

The last high-level MAJCOM similarity is the Execution process. The MAJCOMs use the Execution process to plan, execute, allocate, reconcile, and report their allocated flying hours as shown in Figure 3.

The Execution Process

The Execution process begins when units receive their allocated flying hours stored in PDS. A number of base-level systems are used by units to schedule and monitor their flying hours on a day-to-day basis to include the following:

- Patriot Excalibur (PEX)
- Global Decision Support System (GDSS)
- [Graduate] Training Integration Management System (TIMS/GTIMS)
- Theater Battle Management Core Systems (TBMCs)
- Spreadsheet products

Once a mission is executed, the pilot records post-sortie data to include flying hours on an Air Force Technical Order FM/IMT 781, which is the primary source of data on hours flown. The 781 data is input by maintenance into Integrated Maintenance Data System (IMDS) for CAF aircraft or G081 (Core Automated Maintenance System for Mobility) for MAF aircraft and automatically sent by both systems to the Reliability and Maintainability Information System (REMIS) at intervals based on the criticality of the data fields. REMIS automatically checks incoming data for a predefined set of syntax and logic errors. Data that fails the error checks are placed in an error suspense file for the base-level aerospace vehicle utilization monitor (AVUM) and aerospace vehicle distribution officer to correct. The AVUMs submit monthly execution reports to the MAJCOMs, which review them to monitor and adjust the execution process. The MAJCOMs also reconcile REMIS flying hours with those reported by operations at each base. MAJCOMs, in turn, forward monthly spreadsheet reports detailing their executed hours to Air Staff's flying-hour program manager (AF/A3O-AT). The program manager sits at the interface between the unclassified REMIS system and the classified PDS system and compares the flying hours in REMIS with the MAJCOM-reported flying hours. Before the data is archived in PDS (the Air Force authoritative data source), it passes through K002, a system that aligns tables from REMIS into PDS format. Once finalized, executed flying hours are pushed to PDS for permanent storage and funded in ABIDES (and reflected in ABIDES in the *actuals* position of the next President's budget submission to the Office of the Secretary of Defense and to Congress).⁴

There are also a number of key differences in the Execution process across the MAJCOMs. First, AFSOC's flying hours are reported to Air Staff after being vetted by USSOCOM, which controls AFSOC's flying hours. Furthermore, AFSOC must get approval from USSOCOM to reallocate flying hours (and funding) between MDS during execution. Second, MAJCOMs use very disparate processes to reconcile flying-hour data in REMIS with operational systems. The low-level processes used and amounts of reconciliation required are very different. For example, the Air National Guard (ANG) does very little reconciliation at the MAJCOM level, whereas other MAJCOMs do extensive reconciliation at headquarters. Third, MAJCOMs exert different degrees of control over the execution process. The ANG monitors the process, but largely enables decentralized execution of its diverse units. AMC, on the other hand, regularly reallocates flying hours as its aircraft are impacted by contingencies. Fourth, the base-level IT systems used differ extensively not only between, but also within, MAJCOMs.

The differences within FHP IT systems can be broadly categorized into two categories: *integrated* and *stovepiped*. The integrated systems transfer flying-hour information between themselves, whereas the stovepiped systems do not. The following are integrated IT systems discussed in the order of data flow:

- G081 and IMDS. G081 and IMDS are base-level systems that are the entry point for maintenance data, including flying hours, and are used universally by maintenance units throughout the Air Force. Maintainers input data directly from the 781 into G081 and IMDS, which both transmit the data to REMIS. Because the data, once reconciled in REMIS, is not updated in G081 and IMDS, both systems incur significant

discrepancies in flying-hour data. From a database design perspective G081 and IMDS are very different. G081 provides a global view of MAF asset data, whereas IMDS is segregated into different groups of bases.

- REMIS. REMIS is a logistics database that receives data from multiple systems including G081 and IMDS at intervals based on the data's criticality. REMIS filters incoming data for logic and syntax errors, which the units must correct before the data is accepted. Furthermore, because it is directly correlated to dollars, flying hours are rigorously reconciled with AF/A3's reported hours at the MAJCOM level. REMIS is the central repository for aircraft maintenance and flying-hour data across the Air Force and is used for Air Force level reporting. It is considered the authoritative data source of the MAJCOMs. REMIS also feeds D200F (Requirements Management System), which in turn supports spare parts computations.
- K002 (Peacetime Programming Computational System). K002 is a classified temporary storage area where flying-hour data is summarized. REMIS data is input into K002 every month. The data may undergo changes due to reconciliation or late reporting. Once complete, the data stored in K002 is then archived in PDS. PDS is considered the Air Force authoritative data source for flying-hour data.
- PDS. Air Force flying-hour data, both programmed and executed, are archived in PDS. PDS is a classified system and is the authoritative source of post-execution, flying-hour data for the Air Force. Data is transmitted to PDS after the summarization process in K002; therefore, PDS is updated monthly.
- ABIDES. ABIDES is a classified system that matches funding and manpower data to the FHP. ABIDES receives programmed and executed flying hour, force structure, and inventory data from PDS and combines it with financial and manpower data received from the Resource Allocation Programming Information Decision System (RAPIDS) and MPES, respectively. The accuracy and timeliness of flying-hour data in ABIDES is equivalent to data in PDS. ABIDES, like PDS, is used by all MAJCOMs.

Conversely, the following five systems describe the most common stovepiped IT systems used to manage the FHP. They are presented in the order of decreasing pervasiveness throughout the Air Force.

- ARMS (Automated Records Management System). ARMS is the primary base-level system for tracking aircrew currency. Data is input from the 781 to include flying hours. Although ARMS is used by all MAJCOMs, it is a parallel system to REMIS, and its data is not formally checked as part of the REMIS reconciliation process.
- PEX. PEX is a base-level system used to manage and schedule day-to-day, monthly, quarterly, and annual flying operations. It has interfaces with both ARMS and IMDS, but data is only received, not transmitted. PEX is strictly a functional program for managing base-level flying operations with maintenance planning capability. In the future, it will be populated by the MAJCOMs and not strictly unit driven. PEX is used by ACC and ANG; however, its usefulness for scheduling and maintenance is such that it may be making inroads to other MAJCOMs.
- GDSS. GDSS is a command and control system used by AMC to plan and execute air mobility operations. Flying hours in

GDSS are used for execution planning as well as deviation and delay reporting. GDSS is not stovepiped in the strictest sense. Data flows on a two-way feed between GDSS and G081; however, only G081 data is directly used in the REMIS reconciliation process.

- TIMS/GTIMS: TIMS and GTIMS are training-specific systems used by AETC. Both systems track student training-sortie progress.
- Theater Battle Management Core Systems (TBMCS). TBMCS is a classified system used primarily in the area of responsibility to plan and execute air operations including publishing the air tasking order.

In addition to the previously discussed IT systems, there are two IT systems currently in development that will also affect FHP data.⁵

- Force Structure Data Management (FSDM): FSDM will replace PDS, which has become outdated and unreliable. FSDM is scheduled to begin operation in December 2010.
- Financial Information Resource System (FIRST): FIRST is currently in design and is scheduled for operational testing in March or April of 2011. FIRST will replace ABIDES and subsume PDS/FSDM and RAPIDS.

To determine the suitability of the IT systems as touchpoints for ECSS, the characteristics of the systems have been integrated with the three high-level FHP processes shown in the following tables. The tables will summarize the degree of accessibility, data integrity, and applicability of each system. It should be stressed that no effort has been made to quantify these attributes in an objective, absolute sense. Instead qualitative words such as *low*, *poor*, *good*, and *high* were used. These descriptions only serve as a relative ranking of the systems within each table and were based on both the characteristics of the systems as well as their relationship to the FHP process.

The IT systems required for the Programming and First Look processes are identical, as the processes only differ in the fidelity with which operations requirements and maintenance sustainability are reconciled at the base level. The processes use PDS and ABIDES—both systems will be replaced with FIRST in the future.

All three systems are classified, and since ECSS is intended to be an unclassified system, the systems are not accessible. Additionally, the programmed flying-hour data is strictly a prediction. Whether this prediction is accurate or not is outside the scope of this article; however, the prediction is represented identically in all three systems. Thus, the data integrity of programmed flying hours is high. All three systems are used by the MAJCOMs for their FHPs.

The following table summarizes the suitability of the integrated IT systems used in the Execution process. The systems are listed in order of data flow.

As described earlier, data enters this integrated set of systems through G081 or IMDS. As data flows to REMIS, K002, PDS, and then ABIDES, it undergoes several checks for data integrity; however, its timeliness decreases because K002, PDS, and ABIDES are only updated monthly. Monthly, quarterly, and annual FHP data can be manually input into G081 and IMDS from PDS; however, no validation actions are performed in the

IT SYSTEM	Accessibility	Data Integrity	Applicability
PDS	Limited; classified system	High	All MAJCOMs
ABIDES	Limited; classified system	High	All MAJCOMs
FIRST*	Limited; classified system	High	All MAJCOMs
* System Under Development			

Table 1. Evaluation of Programming and First Look Process Systems

IT SYSTEM	ACCESSIBILITY	DATA INTEGRITY	APPLICABILITY
G081	Good	High Timeliness/Low Accuracy	MAF Aircraft
IMDS	Good	High Timeliness/Low Accuracy	All Other Aircraft (UAVs)
REMIS	Good	High Timeliness/Low to Moderate Accuracy	All MAJCOMs
D200	Unknown	Low Timeliness/Good Accuracy	All MAJCOMs
K002	Limited; classified system (REMIS feeds K002 monthly)	Low Timeliness/Good Accuracy	All MAJCOMs
PDS	Unknown	Low Timeliness/Highest Accuracy	All MAJCOMs
ABIDES	Unknown	Low Timeliness/Highest Accuracy	All MAJCOMs
FIRST*	Unknown	Low Timeliness/Highest Accuracy	All MAJCOMs
* System Under Development			

Table 2. Evaluation of Integrated Execution Systems

transfer. With the exception of G081 and IMDS, the systems are applicable to all MAJCOMs.

Summary of Stovepiped Systems

Table 3 presents a summary of the stovepiped systems.

ARMS and PEX are both base-level systems, and it is unknown whether unit data is centrally accessible. PEX, however, allows FHP allocations to be pushed to units from the MAJCOM. GDSS allows complete visibility of AMC assets; however, it is unknown whether TIMS/GTIMS training data is centrally accessible for AETC's bases. Data in all systems is updated based on data criticality and is therefore timely. However, the flying-hour data in these systems is not updated to match changes that occur during the reconciliation process with REMIS. The data accuracy of these systems is unknown but almost certainly lower than that of REMIS—data from these systems not included in the formal REMIS data reconciliation process.

Conclusions and Summary

A number of conclusions were made throughout the duration of the study. First, the processes the MAJCOMs and Air Staff use to program and execute the FHP can be decomposed into three high-level processes, having commonality across the MAJCOMs. Second, ECSS's subsuming of REMIS should be the focal point for gaining access to near real-time flying-hour data. The integrity of this data can be improved by checking data at the point of entry. ECSS will also have access to validated data, currently in K002 and PDS. (REMIS gets both initial FHP plus monthly updates through K002 and D200F. G081 and IMDS have a manual process of loading FHPs with limited utilization.) Third, MAJCOMs are working toward commonality between base-level systems used by operations to manage the day-to-day aspects of the FHP. Some base-level systems, such as PEX, provide significant utility to the units.

A number of recommendations also resulted. First, flying-hour data should be validated at the point of entry and should be viewable through a business intelligence suite at the appropriate Air Force levels. Second, an opportunity exists to automate initial input—FHP execution and utilization reporting at the unit, MAJCOM, and Air Force levels and display data in a dashboard. Third, AF/A3 should develop a standardized First Look model for all MAJCOMs' unique mission requirements to ensure communication between operations and maintenance in determining requirements and their sustainability. Fourth, ECSS may consider expanding functionality in the future to subsume or integrate scheduling functions currently provided by one or more of the base-level systems. Additionally, a formal process may be developed to reconcile ARMS data with the FHP process at the unit level. Fifth, replacing paper 781s with an automated data acquisition system should be considered as AF/A3 and AF/A4 (Directorate of Logistics) communication is key to advancing transformation initiatives and avoiding stovepiping of IT system development in the future.

In summary, AF/A4 is transforming the way it executes logistics and ECSS is the cornerstone enabler. IT system touchpoints are necessary for ECSS to access critical logistics information on FHP programming and execution. Additionally, the changes affecting AF/A4 will also impact AF/A3 and the way

information is collected and shared. For example, it will become essential that AF/A3 transition to ECSS and place less reliance on gathering FHP data from the current legacy systems. To facilitate this, AF/A3 IT requirements must be known and ECSS training must be provided to these new user communities. Another challenge facing ECSS and the FHP is the lack of accessibility to ECSS from classified systems such as PDS and ABIDES. According to the ECSS Logistics Transformation Office, the current policy states that if data is unclassified but the system is classified, then an interface between ECSS and the data may be designed. However, if the data is classified, the classified system will remain persistent and ECSS will not perform that functionality. Either way, the FHP is a major driver of Air Force logistics and obtaining FHP data within ECSS will require reconciliation between AF/A3 and AF/A4 to forge a successful way ahead.

Notes

1. Author's communication with Mr Barry Reid, AF/A30-ATF.
2. Air Force Instruction 11-102, *Flying-Hour Program Management*, 29 March 2002, 3.
3. Air Force Policy Directive 11-1, *Flying-Hour Program*, 10 August 2004, 1.
4. Author's communication with Mr Barry Reid, AF/A30-ATF.
5. Author's communication with Mr Carl R. Simpson, SAF/FMP (AFFSO).

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IT SYSTEM	Access-ibility	Data Integrity	Applic-ability
ARMS	Unknown	High Timeliness/Unknown Accuracy	ALL MAJCOMs
PEX	Unknown	High Timeliness/Unknown Accuracy	ACC, ANG, AFSOC
GDSS*	Good	High Timeliness/Unknown Accuracy	AMC
TIMS/GTIMS	Unknown	High Timeliness/Unknown Accuracy	AETC
TBMCS	Unknown	Unknown	AOR Operations
* GDSS feeds data to G081			

Table 3. Evaluation of Stovepiped Execution Systems



What Does Logistics Enterprise Architecture Got to Do With It?

Captain Marie Long, AFLMA
Steve Green, AFLMA
SMSgt Edward Bennett, AFLMA

Introduction

The Air Force logistics community is in the process of developing an enterprise architecture (EA) for the logistics domain. The Logistics EA (LogEA) will capture end-to-end enterprise processes to better support decisionmaking, identify process inefficiency, process redundancy, and optimize the use of crucial resources. The Air Force's logistics domain is partially comprised of several emerging transformation initiatives. These initiatives are part of the LogEA execution plan, known as Expeditionary Logistics for the 21st Century (eLog21). The purpose of the eLog21 campaign is to modernize logistics capabilities—moving from the existing stovepiped and disjointed systems to a future state of increased efficiency and reduced cost.

