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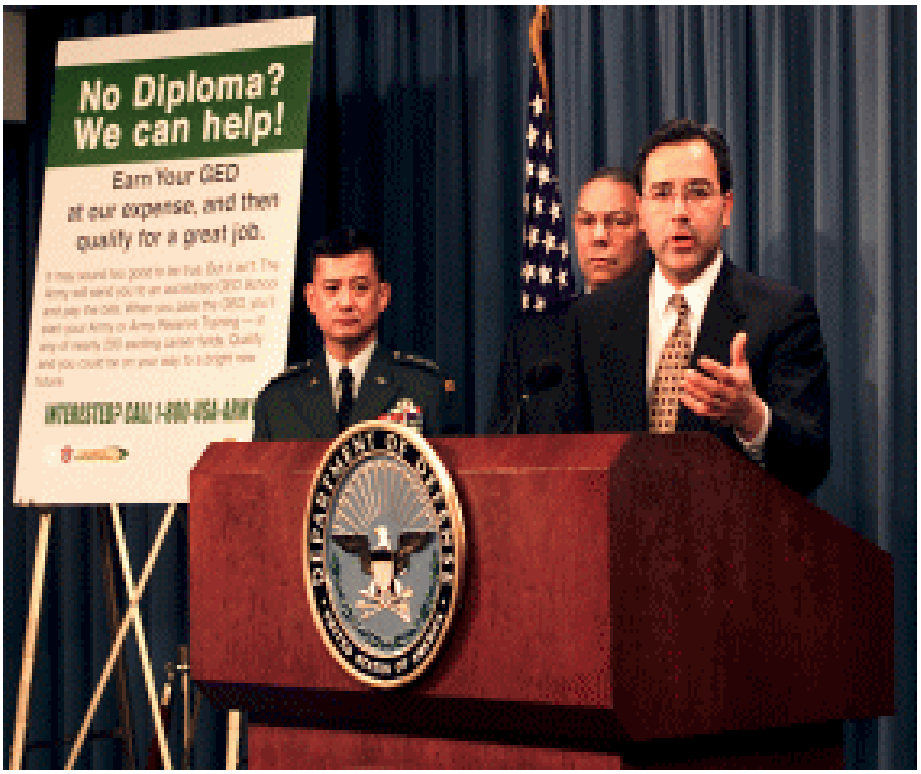
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Chapter 1. Total Army Quality

"A new idea is shaking up government. . . . It's the terribly simple idea that people can think."

—Al Gore, 1997

Total Army Quality—the Army's strategic management approach to achieving performance excellence—is based firmly on the idea that people can think. It cultivates innovation, improvement, and continuous learning and change. It rewards excellence. And recently it has gained further momentum through the National Partnership for Reinventing Government.

"Leading Change": Total Army Quality and Reinvention

In 1992 the Army formally adopted Total Army Quality (TAQ) as its management philosophy. This philosophy was "to do the right things, the right way, for the right reasons, and to constantly strive for improvement"; it focused on individual empowerment and continuous process improvement. Later it would become an integrated strategic management approach with four principles at its core: leadership vision and commitment, customer focus, employee empowerment, and continuous improvement.

To give substance to the concept of Total Army Quality, in the early 1990s the Army developed a set of Army Performance Improvement Criteria (APIC). These were based on the Malcolm Baldrige National Quality Award Criteria and on the criteria for the President's Quality Award, which were Baldrige's criteria tailored to fit the federal government rather than private industry. The Army's criteria were further tailored, or "greened," to fit the Army's mission and circumstances while remaining true to the "world-class" standards of the Baldrige criteria. They were first published in 1995 as a framework for improving operational performance.

The Army was already competing in the President's Quality Award Program, which recognized federal organizations for improving overall performance and demonstrating a sustained trend in providing high-quality products and services. For the first time in 1995, the program's highest award—the Presidential Award for Quality, the federal government's equivalent of the Malcolm Baldrige National Quality Award—went to an Army organization.

As the concept of the reinvention of government took hold in the mid-1990s, a phrase emerged in the Army to express the convergence of reinvention and Total Army Quality: "Leading Change." Leading change meant implementing Total Army Quality and supporting reinvention throughout the Army.

Reinvention—What and Why

Reinvention is a way of looking at things and seeing them from a new perspective—not what has been there in the past, but what should or

could be there—and recreating in accordance with that vision. Reinventors, in a sense, project themselves into the future and ask themselves: What should this process be like? What do the people it serves want it to be like? What do the people who perform it want it to be like? How do the organizations that do it best do it? What might we be able to do using new technology?

Many people were dissatisfied with government services, and a University of Michigan poll revealed that only 21 percent of Americans trusted the federal government to do the right things most of the time.

Reinvention sets aside the current process as irrelevant: what has "always been done" doesn't matter. This allows the reinventor to start with a clean page and focus on designing a new process.

"The Wheels Were Falling Off"

The reinvention movement grew out of the experience of American business, beginning in the early 1980s. At that time, as Al Gore later wrote, "the wheels were falling off the American auto industry." People were buying more and more foreign cars and fewer American cars—because the foreign cars were better and cheaper. Other industries were in similar straits, and the situation was getting worse.

The leaders of American business realized they were going to have to reinvent corporate America. Major companies like Ford, General Motors, General Electric, and Motorola embarked on a quality revolution to make America competitive again in world markets. They recognized the necessity of making the transformation from industrial-age to information-age management.

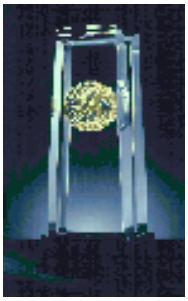
A leading advocate of quality management was Malcolm Baldrige, who saw it as the key to the nation's prosperity and long-term strength. In the corporate world, he led the transformation of a financially troubled brass mill to a highly diversified manufacturer of consumer and industrial goods. As Secretary of Commerce from 1981 to 1987, he took a personal interest in the National Quality Improvement Act that was eventually named after him and helped draft one of the early versions. The Act, signed into law in 1987, created the Malcolm Baldrige National Quality Award to heighten awareness of the importance of quality and performance excellence in achieving a competitive edge.

By the early 1990s, American business had transformed itself. But government was still enmeshed in industrial-age bureaucracy, which focused on hierarchy and received its instructions from the top. Many people were dissatisfied with government services, and a University of Michigan poll revealed that only 21 percent of Americans trusted the federal government to do the right things most of the time.

A National Performance Review

The national leadership was aware that the basic functioning of the government had gone unexamined for too long. In March 1993, the President announced the formation of an intensive national performance review—"an absolutely necessary beginning, because we have too much to do that a wasteful and mismanaged government will not be able to do." An interagency task force led by Vice President Al Gore would work to make the entire federal government less expensive and more efficient, to change its culture toward initiative and empowerment—"to redesign, to reinvent, to reinvigorate the entire national government."

Over several months, career civil servants and a few state and local government employees and consultants reviewed every federal government agency and service. They challenged the basic assumptions of every program, asking questions like, Does it work? Does it provide quality



The Malcolm Baldrige National Quality Award, created by public law, is the highest level of national recognition for quality that a U.S. organization can receive.

service? Does it encourage innovation and reward hard work? Is there a better way to do it? The Vice President hosted a "Reinvent-ing Government Summit" of corporate executives, government leaders, and consultants to gain a business perspective on reforming government and private-sector approaches to managing change. The task force encouraged hundreds of working-level teams to reinvent their departments or a certain part of the government. Its first report, *Creating a Government That Works Better and Costs Less*, offered almost 400 specific recommendations. Many of these were put into practice.

One thousand Hammer Awards later, reinvention has cut the federal workforce by 331,000, eliminated 16,000 pages of obsolete regulations, and saved the taxpayers over $137 billion.

New Strategy: The High-Impact Agencies

In January 1997, at the beginning of the new presidential term, the National Performance Review was looking for ways it could be more effective in spreading reinvention. Renamed the National Partnership for Reinventing Government, it decided on a revised strategy: to transform entire agencies, especially agencies with significant direct impact on the public. The Partnership selected 32 agencies which, together, employed 1.4 million of the 1.8 million civil servants in the federal system and directly affected the lives of 90 percent of the American people. The leaders of these High Impact Agencies were challenged to commit to a small number of significant, concrete, and measurable improvements in services to the public, to be completed by the end of fiscal year 2000.

One of these High Impact Agencies was the Department of Defense (DoD).

"America's Largest Company"

One of the myths associated with old-style government bureaucracy had been that government and business were wholly unlike: so different that neither could learn from the other. A major insight of the National Partnership for Reinventing Government was that this was not true—that nearly all the tools and techniques that helped American companies regain their competitive edge could be adapted to make government work better.