Architecture, as it pertains to business, is typically associated with information technology (IT)

systems rather than non-IT, or process-based operations. This makes sense. In business, significant amounts of money are invested in procuring hardware and software, network integration, life-cycle operating cost for the technology—and the list goes on. The system must operate correctly and interface effectively to accomplish the required functionality. Clearly, the investment in an IT system necessitates forethought (systems architecture). However, only about 10 percent of the current eLog21 initiatives qualify as IT systems. The remaining 90 percent are non-IT eLog21 initiatives that won't require the procurement and adoption of new and technologically challenging operating systems and software. Understandably, many program managers and representatives for non-IT initiatives have started to ask the hard questions: Why do I have to develop architecture? Is there any real benefit to my organization? How do I do it? And



maybe even the worst of all—If I develop architecture, will it end up sitting on a shelf gathering dust?

The purpose of this article is to face these questions head on—to provide a much needed justification for architecture development. Management expert Peter F. Drucker notes that “There is nothing so useless as doing efficiently that which should not be done.” Developing architecture for the sake of developing architecture is not the vision of the LogEA. While the LogEA will manage the Air Force logistics enterprise as a whole, individual initiative architectures can also pay dividends within specific programs. This article will tell you how.

First Things First: What is Enterprise Architecture Anyway?

Though EA is not a new idea, many people don’t have a clear understanding of what it is. Simply put, architecture is comprised of operational processes, systems that enable those processes, information, and data exchanges that support those processes. It can also be used to define the business rules that constrain or govern an organization. In other words, it is a one-stop-shop for understanding not only how programs work and who they interact with, but what purpose they serve. The concept of *enterprise* carries the meaning that the organization is perceived as a single entity rather than a collection of cooperating units.¹ EA is a comprehensive framework used to manage and align an organization’s information, IT assets, people, operations, and projects with its operational characteristics.² Consistent with these definitions, the LogEA represents a single enterprise with shared strategic objectives, a common authority structure, integrated management processes, and consistent policies.

What Does the Air Force Hope to Achieve?

To date there has been no end-to-end enterprise view of the Air Force. In this day of constrained resources and operational budget cuts it is important to ensure processes are as efficient and streamlined as possible. Architecture can assist with this goal. EA supports improved decisionmaking, analysis of alternatives, continuous process improvement, and gap identification. EA also links disparate processes to enable a true enterprise view.

A well-documented, well-understood enterprise architecture enables the organization to respond quickly

to changes in the environment in which the organization operates.³ It serves as a ready reference that enables the organization to assess the impact of the changes on each of the enterprise architecture components while ensuring the components continue to operate smoothly through the changes. It is also used as a decision support tool to inform, guide, and support the decisions of not only the logistics domain but the Air Force enterprise as well. EA helps everyone to understand their alignment, key processes, roles, critical information and data exchanges, and supporting enablers.⁴

Managing complexity is a major benefit of EA. Architecture is the key to understanding complexity and managing change.⁵ Architecture is not required for small, isolated projects because the level of complexity can be easily handled by the program manager. However, as the size and level of complexity of a project grows, a framework is needed to break it down into manageable units.

Finally, EA is beneficial in its ability to drive change in organizations through continuous process improvement. Architecture provides a means of documenting the most current business process. It also provides a baseline to turn to when improvement is to be made and it describes the desired future state of the process or processes. Architecture provides the benefit of having a baseline, the *as-is* process, already documented when conducting continuous process improvement efforts for an organization. Current processes for many logistics programs are identified in many forms and in numerous locations. They may be documented in Department of Defense (DoD) or Air Force instructions, policies and procedures, and process guides. Some may not be clearly identified or documented at all. This is where EA can be of benefit.

Question 1: Why do I have to develop architecture?

Now we can start to examine the questions posed in the introduction. First: Why do I have to develop architecture? Simply stated, it’s required. Air Force Instruction (AFI) 33-4, *Enterprise Architecting*, establishes enterprise architecting as a key Air Force decisionmaking support process. The implementation of this directive is further outlined in AFI 33-401, *Implementing Air Force Architectures*. Of course, just because a requirement is levied on an organization doesn’t mean stakeholders will buy in to the idea. Therefore, a more sufficient answer is required.

There are actually reasons the Air Force has mandated architecture development. Architecture has long been used for business planning in commercial industry. The DoD has studied these industry best practices of architecture implementation and has seen the benefits that can be realized. In today's resource constrained environment, architecture is essential. Proper use of architecture results in all the benefits discussed throughout this article—improved decisionmaking, quick adaptation to change, elimination of inefficient and redundant processes, and optimization of organizational assets. A properly developed EA for the logistics domain will guide the transformation of the Air Force supply chain. It will stand as the single authoritative source of process and system models for the entire logistics enterprise.⁶ Like cogs in a wheel, each eLog21 initiative plays a critical role in the realization of this vision.

Question 2: Is there any real benefit to my organization?

Even though we have touted the benefits of architecture at the macro level, and established its credibility as a *requirement*, something more is needed to convince program managers to do more than *check the box* for architecture development. Why should you commit valuable time and resources to understanding architecture, train personnel to do it, and finally generate a working and executable model? And what does *working* and *executable* really mean anyway?

Plainly stated, architecture can be thought of as a way to design and organize your business. However, many initiatives are already operating, but the design part of architecting is somewhat obsolete. It may seem like *architecture archeology* to dig up information on how the business is currently operating just for the sake of elaborate documentation. Aside from its value to the big picture, developing *as-is* architecture also holds value for your organization. Perhaps architecture development will simply serve to validate that the organization is operating cost effectively, at optimal efficiency with minimal redundancy. In this case, architecture could be used as justification for maintaining resource allocation if cutbacks in manning or funds become an issue. Maybe the architecture will identify problems in the existing processes or areas where things can be done just a little bit better. Architecture can then be used to resolve these issues. With the transient nature of staffing in DoD, architecture can also be of value to incoming personnel, especially those in positions of leadership.

A quick review of your process models and definitions can offer insight to the way the organization operates and greatly reduce the learning curve for new personnel. Finally, your architecture will serve as the benchmark as you progress to a *future state*. Change is inevitable in any organization. A good as-is architecture will ease transitions and be integral to change management strategies. Imagine a roadmap—you can't get where you want to go if you don't know where you are. And before we forget, working and executable just means that your architecture operates to serve all of these purposes.

Question 3: How do I do it?

Now, with the assumption that it is conceivable for architecture to be an asset to your organization, the question of how to develop architecture can be addressed. Simply stated, architecture will define your operation by depicting what work gets done and who does it. Along with this, it identifies other organizations who provide inputs to your processes and those who use the goods or services you provide. From a non-IT perspective, this is basically all the information necessary to initiate architecture development. But before we go down this road, a brief discussion of the LogEA governance and basic structure is in order.

Enterprise Logistics Governance

Developing an EA requires the support of senior leadership. Governance is also needed to ensure the scope of the effort remains on track and the architecture meets its intended use. The governance behind LogEA is the Enterprise Logistics Governance (ELG) process. This process ensures leadership is aware of changes taking place with LogEA and serves as a blueprint for architecture development requirements.

The ELG is a tiered set of governance bodies which exists to make decisions, establish logistics enterprise strategy, and oversee processes to enable the Air Force's new enterprise approach.⁷ The ELG consists of the Logistics Council, Logistics Board, Logistics Working Group, and Secretariat (see Figure 1 for structure and objectives). The requirement for initiatives falling under the ELG to develop architecture is directed in the ELG initiative management process. Programs seeking initiative status will provide an overview and summary of the program. Programs obtaining initiative status will then be required to develop additional program architecture per the *ELG Process Guide*.

LogEA: The Basic Structure

LogEA employs the Supply Chain Operations Reference (SCOR) model as its core framework

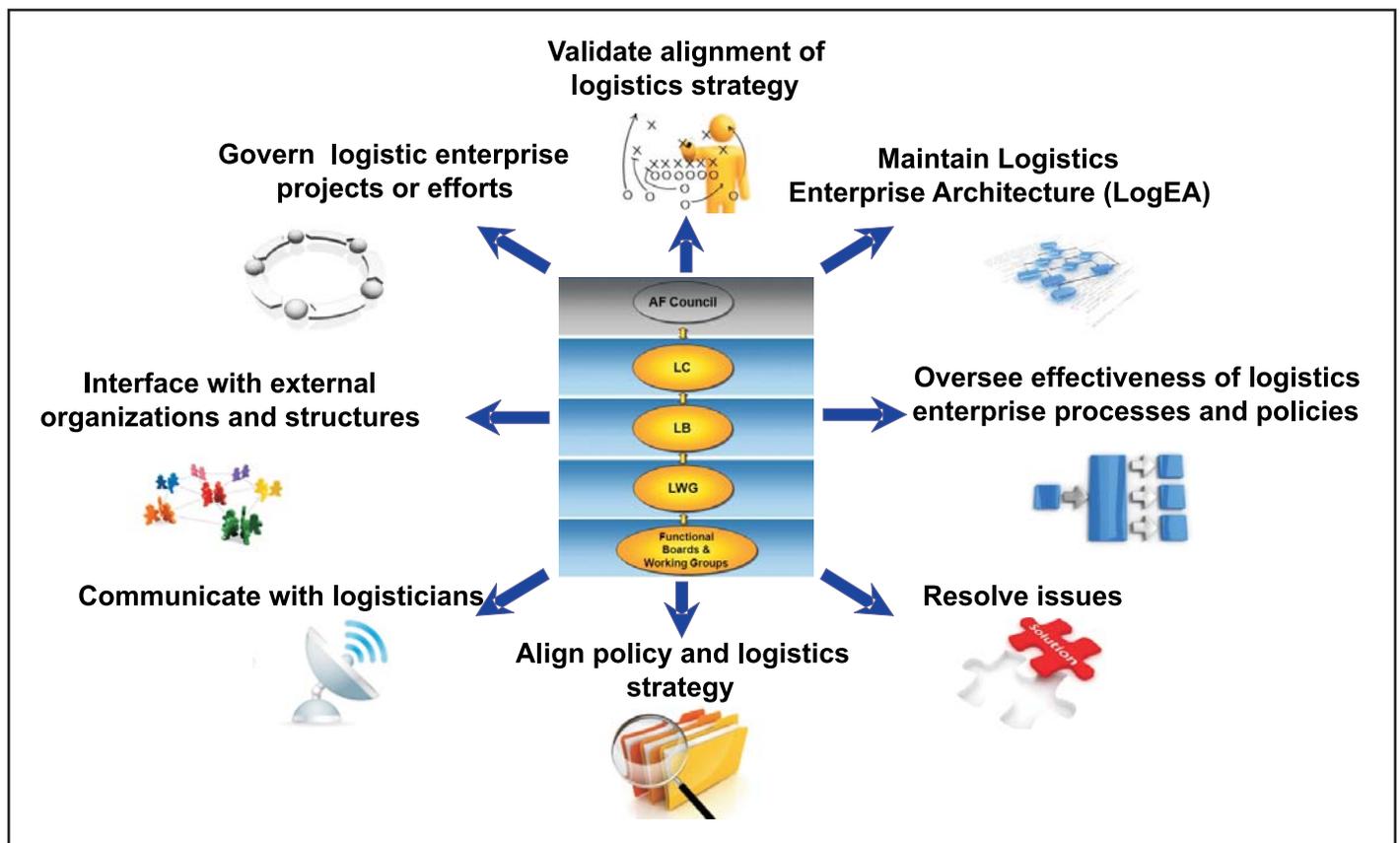


Figure 1. Enterprise Logistics Governance Objectives

aligning with DoD 4140.1R, *DoD Supply Chain Material Management Regulation*. Developed and endorsed by the Supply Chain Council as the cross industry standard for supply chain management, the SCOR model describes business activities associated with all phases of customer demand. SCOR provides a standard framework and taxonomy and defines industry best practices and metrics for activities within the framework. The SCOR model is organized around the five primary management processes of plan, source, make, deliver, and return, as well as the enabling processes linked to all five primary processes. SCOR can be used to describe supply chains that are very simple to very complex using a common set of definitions. Proper alignment of business processes under these management areas is key to using the model to its full capability.

The SCOR model is instantiated as a hierarchy within the LogEA, and acts as a *parent* to the architectures generated by the eLog21 initiatives. Each initiative will associate its processes with one of the five overarching SCOR processes and use this as a starting point for architecture development. Now that we've established how the initiatives fit into the big picture, we can get to the *how* of architecting.

To glean the benefits of enterprise architecture, key business processes must be captured in the form of architecture artifacts and provided to LogEA architects. Artifacts are distinct representations of business processes, capabilities, and exchanges of information. Linking of domain processes at the domain level will ultimately bring to light gaps and redundancies within enterprise business processes. The subsequent elimination of these problem areas will help ensure the logistics enterprise is operating optimally and providing superior support to the warfighter.

The Department of Defense Architecture Framework (DoDAF) Version 2.0 outlines enterprise architecture. It provides a roadmap for change as well as a context and reference for how and where programs fit within a larger enterprise picture.⁸ This type of architecture allows LogEA architects to capture domain enterprise processes and link these processes together to form a holistic view of the logistics domain.

Now, with this background information, the six-step process for architecture development advocated in the DoDAF V2 can be discussed. This methodology is easy to understand and an excellent starting point for architecture development.

Architecture Development Six-Step Process

The six-step development process is comprised of the most common steps used by the architecture community. It is nonspecific, so as to accommodate the broadest possible set of circumstances. It is important to note that architecture is considered to be an iterative process, and architecture is meant to function as a living document. Any iteration of architecture is seen as a *snapshot* in time of the process it depicts.⁹

The first step in the process is to determine the intended use of the architecture. For the purpose of the eLog21 initiatives, this is already outlined in the guiding documentation for the LogEA. Second, the scope of the architecture must be determined. This will be a combined effort of the LogEA architects as well as initiative team leads. Consideration of time frames, resources, and constraints will be a part of this step. The third step—determining the data required to support architecture development—also requires cooperation. For non-IT initiatives, a big concern at this step will be the level of detail the architecture should depict. The standard statement of LogEA architects is that architecture must be decomposed to the transaction level; however, there is some subjectivity here. It basically comes down to what is useful versus what is excessive.

Now that purpose, scope, and level of detail have been considered, it is time to collect and organize the data. This is the point where the architecture artifacts are actually developed and the eLog21 initiative architects take over. Only a few basic things are needed to begin architecture development: knowledge of key processes, who does them, and inputs and outputs for the processes. This data is then translated into graphical representations. Also, the LogEA architects at AFLMA can be consulted for guidance as you progress through architecture development. Artifacts are typically created through the use of architecture techniques to generate different views, or viewpoints, for presentation. The DoDAF presents templates of many viewpoints available for use in documenting program architectures. However, the DoDAF does not mandate the use of any core products for architecture development, but instead chooses a *fit-for-purpose* approach. To this end, the LogEA architects have outlined what is required and the initiatives will provide key process information as defined in the LogEA Compliance Plan. An example illustrating this is the Operational Viewpoint (OV)-5b.

This architecture viewpoint is used to depict business processes. Process maps traditionally consist of sequential activities performed when executing a process. These processes and their associated activities are hollow, possessing no information on what is taking place other than the activity's name. The OV-5b viewpoint captures an activity, inputs to and from the activity, responsible actors, and information exchanges. Each business activity has a detailed description defining the activity. Also included are applicable rules and standards as well as metrics used to evaluate the activity. Inputs or events to the respective activity and outputs or deliverables are defined as well. Activities reside in workflow lanes depicting the organization responsible for performing the activity. When this view is complete there is no doubt as to whom is responsible for activity execution, the input and output of the activity, and what information is being exchanged between actors both internal and external to the organization.

Once architecture viewpoints have been generated, the ball is kind of handed back to the LogEA architects. In this step, analysis is conducted. The architecture is tested for completeness, accuracy, and sufficiency. Any issues will be resolved in cooperation with the initiative architecture team leads. The last suggested step in the process is the presentation of results to stakeholders. For our purposes, this step will be addressed with the certification of initiative architecture artifacts by LogEA evaluators, and finalized with the federation of the architecture to the overarching LogEA model (the initiative architecture is *mapped* to the SCOR-based parent architecture discussed earlier).

Question 4: If I develop architecture, will it end up sitting on a shelf gathering dust?

Once the architecture is developed, certified, and mapped, what are we going to do with it? Is it going to sit on a shelf somewhere until its annual review? Definitely not. It will be a working and executable architecture, realizing all the benefits outlined throughout this article. But, a more detailed answer is needed.

The Payoff

Two of the most commonly cited benefits of architecture development are gap analysis and elimination of process redundancy. As certified initiative architectures are mapped to the LogEA model, architects will examine the artifacts for redundancies throughout the enterprise.

For example, if duplicate tasks are identified between two initiatives, research can be conducted resulting in either a clarification of the process, or a change to eliminate the redundancy. Similarly, gaps can also be identified with analysis of initiative architectures. For example, if one initiative's architecture depicts receiving a process input from another initiative, and that initiative does not show the specified information as an output, this must be resolved.

The most significant practical use of the LogEA will be in the area of change management. Changes to the LogEA will be vetted through the ELG process. Enterprise process changes will be brought to the attention of the AFLMA LogEA architects and will be analyzed to determine the impact on the logistics supply chain. The working LogEA architecture will be used to trace the possible impact of changes made to a particular program or business area. The suite of initiative architectures will allow architects to fully trace the path affected, identifying any area that will be impacted positively or negatively by the proposed change. AFLMA will provide recommendations to the ELG secretariat based on this analysis. The LogEA chief architect will interact with the secretariat and Logistics Working Group (LWG) members concerning analysis results on the LogEA. The AFLMA will also conduct proactive analysis of the LogEA and provide results of this analysis to the ELG secretariat. The secretariat will forward the recommendation to the LWG or Logistics Board (LB) depending on the magnitude of the proposed change. The final decision authority will reside with the LWG or LB. If the decision is made to change LogEA processes, the LogEA chief architect will ensure the architecture is updated to reflect the change. A detailed description of the change and a listing of affected organizations will be provided to the ELG secretariat.

Conclusion

The idea of developing architecture can be daunting at first. The purpose of this article was two-fold. While its

primary focus was to explain the value of architecture at the enterprise as well as systems level, it was also intended to *demystify* the process of architecting. With a basic knowledge of processes, stakeholders, and inputs and outputs, quality architecture can be generated. The LogEA architects at AFLMA are charged with supporting eLog21 initiatives and can be consulted for training, software access, and interim product critique.

As the LogEA matures the view of the logistics enterprise will transition from disparate processes to a comprehensive, holistic enterprise view. ELG initiative process owners and key identified logistics program personnel play a vital part in the success of this logistics transformation. The quality of each initiative's architecture development is directly correlated to the success of the aggregate LogEA. It is imperative that initiative leadership champion their architecture development projects. Further, with the increased popularity of EA as a management tool, the requirements are being enforced. Education and resources must be provided to architecting teams in order to generate effective architectures. Architecture isn't just for the greater good of the enterprise. Well developed architecture suites can pay dividends at the project level as well.

Notes

1. John Sherwood, Andrew Clark, and David Lynas, "Enterprise Security Architecture," white paper, Sherwood Applied Business Security Architecture Unlimited, 2009
2. National Institutes of Health, "What is Enterprise Architecture?" [Online] Available: <http://enterprisearchitecture.nih.gov/About/What/>, accessed 6 April 2010.
3. *Ibid.*
4. Air Force Instruction 33-4, *Enterprise Architecting*, 27 June 2006.
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6. Alice M. Long, "Enterprise Architecture: Origins, Tools and Insights," *Air Force Journal of Logistics*, Vol XXXII, No 4, 2009, 54.
7. M. S. Ederr, *Enterprise Logistics Governance Charter*, Washington, DC: HAF/A4I, 2010.
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9. *Ibid.*

Because of my wartime experience, I am insistent on the point that logistics know-how must be maintained, that logistics is second to nothing in importance in warfare, that logistics training must be widespread and thorough....

—Vice Adm Robert B. Carney, USN



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Jeffrey C. Bergdolt, AFLMA

Not Your Father's Logistics

Air Force logistics finds itself in a cycle of continual transformation so it can meet ever-changing requirements, streamline processes, maximize efficiencies, and develop leaner business models. Given this dynamic environment, it becomes increasingly important to make decisions based on solid data and thorough analysis. Providing that capability is the focus of logistics studies at the Air Force Logistics Management Agency (AFLMA).

In 2009, AFLMA continued its tradition of in-depth research by generating enterprise-level decision support through numerous research efforts. One such effort was the analysis of small arms requirements in the area of responsibility (AOR), and the transfer of over 4,000 weapons. This decision relieved many of those being deployed of the requirement to transport their weapon to the AOR and saves the Air Force over \$1.7M in movement costs quarterly.

In an effort to drive data-based decisionmaking to all levels of the Air Force, the AFLMA published the latest version of *Maintenance Metrics U.S. Air Force*. The handbook was released in May 2009.

Continuing the drive toward data-based decisions remains our focus in 2010. Two ongoing efforts with Global Strike Command and the Air Force Nuclear Weapons Center focus on developing integrated metrics for security forces, civil engineering, communications, and maintenance to help manage intercontinental ballistic missile maintenance and weapons storage areas. In our efforts to drive decisionmaking back to solid data, we have specifically focused on infusing logistics into the operational environment. Our work in the development of an aircraft availability calculation will shift the emphasis from the mission capability rate that has been used for years to an aircraft availability (AA) rate. The AA rate provides total enterprise visibility and fleet utilization as it accounts for all aircraft in the fleet, including those in depot status. This gives senior leaders a more comprehensive view of the total mission design series.



Air Force Logistics

The first step in evaluating the effectiveness of Air Force inventory control measures was to understand the system as it exists today. The AFLMA and Logistics Management Institute teamed up to create a matrix of the different types of assets in the supply system and how they are currently managed. The matrix provided a visual representation of the complexity of the supply system and was a starting point from which the logistics community can explore ways to streamline inventory control for ease of management in terms of both information technology systems and personnel responsibilities.

Captain Joseph A. Servidio, AFLMA
Major Shirley D. Crow, AFLMA

Logistics is the bridge between the economy of the nation and the tactical operations of its combat forces. Obviously, then, the logistics system must be in harmony, both with the economic system of the nation and with the tactical concepts and environment of the combat forces.

—Rear Admiral Henry E. Eccles,
USN

Strategic Thinking

During the past year, the Logistics Studies Division at the Air Force Logistics Management Agency (AFLMA) has been involved in strategy development for the Air Force. Specifically, division personnel have been working to develop the Air Force logistics strategy and the inventory control strategy.

Air Force Logistics Strategy

The Air Force logistics community developed a new governance structure known as the Enterprise Logistics Governance (ELG). ELG replaces the numerous groups that

emerged to manage developing initiatives. Prior to ELG's establishment, there was no overarching body to evaluate various initiatives, prevent overlap, and ensure all initiatives were focused in the same direction. Having a single ELG body will integrate enterprise logistics transformation efforts, optimize decisionmaking, enhance issue resolution, and align efforts to strategy. The ELG is made up of a secretariat and three bodies: the Logistics Working Group at the O-6 level, the Logistics Board at the MAJCOM A4 level (replaced the Logistics Board of Advisors), and the Logistics Council, made up of MAJCOM vice commanders (three- and four-star rank).

In support of this new governance structure, Headquarters Air Force A4I tasked AFLMA to assist with the development of an Air Force logistics strategy that links Air Force logistics to broader Air Force, Joint military, and national strategies, allowing ELG to prioritize and oversee enterprise logistics initiatives. AFLMA began the task of strategy development by capturing the thoughts of senior leaders at both the strategic and tactical



levels through a two-phased survey. The first phase of the survey was designed to take a look outside of the Air Force logistics community and focus primarily on the expectations of major customers and how they perceive logistics interplay with their organization. Following the first survey, a second survey questionnaire will be developed to examine our internal logistics community in order to identify the current logistics processes and procedures currently in place today. The point of the second survey is to determine how well the Air Force logistics community is responding to expectations. The results of these surveys will be presented to the Logistics Working Group to formulate the key elements of an Air Force Logistics Strategy, with final approval coming from the Logistics Board.

After the proposed methodology was presented to and approved by the Logistics Working Group, the logistics strategy development team began the first phase of the process. They started with a literature review of national security, defense, and military strategy documents as well as Department of Defense (DoD) and Joint publications to extract common themes relating to logistics in general and Air Force logistics in particular. From that document review, the team developed questions and distributed the survey questionnaires to two main groups of customers external to the Air Force logistics community.

- Air Force leaders external to logistics (Headquarters Air Force A1, Directorate of Air and Space Operations, Plans and Requirements A3/5, Directorate of Acquisition, SAF/AQ, and the Directorate of International Affairs, SAF IA)
- DoD logistics leaders external to the Air Force (Joint Chiefs of Staff J4, Defense Logistics Agency, and United States Transportation Command [US TRANSCOM])

The responses from the external survey provided the strategy development team with insight into customer expectations outside of Air Force logistics. The team evaluated the responses and merged the recurring themes into five major categories: Joint solutions, transformation objectives, acquisition improvement, enterprise supply chain management, and agile combat support. Finally, the external questionnaire results were presented to the Logistics Board for review. The following is a brief listing of the recurring themes identified during the external survey.

- Joint Solutions
 - The Joint logistics community should continue to focus efforts on increasing collaboration across the sister Services and government agencies and to facilitate DoD-wide improvements through the leveraging of knowledge.
 - As we continue to fight together as a Joint force, the Joint logistics community must ensure quality Joint planning and training is accomplished.
 - Develop and implement common processes and procedures that will enable total asset visibility utilizing intransit visibility and radio frequency identification systems across the DoD logistics network.
- Transformation Objectives
 - As individual entities within the Joint logistics community are becoming more integrated, consider developing a DoD-wide integrated supply chain.
 - Having a common logistics information system with the ability to share data across systems and networks would create process efficiencies within DoD.
- Acquisition Improvement, Enterprise Supply Chain Management, and Agile Combat Support
 - Provide world-class materiel support and product sustainment utilizing common spares and support equipment in order to facilitate rapid and sustained combat operations
 - Improve the partnership between the acquisition and logistics communities to ensure logistics is included as early as possible within the acquisition process

At the same time the team was preparing for the Logistics Board meeting, they began phase two of the methodology by reviewing internal Air Force documents at the Air Staff and MAJCOM level to extract logistics threads and to determine whether the Air Force is responding to external expectations. The team anticipates using the results of the internal literature review to develop a proposed Air Force definition of logistics and an internal survey questionnaire for the consideration of Air Force logistics leaders. The results will provide the basic structure of the Air Force logistics strategy. Once the strategy document is developed, the initiatives currently managed by the ELG will be evaluated to ensure they are aligned with the strategy, and new initiatives will be evaluated for alignment prior to being adopted by the ELG.

Inventory Control Strategy

The Air Force Supply Chain Management Board (now the Air Force Logistics Readiness Board) initiated a top-to-bottom review of how the Air Force manages supply inventories as a result of the Taiwan and Barksdale nuclear weapons-related materiel incidents. The review is part of the *Back to Basics* program proposed by Major General Gary McCoy.

The Taiwan and Barksdale incidents highlighted the need for more stringent inventory control measures, particularly for parts affiliated with the nuclear mission. Nuclear weapons-related materiel requires positive inventory control—meaning that all nuclear weapons-related assets must be physically identified and accounted for at all times, to include when they are in transit. This level of control is costly in terms of budget and manpower. The Air Force inventory control strategy must balance the risk associated with any level of control with the cost of that level of control for any given asset.

The first step in evaluating the effectiveness of Air Force inventory control measures was to understand the system as it exists today. The AFLMA and Logistics Management Institute teamed up to create a matrix of the different types of assets in the supply system and how they are currently managed. The matrix provided a visual representation of the complexity of the supply system and was a starting point from which the logistics community can explore ways to streamline inventory control for ease of management in terms of both information technology systems and personnel responsibilities.

The next step was to evaluate Air Force inventory controls with respect to existing requirements. A team of military, civilian, and contractor personnel from the Air Staff created a second matrix, the Inventory Control Matrix, to link types of supply assets to the control measures outlined in DoD directives, Air Force

instructions, Air Force manuals, and Defense Federal Acquisition Regulations. The team reviewed 125 regulations cover-to-cover and utilized 89 in the creation of the matrix.

The research question for the team members as they built the matrix was whether there is a problem with the Air Force or overarching DoD inventory control policy. The result of the document review was that the policy appears to be sound, with no major inconsistencies within and among logistics publications. The focus, therefore, should be on compliance rather than changes to the strategy.

The Inventory Control Strategy Matrix provides a centralized quick reference list for users to identify the appropriate policies and procedures for each inventory control process by commodity type. Ultimately the matrix will be incorporated into Air Force Manual 23-110, *USAF Supply Manual*.

As part of this effort, the AFLMA was tasked to identify DoD and Air Force inventory control standards to determine whether Air Force policy aligns with the standards and to evaluate the Air Force's performance against those standards. The AFLMA study showed that, with the exception of classified items, the Air Force collects data differently from DoD, and therefore Air Force standards are not aligned with DoD standards. As a result, it is unclear how well the Air Force is performing with respect to the DoD standards. Air Force inventory accuracy was first calculated by expendability-recoverability-reparability category (ERRC) code and controlled item code (CIC). Then it was recalculated by combining ERRC and CIC to recreate the commodity types referenced in the DoD and Air Force inventory accuracy standards. Overall Air Force inventory accuracy was below both the DoD and Air Force standards, indicating a problem with the standards, the inventory control procedures or policy, or compliance.

Despise the enemy strategically but take him seriously tactically.

—Mao Tse Tung

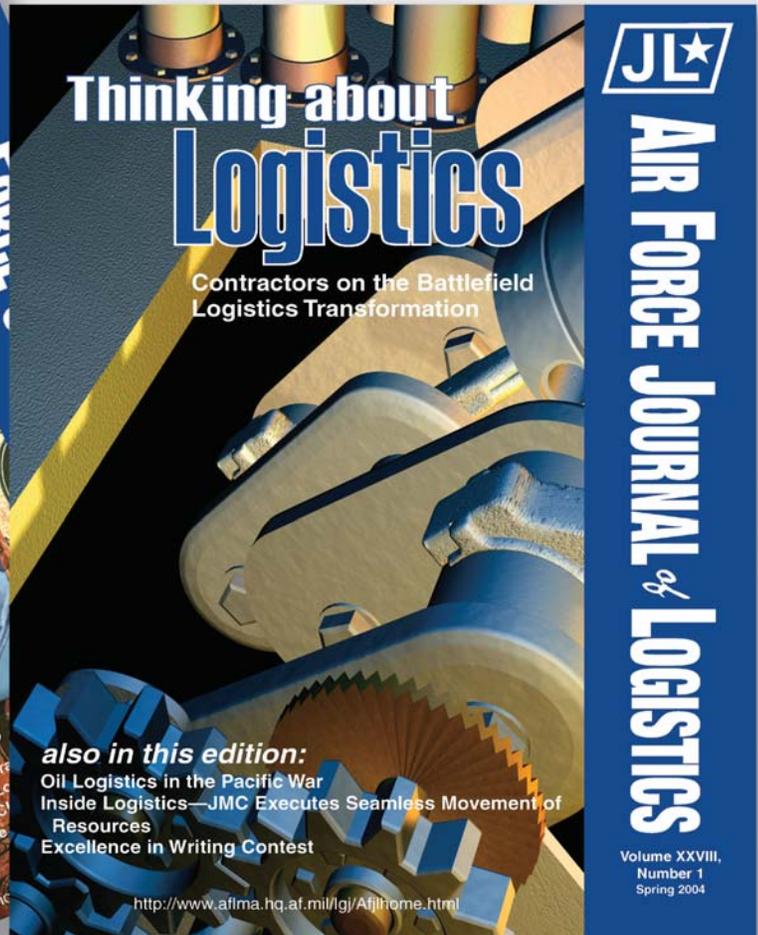
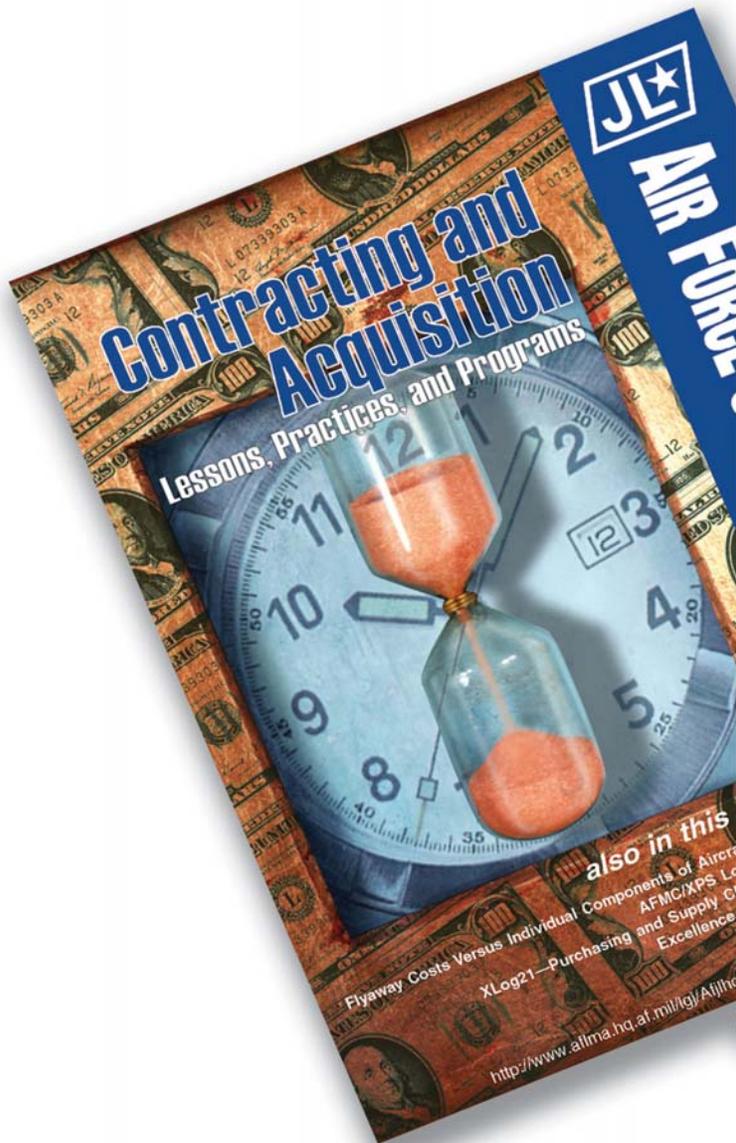
Never discount randomness.

—Benjamin Franklin

It will not do to leave a live dragon out of your plans if you live near one.

—John Ronald Reuel Tolkien

more than 2



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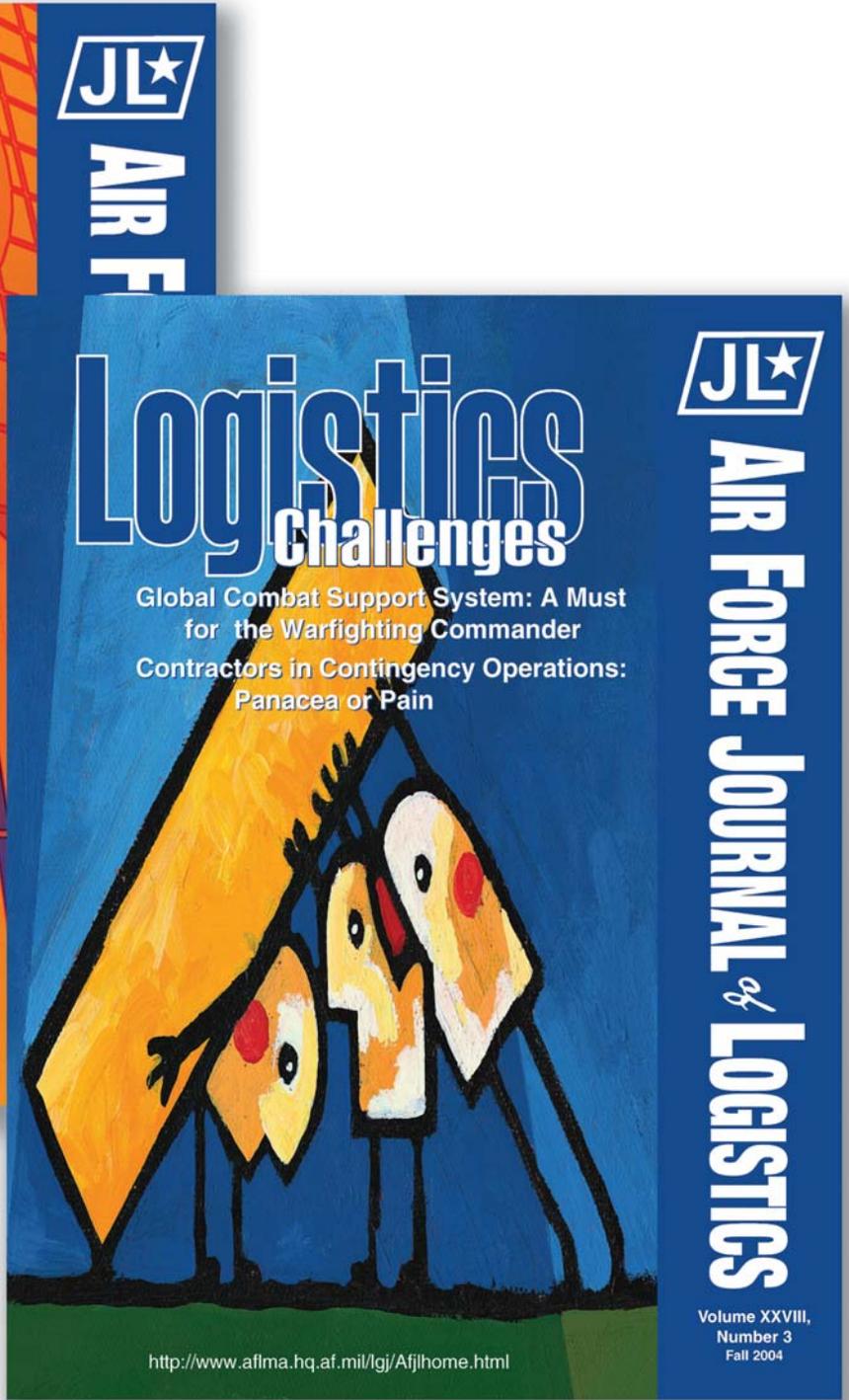
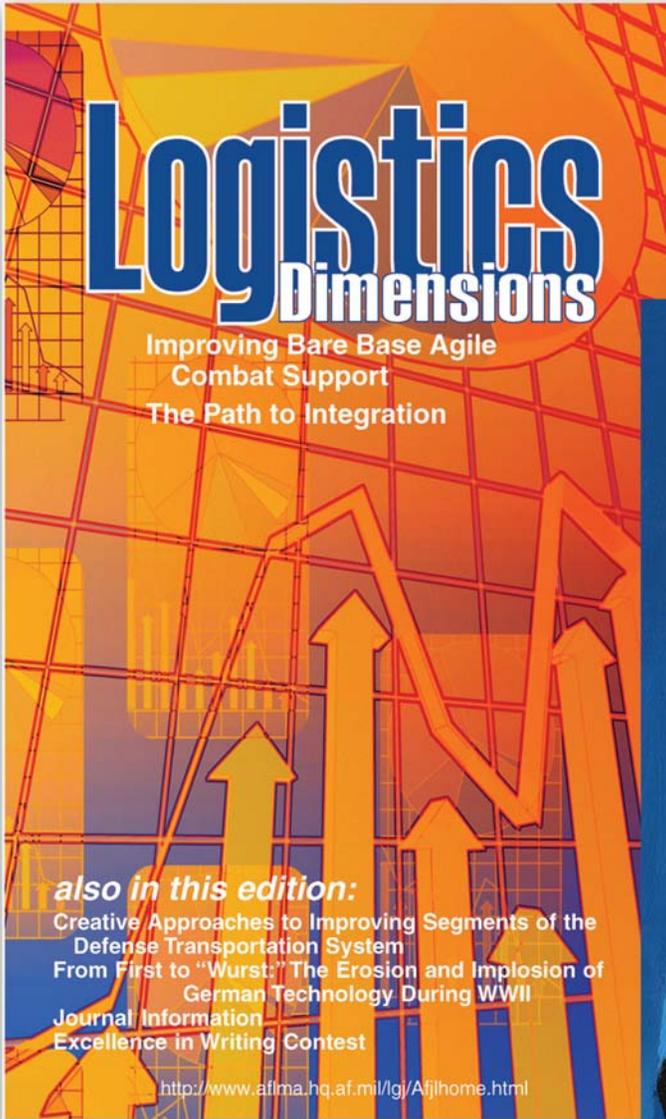
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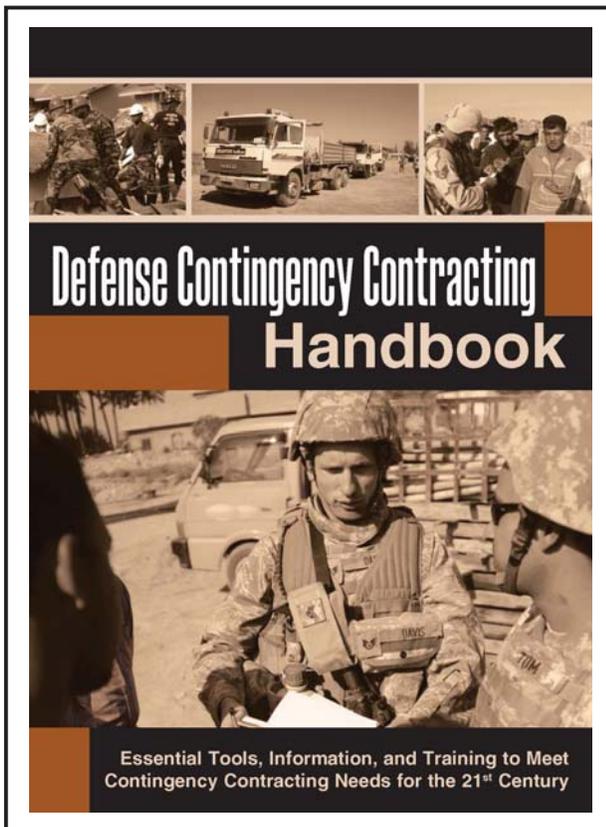
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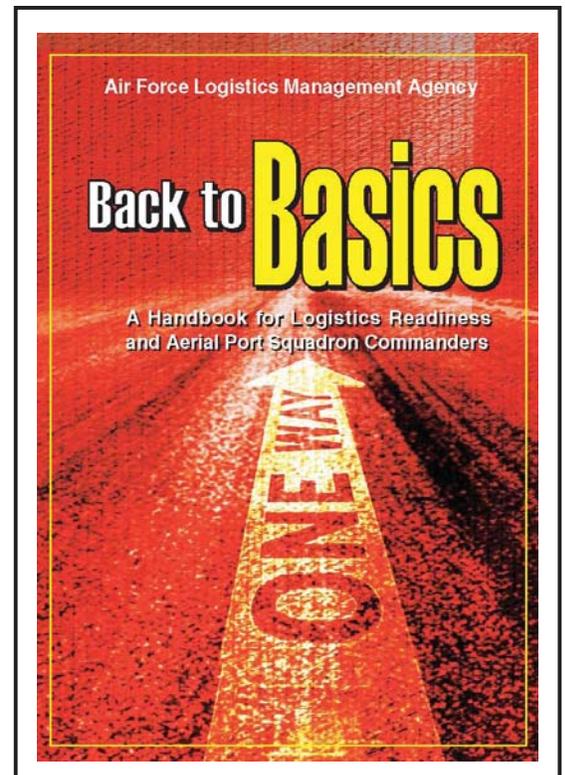
back to basics

This handbook is designed to serve as a quick reference functional guide. It is broken down by process, similar to the current logistics readiness squadron and proposed aerial port squadron structures. The areas covered include deployment and distribution, fuels management, materiel management, vehicle management, traffic management, and aerial port. The handbook also contains quick facts on high-profile logistics areas such as nuclear weapons-related materiel and the Air Force Global Logistics Support Center.

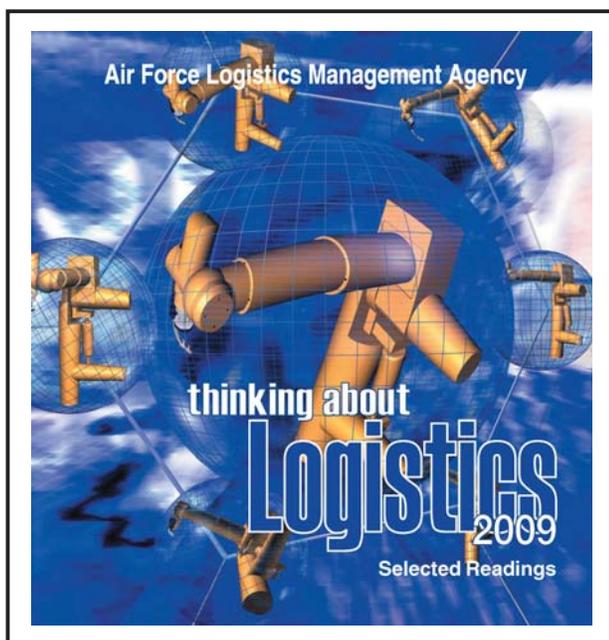


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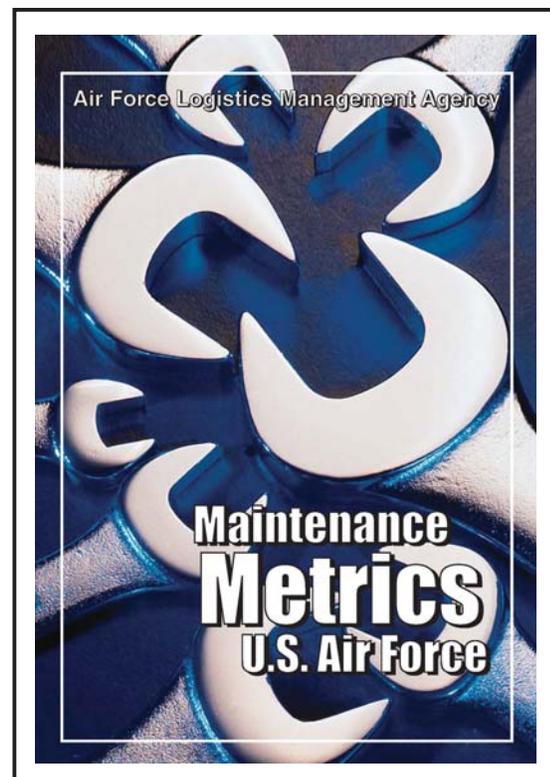


thinking about logistics 2009

Thinking About Logistics 2009 is a collection of 37 essays and articles—in three sections: Historical Perspective, Contemporary Thought and Issues, and Studies and Analyses—that lets the reader look broadly a variety of logistics areas. Included in the volume is the work of many authors with diverse interests and approaches. The content of *Thinking About Logistics 2009*, ranging across approximately 10 years, was selected for two basic reasons—to represent the diversity of the ideas and to stimulate thinking.

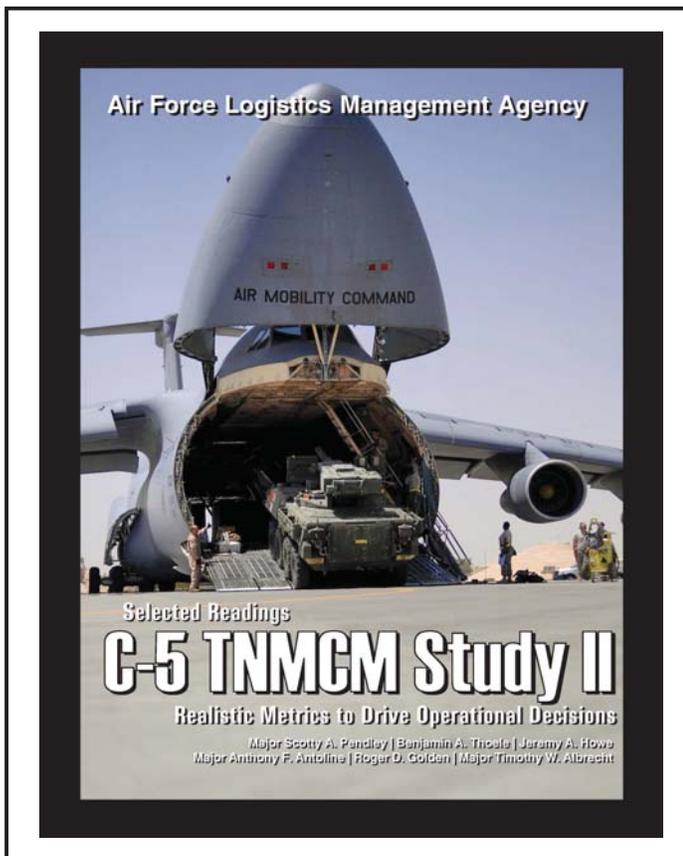
maintenance metrics

This handbook is an encyclopedia of metrics and includes an overview to metrics, a brief description of things to consider when analyzing fleet statistics, an explanation of data that can be used to perform analysis, a detailed description of each metric, a formula to calculate the metric, and an explanation of the metric's importance and relationship to other metrics. The handbook also identifies which metrics are leading indicators (predictive) and which are lagging indicators (historical). It is also a guide for data investigation. Limited quantities. New version in development.



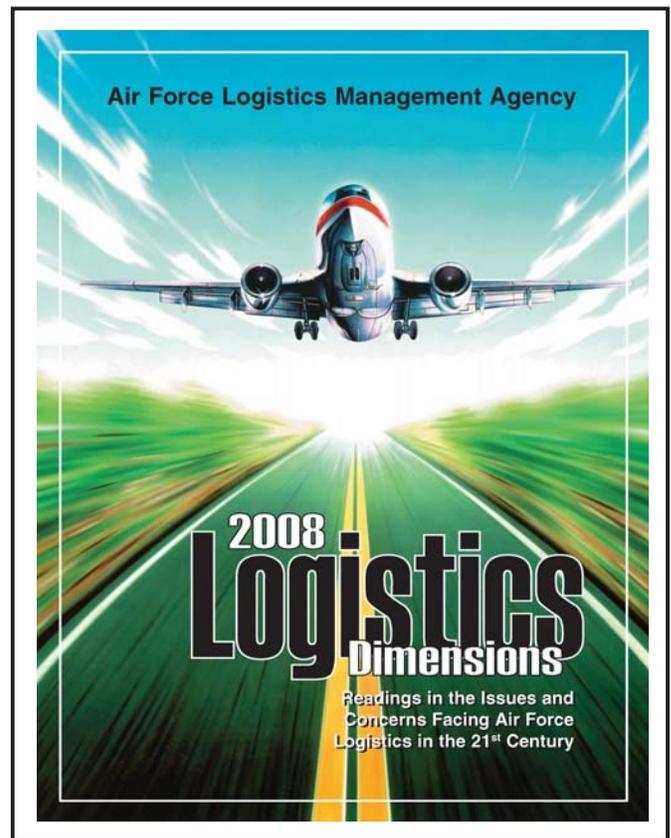
C-5 TNMCM study II

The *C-5 TNMCM Study II* proved to be a stern test of AFLMA's abilities and perseverance. The research addressed areas of concern including maintaining a historically challenged aircraft, fleet restructuring, shrinking resources, and the need for accurate and useful metrics to drive desired enterprise results. The study team applied fresh perspectives, ideas and transformational thinking. They developed a new detailed methodology to attack similar research problems, formulated a new personnel capacity equation that goes beyond the traditional authorized versus assigned method, and analyzed the overall process of setting maintenance metric standards. A series of articles was produced that describes various portions of the research and accompanying results. Those articles are consolidated in this book.



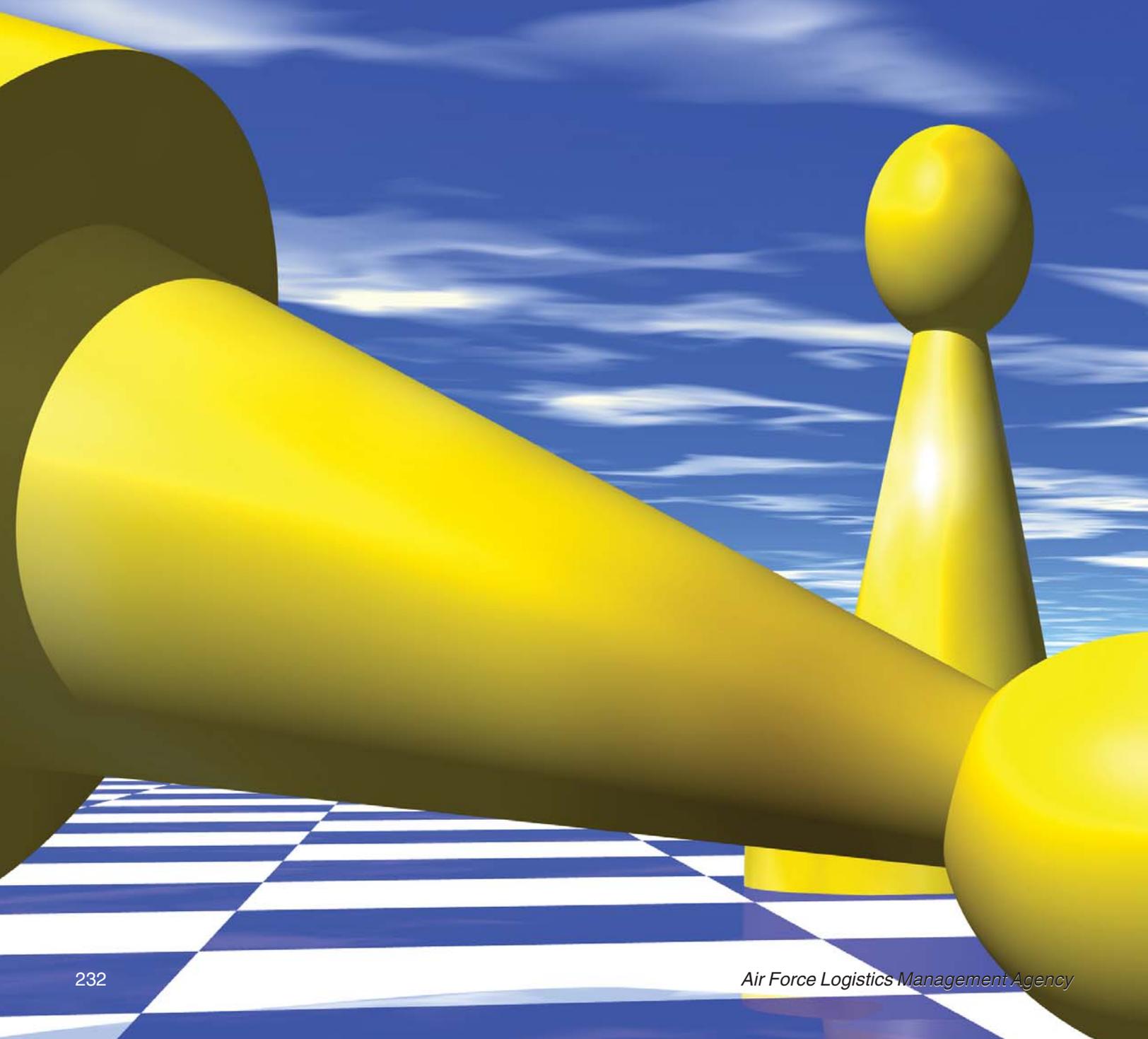
logistics dimensions 2008

Logistics Dimensions 2008 is a collection of 19 essays, articles, and vignettes that lets the reader look broadly at a variety of logistics concepts, ideas, and subjects. Included in the volume is the work of many authors with diverse interests and approaches. The content was selected for two basic reasons—to represent the diversity of the ideas and to stimulate thinking. That's what we hope you do as you read the material—think about the dimensions of logistics.



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Wargames, Mod



Captain Craig A. Lane, AFLMA

Planning, and Simulation

The Chinese Zodiac is a 12-year cycle in which each year is associated with a specific animal.¹ In 2009, it was the Year of the Ox. Proverbs 14:4 alludes to the significance of the ox —“Where no oxen are, the crib is clean: but much increase is by the strength of the ox.”²

Much Increase is by the Strength of the Ox

The ox is a great and powerful animal. It is associated with heavy workloads and production. In early ancient Israel, the ox was the single most valuable animal one could own. The ox was the animal used to plow and to turn a mill. To steal a man’s ox was just like stealing his livelihood. It was his most valuable possession, next to his servants and his wife.³



Wargames, Modeling, and Simulation

What Does This Have to Do With Wargames and Logistics?

The Ox analogy provides a nice segway into logistics and the past year in Wargames. We did some of that heavy work to help get logistics more of the attention it deserves over the course of the past year. To say 2009 was busy for Wargames would be an understatement. From the Chief of Staff of the Air Force (CSAF) Title 10 games to the capstone events for professional military education, the Air Force Logistics Management Agency (AFLMA) has supported a wide variety of wargames for over a decade. Additionally the mission expanded mid-year to include modeling and simulation, which proved to be as challenging as it was rewarding.

Wargames provide an avenue to inject realistic and feasible agile combat support (ACS) input into operational scenarios. Depending on the game, the output is used to assist the CSAF with future funding and force structure decisions. Any logistics planner who has been in *the business* for a decade or more will tell you that logistics is generally assumed away. However, the 2009 Future Capabilities proved to be a milestone for the logistics community. For the first time, a Title 10 wargame included a dedicated energy cell staffed with subject matter experts from the Secretary of the Air

Force/Energy, Environmental, Safety, and Occupational Health (SAF/IEE) and the Office of the Secretary of Defense. Suffice it to say the results of the game highlighted the real importance of energy (fossil fuel) and the logistics supply chain. Increasingly, senior leaders are recognizing how logistics can impact the operational mission. The result is a desire for increased logistics fidelity in these games to produce more realistic and plausible outcomes.

The modeling and simulation (M&S) mission was a growth industry in 2009. As part of the EXWAREX sub-integrated process team (IPT), we assisted Headquarters Air Force, Directorate of Transformation (AF/A4I) with the development of the Logistics Modeling and Simulation Strategic Plan signed in October. We also completed an inventory of existing logistics models and tools. These endeavors serve several purposes, not the least of which is the overall benefit to the entire community. We quickly learned that a lot of great people are doing

great things with great tools—but those tools are not common knowledge to everyone who could benefit from their use. Part of our mission was to centralize an information database about the existence of these M&S tools and what they can do and then make the information readily available to everyone. Efficiency is the buzz word associated with Air Force Smart Operations for the 21st Century, but in this case, it was a driving force. Despite all of the great work going on in the Air Force, there is also significant duplication of effort. We have begun the work of reducing that duplication in the logistics community by centralizing and publicizing the tools available. We also worked with AF/A4I to develop a process that validates new requirements and helps reduce the amount of duplication.

The M&S mission also led to our involvement with the Expeditionary Site Selection (ESS) IPT. Working with this IPT provides an example of the tie between wargames and M&S. The ESS IPT is working to develop a tool that would become a one-stop-shop for site selection and force beddown. When a combatant command (COCOM) has decided on a course of action and wants to position forces, this tool would provide log planners the ability to give the COCOM a valid and

reliable sight picture of the feasibility of a particular base. In this context, the tool helps us provide timely and valid responses while increasing the fidelity of ACS/Logistics play in wargames.



So, what does the ox have to do with logistics? Here in the Wargames Division, we view logistics as the ox of the Air Force—exceedingly valuable to the mission—whatever that mission may be. If you lose logistics, you lose the mission. We work daily to ensure the community is given the visibility and consideration in wargames so that the real-world prosecution of any mission is successful.

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Logistics Enterprise Reliance on Cyberspace

As warfighting domains, air, land, and sea are largely defined by geography or range of operation. Space and cyberspace, however, are cross-cutting domains, absolutely global in nature and indifferent to physical terrain or lines drawn on a map. Moreover, space and cyberspace are domains in which the United States can expect to be challenged.

Captain Craig A. Lane, AFLMA

Introduction

...the Air Force must actively protect itself against emerging vulnerabilities. Our operations cannot grind to a halt for want of a degraded or denied system, or a scarce resource.

—Gen Norton Schwartz, Air Force
Chief of Staff

In October 2009, the Air Force Wargaming Institute hosted the Air Force Chief of Staff's (CSAF) Future Capabilities Game 2009. The Future Capabilities game is one of two Title 10 wargames designed to help participants understand what capabilities and force structure the Air Force should possess in the out years (20 to 25 years in the future). The event was attended by several active duty and retired general officers, Department of Defense (DoD) employees, and other government agencies, allied nations, and think tanks.¹ The intent of the game was not to identify a winner or loser, rather it was to identify areas for increased focus and fidelity. One of the identified areas was cyberspace and its interaction and impact on other functional areas. While the game focused

primarily on operational concepts and platforms, logistics was considered, in a broad sense, at the strategic level.

The Challenge

The line between disorder and order lies in logistics.

—Sun Tzu

As the Air Force logistics enterprise increases its reliance on cyberspace and information technology (IT)-centric systems, the potential for significant negative impacts to the mission also increases.

Assumptions

The primary assumption used in framing this article is that any IT system operating on the Air Force Nonclassified Internet Protocol Router Network (NIPRNet) is vulnerable, and therefore susceptible to some form of cyber threat or attack.

Overview

There is little any Air Force logistician does on a daily basis that doesn't require some type of computer system or program to provide some level of capability. In turn, this computing capability gives our force the technological advantage across a multitude of

military operations in peace and war. One system, the Standard Base Supply System (SBSS), is used to help illustrate the challenge over time.

Evolution and Dependence

Since the 1960s, the Air Force logistics community has depended on cyber infrastructure in some form or fashion. At one time, archaic supply processes required the user to handwrite transactional data or use punch cards to track assets in the supply system. These cards were time consuming and highly susceptible to human error. The punch card was *fed* into the computer and the data was transmitted up the supply chain. This simple, basic process was used well into the 1980s.

In the late 1980s and early 1990s, the Standard Asset Tracking System (SATS) was brought online. The SATS system automated asset tracking throughout the supply system from receipt to issue. Barcodes and hand-held laser scanners eliminated the punch cards. Scanners were docked and the information was automatically transferred to a server. While this technology streamlined processes and improved efficiency, it also increased dependence on IT systems. If the computer went down for any reason, alternate processes had to be utilized to maintain integrity in the supply system.

Over the past decade, transformation initiatives within the Department of Defense (DoD) and the respective Services have driven leadership to focus more on *leaning* out business processes in an effort to maximize efficiency and effectiveness. Within the Air Force, the impetus for transformation across the logistics community began with Expeditionary Logistics for the 21st Century (eLog21). The backbone of the eLog21 initiative is Logistics Enterprise Architecture (LogEA).² The eLog21 campaign and LogEA set the foundation for the Air Force logistics community of the 21st century.

Today, the Air Force's answer for transformation within logistics is the Expeditionary Combat Support System (ECSS). This is the key enabler of the eLog21 initiative. ECSS is an enterprise resource planning system designed to consolidate more than 200 legacy systems from across the Air Force logistics community, with a projected end-state in excess of 750,000 primary, secondary, and tertiary users. This commercial-off-the-shelf technology solution is designed to facilitate data sharing across the entire Air Force logistics community from the procurement of raw materials to the finished product.

While this new technology sets the stage for the future, it creates a significant vulnerability for the logistics enterprise. The ultimate implementation of ECSS will effectively put all of the Air Force logistics community's eggs in one basket. Additionally, the cyber infrastructure required to support ECSS is not controlled by logistics. Not only is there vulnerability in adopting a single system to connect end-to-end business processes, there is vulnerability in that system being completely reliant on infrastructure that is not organically controlled.

As the logistics enterprise evolved, the systems which underpin that enterprise evolved as well. They are now increasingly complex, both in design and capability. Systems are networked globally and the programs are Web-based, providing operational efficiency and effectiveness. Thousands of users can run Web-based programs simultaneously and work with real-time data enhancing mission effectiveness. In the not-so-distant future, there will be one system of record to control the end-to-end business processes of the entire logistics enterprise.

This is a simplistic explanation, but drives several key points.

- Computers have been part of Air Force processes to some degree for nearly five decades.
- The evolution and complexity of IT systems creates both efficiency and vulnerability.
- There is a clear and significant dependence within the Air Force on cyber/IT-centric capabilities.
- Centralization or consolidation of systems creates risk.
- Reliance on infrastructure that is not organically controlled creates risk.

The logistics community has been spoiled by the dependability and availability of their systems. In the absence of these systems, the resident knowledge and capability to implement manual work-around procedures has, over time, deteriorated. Technology served as justification for force shaping efforts and career field mergers, thus diminishing valuable pockets of corporate knowledge. Together, these issues create a significant vulnerability for the Air Force and its logistics enterprise.

Denial, Degradation, and Disruption

From the author's perspective, a cyber attack could have one of three broad effects: denial, degradation, or disruption. Denial implies a complete loss of access to either the system itself or to the network it resides on

and depends on for global use. Degradation implies a partial loss of access to the system or network. Similar to degradation, disruption provides a means for attackers to manipulate the system or network in such a way that precludes the user from utilizing either with ease or to the fullest capacity. This type of effect can manifest itself as malicious code in an e-mail or in corrupted data within the system. Regardless of the broad effect caused by the attack, there is the potential for significant impact at all levels of the enterprise (strategic, operational, or tactical). An attack in any specific area at any level is likely to produce ripple effects up and down the chain.

Importance of Cyber-Domain to Logistics

There is no argument among experts about the importance of logistics with respect to mission success.

There are hundreds of books dedicated to the subject and spanning wars throughout history. The proverbial research gap exists in tying together the importance of the relationships between logistics and cyberspace with the impact on mission accomplishment. The author was unable to find any existing research which specifically quantifies the impact of logistics with regard to mission accomplishment in a cyber-degraded or denied environment. There is also no evidence of significant qualitative work completed on the subject.

In a recent cyberspace leadership article published in the *Air and Space Power Journal*, General Kevin Chilton wrote the following excerpt.³

As warfighting domains, air, land, and sea are largely defined by geography or range of operation. Space and cyberspace, however, are



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cross-cutting domains, absolutely global in nature and indifferent to physical terrain or lines drawn on a map. Moreover, space and cyberspace are domains in which the United States can expect to be challenged. They are domains that are vital to civil and commercial activities, and are essential to the success of the global economy—but they are also critical to military operations. The global cyberspace domain is where information is moved today—military orders, logistics, and operational effects all depend on cyberspace. Freedom of action in cyberspace is essential to both warfighting and our national security.

With this in mind, it is important to note the significance of the fact that the challenge crosses all disciplines and levels of the Air Force mission. Logistics

Attack	Target	Utility	Level of Expertise Needed
Simple Unstructured	Single System or Network	Disruption	Low
Advanced Structured	Multiple Systems or Networks	Disruption or Destruction of Data	Medium
Complex Coordinated	Multiple Networks	Disruption or Destruction of Systems	High

Table 1. Cyber Attack Categories⁴

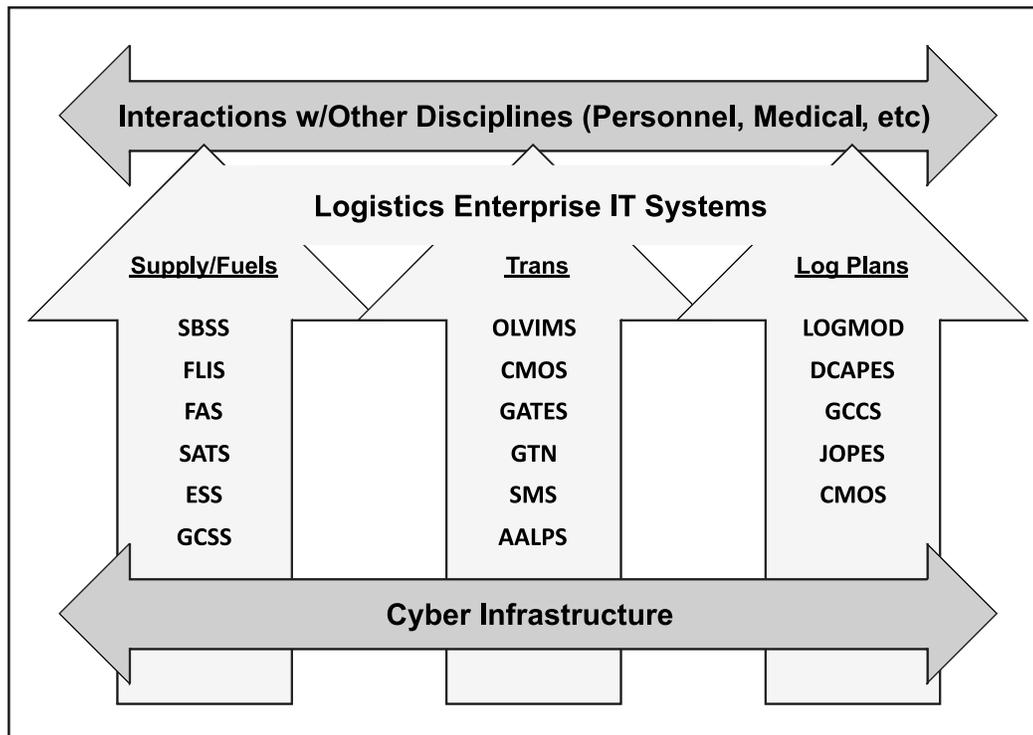


Figure 1. Cross-cutting Relationships

IT systems reside and operate in a domain over which the logistics community has no control.

The cyberspace operating environment is expansive, therefore the vulnerabilities that the Air Force logistics systems are exposed to are numerous. Table 1 depicts the broad categories of potential attacks which could ultimately impact Air Force logistics systems.

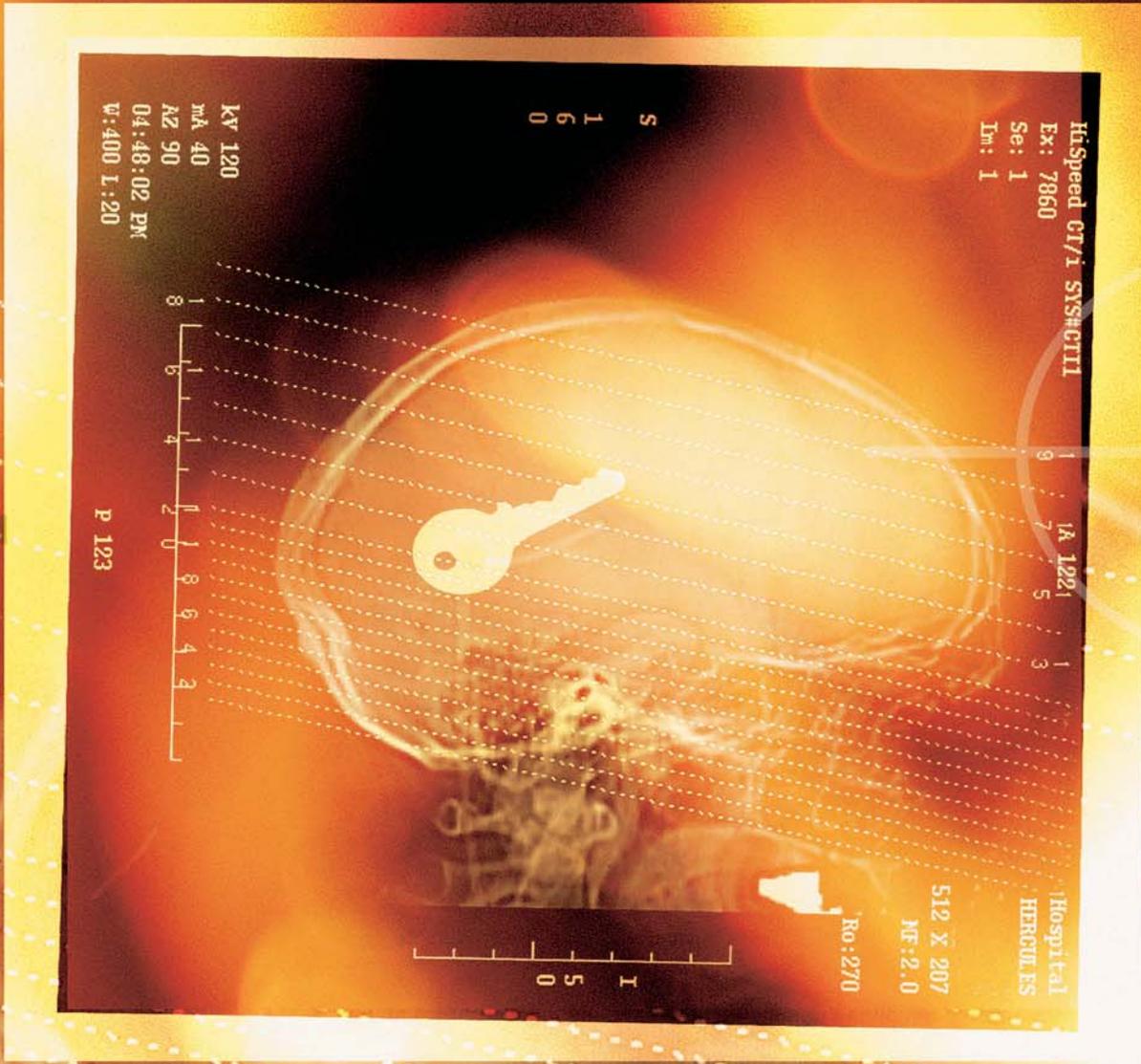
When discussing the impact of a cyber attack, it is important to note that a cyber attack does not necessarily imply a complete denial of service. Service degradation or disruption can also create significant impacts across the logistics enterprise. Figure 1 illustrates the cross-cutting nature of the relationships involved.

Conclusions

As the Air Force adopts and implements technological solutions to facilitate transformation, the risk associated with these solutions increases. Logistics provides the means with which we generate weapons to accomplish military and political objectives. Logistics enables strategy and it enables plan execution. Logistics is increasingly cyber-centric. It is a system of systems, dependent on capabilities and infrastructure provided by other communities. A logistics computer system without a network is no more useful than an aircraft without fuel. When the legacy systems are turned off and ECSS is brought fully online, the logistics community will have a single source of success and, potentially, a single source of failure.

Notes

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3. General Kevin P. Chilton, "Cyberspace Leadership: Towards New Culture, Conduct, and Capabilities," *Air and Space Power Journal*, Vol XXIII, No 3, Fall 2009.
4. Lieutenant Colonel Timothy F. O'Hara, *Cyberwarfare/Cyber Terrorism*, Carlisle Barracks, Pennsylvania:US Army War College, 19 March 2004.



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Thomas Gage, PhD, AFLMA

Analysis

Connection

A famous quote (something we could really agree with) was intended to go here, but in looking over collections of quotes, your author noticed that many quotes were just plain stupid, others demonstrably false, and many (if not most) quotes directly contradicted other quotes. Counting a good quote as a plus, and a bad quote as a minus, the algebraic sum was pretty close to zero—in fact, it might be somewhere left of zero. So, there are no famous quotes to grace the beginning of this piece (as much as we wanted to put one here). And please don't send us any good analysis quotes—we are drowning in quotes (even analysis quotes)—most of them derogatory (“never trust a thinker”). With that said, we continue to believe that analysis adds value.



LGY continues to *make do* with fewer and fewer people, as does the Air Force Logistics Management Agency (AFLMA) and many other agencies in the Air Force. Our people are *who we are* and *what we can do*. Here is what they have been doing for the Air Force this past year.

Major Jennifer Walston became A4I's Field Grade Officer of the Quarter for two quarters in 2009. She also won runner up as Analyst of the Year at A2L2 (which used to be called AFORS—Air Force Operations Research Symposium). She continues to work on her *most traveled analyst in LGY* badge, although she's long since outdistanced any possible competition. She was handpicked for a team providing analytic support for the Nuclear Weapons-Related Materiel End-to-End Assessment (NWRM ETE) for six weeks at Wright-Patterson Air Force Base and continued to help shape the reinvigoration of Air Force handling of *nuclear stuff*. The purpose of this assessment was to review six new nuclear incidents, positive inventory control (PIC) of NWRM, conduct an audit and assess the status of PIC activities, and to determine whether NWRM guidance has been effectively implemented and is resulting in improved management of NWRM throughout the Air Force nuclear enterprise. Three incidents during team deliberations tested and validated guidance the team shaped, continuing to spread the use of analytic tools and clear thinking—leading an Air Force culture change, we hope. Major Walston will deploy to Iraq in September.

Captain Chris Arendt has learned more about the Logistics Composite Model (LCOM) than he probably wanted to know. In fact, he has written code to implement an LCOM model for the AFLMA's Aircraft Aircrew Tasking System project. This model will give maintainers a way to estimate what they really can do with their manpower. The model is a follow-on project to the work done by Ms Lizzol who helped Air Mobility Command (AMC) maintainers and flying crews. His work was briefed to and lauded by a general officer. It's now becoming an AMC-wide maintenance fleet planning tool. Captain Arendt supported an Expeditionary Combat Support System (ECSS) asset management study, mapping data elements through 52 legacy systems, giving ECSS builders a better idea of what they will need to do to provide asset tracking capability for the Air Force. He also helped our subject matter experts study wheels and tires—one of those *logistics things* most won't think about until they can't fly. How many wheels? How many tires? His analysis

answers those questions and the warfighting flying units' requirements were validated. He provides essential modeling and simulation (M&S) expertise for the AFLMA. He is one of only two certified M&S professionals at the AFLMA. His razor sharp operations research skills complement our subject matter experts to give AFLMA an edge in *figuring it out*. As well, Captain Arendt is mentoring our new second lieutenants, giving them plenty to do and leading a group of real *hard chargers*.

Headquarters AF/A9 (the Air Force analyst *head shed*) has decreed that all military Air Force analysts entering into an analyst career will attend the Army's 14-week ORSA MAC (Operations Research /Systems Analysis Military Applications) course at Fort Lee, Virginia. Our first sacrifice was Second Lieutenant Eric Almeida, who helped with a variety of projects as an LGY analyst. He debugged the AMC-wide Mx fleet planning tool, directed a contracting 1:1 dwell AEF [aerospace expeditionary force] restructuring verification, which was briefed to an SES at SAF/AQC, and corrected some invalid procedures in formulation of RAND-based manpower effectiveness calculations. He then attended ORSA MAC. We thought he would do well, and indeed he did. He was the number one distinguished graduate. Second Lieutenant Almeida also won the second annual Military Operations Research Society Symposium (MORSS 78) 5K run, in 18-plus minutes. This was a non-flat run—uphill the first half, then back the same way. Dr Gage helped direct traffic, so he was in a position to see all the runners as they came by, and noticed that Second Lieutenant Almeida was in front the entire time, and didn't look like he was working hard—but number two was definitely puffing (as was most everyone else).

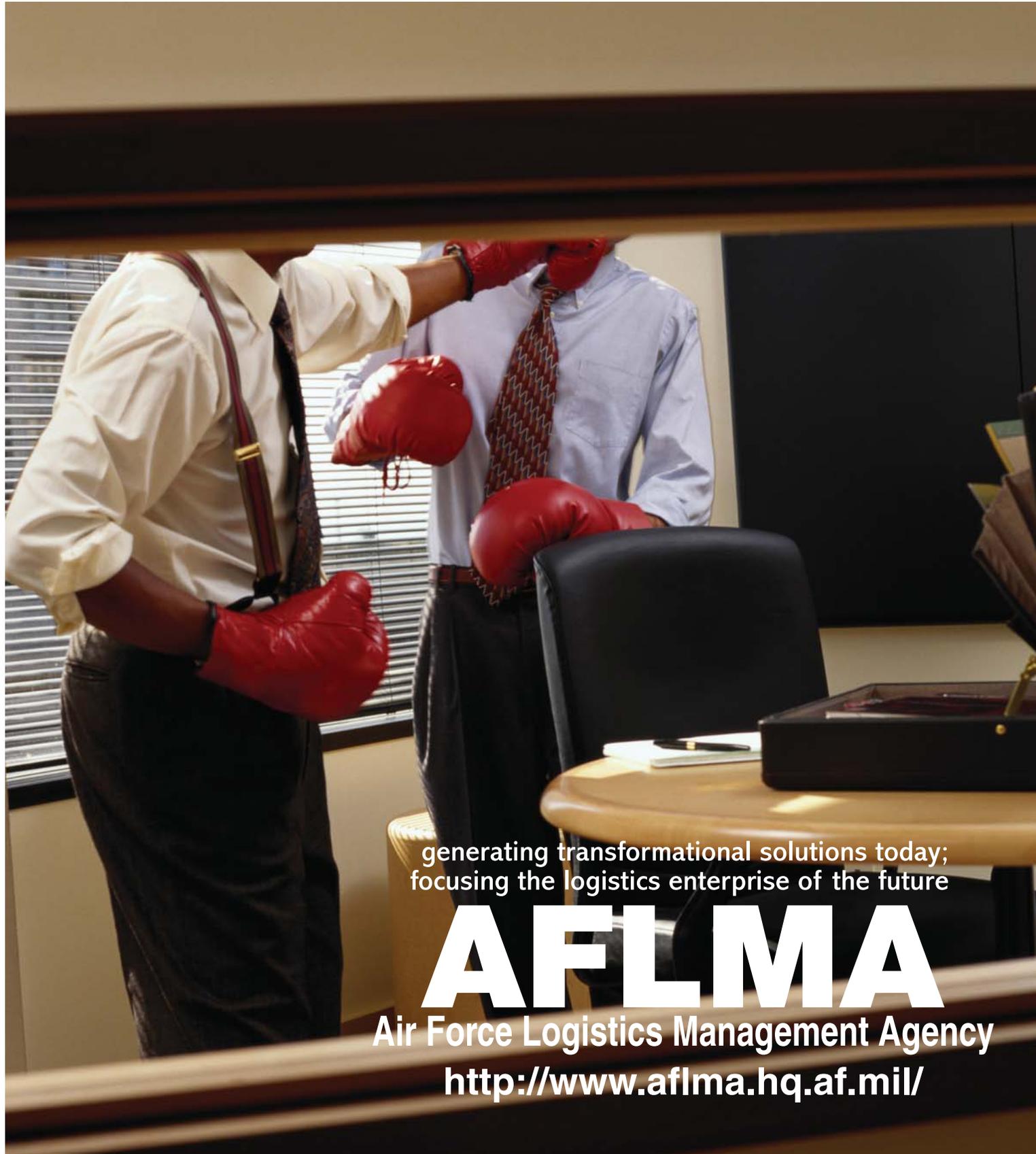
Gale Bowman continues to support many projects with quick data pulls and data analysis, including RBL. Ms Bowman also won recognition for her second-to-none unit security program. She is now our official unit security manager. During our last unit compliance inspection, Ms Bowman received an award from the IG inspection team recognizing that AFLMA has the best security program for a long ways around (So don't give her any grief. She might secure you to a yardarm somewhere.) Ms Bowman finished three courses toward an MBA and coauthored an article on inventory of NWRM for the *Air Force Journal of Logistics*.

Some of her studies include "RAMP versus SBSS" (whose data is better?), the "Second Destination Transportation" study (why do we keep getting charged

for stuff we didn't know we did?), "AOR (area of responsibility) Weapons Inventory, Quantifying the Extent of MICAPs" (is it a big deal? For individual units, yes, but maybe not for the Air Force), and

"Equipment Authorization Fluctuations" (why do they change more than we think they should?).

The results included saving \$1.7M per quarter by leaving weapons in AOR and not transporting them



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back (why did we keep bringing them back, anyway?) The decreasing requirements churn will reduce unneeded buys by potentially \$44M to \$78M.

John Dietz continues to *RBL* (yes, it's now a verb), checking revised code and making quarterly runs to help the Air Force decide which levels of what stuff should go where. Mr Dietz manages the testing of all upgrades to the RBL application, which happens every six months. There are frequently significant changes that need to be vetted—which he does with great attention to detail and veracity. Mr Dietz is a dedicated “I” dotter and “T” crosser, and he will meet all of the deadlines in addition to *getting it right*. Mr Dietz also runs RBL to examine, on an as-needed basis, each contingency high-priority mission support kit (If we move this stuff from base X to base Q, will it kill the rest of the Air Force on back orders, or can we live with it?). The computer runs are tedious, time-consuming and exacting, and Mr Dietz does this job admirably. In addition, Mr Dietz has independently led the AFLMA safety program to a very high level. He has received plaudits from our wing safety inspector, as well as earning an individual recognition award for the AFLMA safety program during our recent unit compliance inspection. Also, on his own initiative, Mr Dietz created and maintains a database of weight and cube information which can be and has been used for studies not only at the AFLMA, but at other agencies as well. Need to know how many aircraft loads it will take? This is what you need.

Late in 2008, Ms Jennifer Lizzol came to work at the AFLMA from the Headquarters Air Force Test and Evaluation Center. Her work on integrating maintenance skill levels into the Aircraft/Aircrew Tasking System will help quantify Air Force maintenance units' capacity for grinding out airplanes and increase sortie generation predictability. She presented her work on “Net Effective Personnel for Mx” at the Air Force A2L2 conference, and her paper was voted one of the top five papers for the conference. Her superior performance led to being AFLMA civilian of the quarter for both second and third quarters of fiscal year 2009. She volunteered for Ulchi Freedom Guardian, a Joint military exercise between South

Korea and the United States. It is preparation for the handover of wartime operational command to Seoul in 2012 and focuses on defending South Korea from a North Korean attack. Her work garnered a letter of commendation. In January of 2010, Jennifer deployed to Al Udeid, Qatar. She still is on the hook to provide AFLMA with a briefing about her time in the Combined Air Operations Center (CAOC), but she has told us a little bit about what she did. Ms Lizzol was an Iraq assessment analyst for the operational assessment team in the Strategy Division of the 609th CAOC. While the title says “Iraq,” she worked on both Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) assessment products, generating analytic slides for both theaters to the “Week in Review,” the “Month in Review,” and the weekly “CENTCOM J3 Air Ops Brief.” For her work in Al Udeid, she was nominated and won March's Deployed Civilian of the Month for the 609th CAOC. Her work had a direct impact on OIF drawdown and OEF build-up planning efforts.

Captain Flory and First Lieutenant Iubelt left us during this last year. Captain John Flory left the AFLMA after March of 2009, to seek fame and glory by pursuing a PhD in statistics in Pittsburgh, Pennsylvania. We wish him all the best. First Lieutenant Frank Iubelt left us just after the beginning of 2009 to go work with the National Security Agency. (Can we tell you that?) At any rate, we've seen both of them since they left, and they appear to be doing well and interested in their new work.

Dr Gage continued to serve as LGY division chief and study advisor. He also reviewed completed reports and volunteered to help with the second annual MORSS 5K by setting up and directing runners at a critical turn. That's why he got to watch Second Lieutenant Almeida as he passed at the head of the pack. Dr Gage also participated in the Air Force Analysis Community career progression survey (how can we grow these people called analysts?). Dr Gage also put together the AFLMA Modeling and Simulation Web page. Feel free to visit it at <http://newpreview.afnews.af.mil/aflma/model/index.asp>.

No form of transportation ever really dies out. Every new form is an addition to, and not a substitution for, an old form of transportation.

—Air Marshal Viscount Hugh M. Trenchard, RAF



ingenious

Ingenuity and creativity go hand in hand. They help us support a diverse—flight line to headquarters—customer base and take on and solve the toughest logistics problems facing the Air Force. They also help us develop the high-quality, tailored solutions our customers, partners, and competitors have come to know.

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AFLMA Facts

Articles Published

Journals

Alice Marie Long, "Enterprise Architecture: Origins, Tools, and Insights," *Air Force Journal of Logistics*, Vol XXXII, No 4.

Edward O. Bennett Jr, "Air Force Munitions ISO Management: Logistics Enterprise for Containers," *Air Force Journal of Logistics*, Vol XXXII, No 4.

Jennifer G. Walston, "Capturing Risk in Solution Prioritization," *Air Force Journal of Logistics*, Vol XXXII, No 3.

Rodney E. McCraine, Kirk A. Patterson, and Sharon Gibson Heilmann, "Perceived Transfer of Basic Combat Skills in the US Air Force," *Air Force Journal of Logistics*, Vol XXXII, No 3.

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Edward O. Bennett Jr, "Air Force Munitions ISO Management: Logistics Enterprise for Containers," *Thinking About Logistics 2009*, Montgomery, Alabama: Air Force Logistics Management Agency, 2009.

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Scotty A. Pendley, Benjamin A. Thoele, Timothy W. Albrecht, Jeremy A. Howe, Anthony F. Antoline, and Roger D. Golden, "Aligning Maintenance Metrics: Improving C-5 TNMCM," *Thinking About Logistics 2009*, Montgomery, Alabama: Air Force Logistics Management Agency, 2009.

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at a Glance

Quick summary of AFLMA activities and results

Edited Research or Peer-Reviewed Works

AFLMA Year in Review 2008, James C. Rainey and Cindy Young, eds, Montgomery, Alabama: Air Force Logistics Management Agency, 2009.

Air Force Journal of Logistics, Vol XXXII No 3, James C. Rainey, Cindy Young, and Roger D. Golden, eds.

Air Force Journal of Logistics, Vol XXXII, No 4, James C. Rainey, Cindy Young, and Roger D. Golden, eds.

Air Force Journal of Logistics, Vol XXXIII, No 1, James C. Rainey, Cindy Young, and Roger D. Golden, eds.

Air Force Journal of Logistics, Vol XXXIII, No 2, James C. Rainey, Cindy Young, and Roger D. Golden, eds.

Back to Basics: A Handbook for Logistics Readiness and Aerial Port Squadron Commanders, James C. Rainey, Cindy

Young, Shirley D. Crow, Jeffrey C. Bergdolt, and Roger D. Golden, eds, Montgomery, Alabama: Air Force Logistics Management Agency, 2008.

Contingency Contracting: A Joint Handbook for the 21st Century, James C. Rainey, Cindy Young, and Roger D. Golden, eds, Montgomery, Alabama: Air Force Logistics Management Agency, 2009.

Maintenance Metrics U.S. Air Force, James C. Rainey and Cindy Young, eds, Montgomery, Alabama: Air Force Logistics Management Agency, 2009.

Thinking About Logistics 2009, James C. Rainey, Cindy Young, and Roger D. Golden, eds, Montgomery, Alabama: Air Force Logistics Management Agency, 2009.

AFLMA Results

Meeting Air Force Logistics Needs

2009 Completed Projects

67 Total Projects

Maintenance

- 7 Studies

Readiness/ Transformation

- 22 Studies

Contracting

- 3 Studies

Wargames

- 12 Studies

Analysis

- 8 Studies

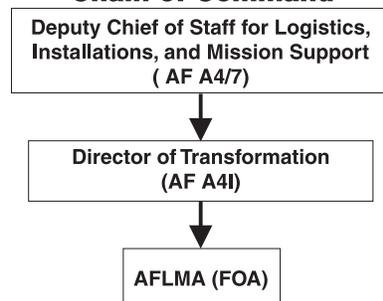
Publishing

- 15 Projects

Command Relationships

The Air Force Logistics Management Agency is a field operating agency reporting to the Director of Transformation, Headquarters, United States Air Force.

Chain of Command



2009 Completed Efforts

Books and Monographs

Contingency Contracting: A Joint Handbook for the 21st Century

Back to Basics: A Handbook for Logistics Readiness Squadron and Aerial Port Commanders

Maintenance Metrics U.S. Air Force

Thinking About Logistics 2009

C-5 TNMCM Study II

Reference

Cumulative Index: Air Force Journal of Logistics, Ninth Edition

Information for Contributors: Air Force Journal of Logistics

Information Book: Air Force Journal of Logistics

Strategic Plan: AFLMA

Magazine

Air Force Journal of Logistics—four editions

Other

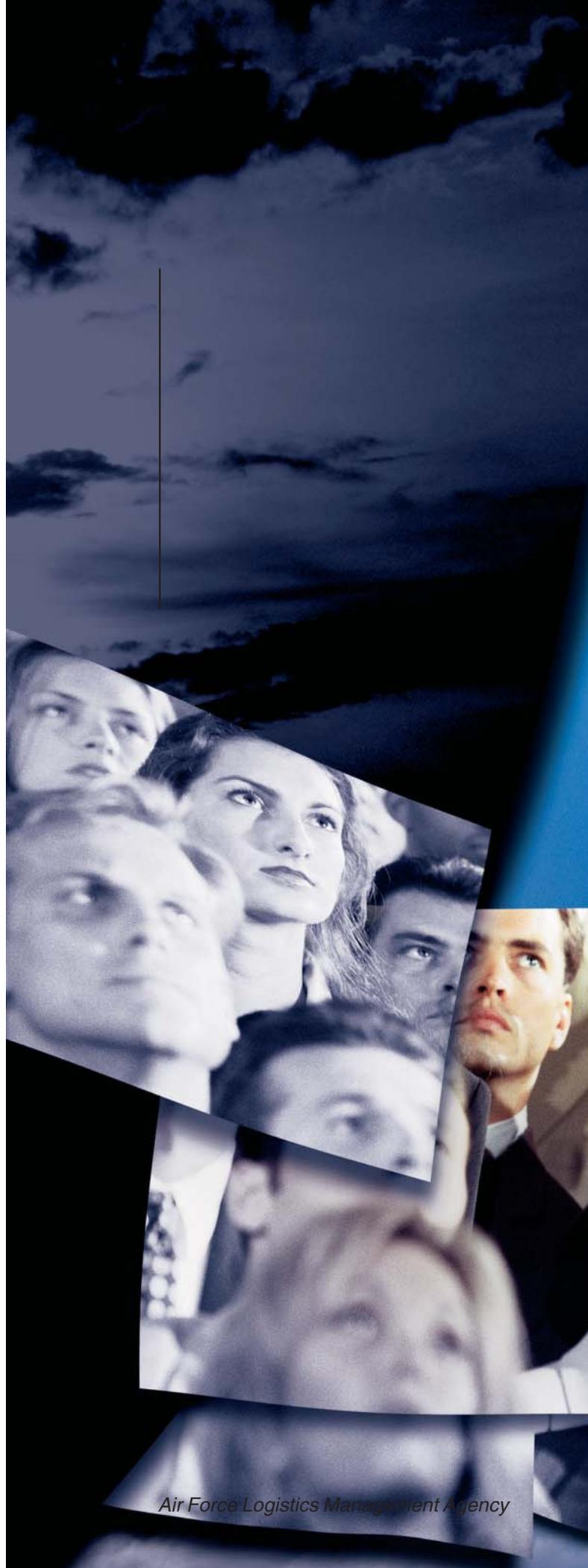
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Building 205 History

What would be known as Building 205 was originally built as Kilby Prison Hospital for tubercular prisoners in the late 1930s, although it was never used as such. The cost to

construct the facility was \$158,688.32.

In 1940, the need for additional flying training led to the establishment of

the Army Air Corps Basic Flying School, Municipal Airport, Montgomery, Alabama, at the site of Montgomery's Municipal Airport on 27 August 1940. On site were one lone hangar, a commercial airline building, and the unused Kilby Prison Hospital building.

Immediately, a tent city was raised in front of the hospital building, by then functioning as the headquarters building. During the war years, it also housed temporary bunks at times, two cadet messes, an officers' mess, an operations facility, an instructor facility, and three school facilities.

After World War II, Building 205 was utilized by several units or organizations: in the early 1960s the building housed the Deputy for Gunter, 3800th Air Base Wing; on 6 April 1966, Headquarters Fourteenth Air Force took up residence; and in 1975 the Air Force Logistics Management Center (the original name of the Air Force Logistics Management Agency [AFLMA]) moved into the building. AFLMA has occupied the building continuously since then.

Over the years, a number of quality-of-life improvements were made to Building 205; however, it still had the mark of a building built in another era: 12-foot high ceilings, ceramic floor tile, exposed wiring and steam pipes, and concrete walls. By the 1990s, while the building was structurally sound, the World War II era mechanical and electrical systems were in need of a complete facelift to bring them up to current building codes. The building was renovated in 2004 and reoccupied by the AFLMA in 2005. Funding for the renovation was provided by the Air Staff.

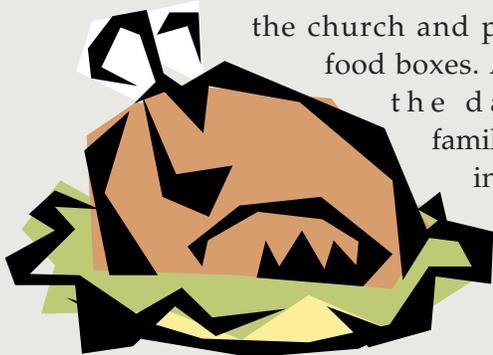


Good Sam—Helping Others

For more than 18 years, AFLMA has assisted the Good Samaritan Ministries of Montgomery with distributing Thanksgiving food boxes. This last year, volunteers helped assemble and pass out more than 440 boxes of food to families ranging in size from 1 to 14 members. The Good Samaritans is an interfaith committee formed from representatives of local area churches. They provide assistance when area churches and agencies request help for a family. The Good Samaritans maintain a food closet so they can respond quickly when necessary. They accept cash donations throughout the year and nonperishable food items around Thanksgiving.

On Tuesday before each Thanksgiving, volunteers meet at a local church where the food boxes are packed. The first vehicles to be loaded are those of the social workers who sponsor various families. AFLMA volunteers then load the boxes into the vehicles of families who come for their individual boxes. The volunteers also deliver to

families who are unable to come to the church and pick up their food boxes. At the end of the day, needy families not on the initial list may receive a box if there are any left.



of Alabama

The 2009 Heart of Alabama Combined Federal Campaign (CFC) proved to be a banner campaign. AFLMA continued its tradition of strong support and generosity. It surpassed the assigned unit goal with a total of \$14K in pledges—256 percent of the target amount—and earned the coveted Early Bird and CFC Gold awards.

The Agency had several events that proved to be outstanding activities and raised extra money for the CFC while also enhancing unit esprit de corps.

All in all, the 2009 Heart of Alabama CFC was a huge success not only for the Agency, but also the Maxwell-Gunter community at large.

Meals on Wheels

The Montgomery Area Council on Aging is a nonprofit organization that

works through the Meals on Wheels Association of America (MOWAA) to provide warm meals to elderly and homebound people in need. However, MOWAA thrives only through its network of hard-working volunteers. More than half the people at the AFLMA take time out on a rotating schedule to help deliver these warm meals to folks in need. Volunteers provide a friendly smile, a chance

to communicate with community members, and most important, a nutritious meal to get them through the day. The AFLMA volunteers work hard but find the program rewarding. Delivering meals gives volunteers a chance to get away from their desks and reach out to a community in need.



2009 Annual Awards

The AFLMA annual awards recognize outstanding job performance, community involvement, and civic service. The criteria for selection are demanding, and the evaluation process rigorous. The AFLMA norm is excellence, and to be selected signifies the individual demonstrated the highest standards of excellence, integrity, and service.

Civilian Category III

Jennifer L. Lizzol, Analysis Division



Civilian Category II

William E. Carter, Command Section



Field Grade Officer of the Year

Major Anthony F. Antoline, Transformation Division



Company Grade Officer of the Year

Capt John M. Travieso, Studies Division



Senior NCO of the Year

MSgt Robert W. Jones, Command Section



NCO of the Year

TSgt Amy E. Young, Studies Division



2009 Quarterly Awards

To be selected as an AFLMA quarterly award winner is a particularly significant accomplishment. The recipient must have demonstrated outstanding job performance and meaningful community involvement or service. As with the annual award, the criteria are demanding and the selection process rigorous.

First Quarter

Major Anthony F. Antoline

Transformation Division
Field Grade Officer

Capt Elise V. Strachan

Transformation Division
Company Grade Officer

MSgt Ricky D. Benton

Studies Division
Senior NCO

Ms Cynthia J. Young

Journal of Logistics
Civilian, Category III

Mr Will Carter

Command Section
Civilian, Category II

Second Quarter

Major Gerald W. Morris

Studies Division
Field Grade Officer

Capt John M. Travieso

Studies Division
Company Grade Officer

MSgt Robert W. Jones

Command Section
Senior NCO

SSgt David N. Strate

Studies Division
NCO

Ms Jennifer L. Lizzol

Analysis Division
Civilian, Category III

Third Quarter

Major Jennifer G. Walston

Analysis Division
Field Grade Officer

Capt Craig A. Lane

Wargames Division
Company Grade Officer

MSgt Pamela A. Rhodes

Command Section
Senior NCO

TSgt Amy E. Young

Studies Division
NCO

Ms Jennifer L. Lizzol

Analysis Division
Civilian, Category III

Mr Will Carter

Command Section
Civilian, Category II

Fourth Quarter

Lt Col G. Paul Baird

Wargames Division
Field Grade Officer

Capt Alice Marie Long

Transformation Division
Company Grade Officer

SMSgt Robert J. Spaulding

Command Section
Senior NCO

Mr James C. Rainey

Journal of Logistics
Civilian, Category III

Ms Gloria J. Witherspoon

Command Section
Civilian, Category II