This insight was not new to the Defense Department. As early as 1988, when the Secretary of Defense directed all the services to incorporate Total Quality Management principles throughout their organizations, the military departments had been implementing various management initiatives to improve day-to-day business. A well-known briefing, in fact, characterized DoD as "America's largest company"—larger than Exxon-Mobil, General Motors, Ford, or General Electric—with the President as its Chief Executive Officer, Congress as its Board of Directors, and the American people as its stockholders.

Strategies for Leading Change

From the beginning, the National Performance Review and National Partnership for Reinventing Government offered specific guiding principles, encouraged innovative organizational concepts, and provided means to streamline the process of change. The Army has made use of these and developed tools of its own to manage change and improve performance. The range of means for imple-menting Total Army Quality

and supporting reinvention includes the guiding principles of reinvention; organizational concepts like reinvention centers and laboratories; and tools like waivers, benchmarking, partnering, and awards.

Guiding Principles of Reinvention

The National Performance Review started its work with four basic principles, which have continued to guide the reinvention movement:

Putting Customers First. This meant meeting or exceeding the expectations of the customer and measuring success by customer satisfaction.

Empowering Employees To Get Results. This principle involves the delegation of authority: letting people at the working level make more of their own decisions and solve more of their own problems.

Cutting Red Tape. Eliminating layers of regulation and easing bureaucratic restrictions does more than cut waste and inefficiency: it frees people to focus on their missions and achieve results.

Getting Back to Basics. A clear sense of mission enables organizations to use their resources more wisely, eliminate the unnecessary, and invest in productivity.

These remain central to the effort to invent a government that puts people first and fosters excellence.

Reinvention Centers and Laboratories

An important organizational strategy of the National Partnership for Reinventing Government has been the creation of Reinvention Centers and Laboratories within agencies like the Department of Defense. A Reinvention Center is typically a major command, with the ability to test its reinvention initiatives across a range of organizations under its jurisdiction.

The Army has seven Reinvention Centers: Headquarters, Department of the Army Reinvention Center; U.S. Army Forces Command; U.S. Army Training and Doctrine Command; U.S. Army Materiel Command; U.S. Army Medical Command; U.S. Army Special Operations Command; and the newest, U.S. Army South.

The commander of a Reinvention Center can designate Reinvention Laboratories within the command, but more typically a unit requests the Secretary of the Army to designate it as a Reinvention Laboratory. To be a reinvention lab, a unit must volunteer to be one; its chain of command must approve; and it must have a fully developed plan integrating the four guiding principles of reinvention. The Army has 49 Reinvention Laboratories, including four that were new in 1999—the U.S. Army Corps of Engineers Engineer Research and Development Center; the U.S. Army Corps of Engineers, Portland District; the U.S. Army Recruiting Command; and the U.S. Army Developmental Test Command.

These Reinvention Centers and Laboratories are at the forefront of change in the Army. They champion innovation by encouraging prudent risk-taking, removing bureaucratic barriers, and linking authority, responsibility, and accountability. A complete list of Reinvention Centers and Laboratories is in Annex C to this report.

Reinvention Waivers

A major tool available to the commanders and directors of Reinvention Centers and Laboratories is the reinvention waiver. Heads of reinvention activities receive broad powers to waive Army directives in support of reinvention initiatives, to request expedited waivers to Defense Department policies, and to coordinate directly with the Defense Department regarding legislative changes to support reinvention efforts.

The Army continues to achieve the President's Best Practice of "Approving Reinvention Waivers within 30 Days" by authorizing Reinvention Commanders and Directors to locally approve waivers to Army policy. During 1999, 119 new waivers were approved for implementation by Army organizations. Since 1994, 366 waivers to Defense and Army policies have been approved and are changing the way work is done. Many of these waivers will be reviewed to determine their potential for broader application.

A summary of new waivers is Annex B to this report.

Benchmarking

Another powerful tool is benchmarking: the systematic process by which an organization compares, measures, and analyzes its products, services, or processes against the current "best practices" of other—preferably world-class—organizations to attain superior performance.

Part of the Army's continuous improvement effort is identifying best-in-class organizations and analyzing their "best practices"—the superior methods or innovative approaches that contribute to their superior performance. "Best practices" must demonstrate through data that they genuinely make the process better, faster, or cheaper. Benchmarking includes selecting the best performance features of a process or practice and implementing those features to produce the best performance.

Partnering

Forming partnerships and alliances with other organizations is another major tool for the leadership of change. Whether Army organizations partner with another Army unit, with industry or academia, or with a local community, the goal is to achieve what no single agency could achieve alone. Some arrangements lead to monetary savings; others enhance the quality of life for soldiers, their families, and members of surrounding communities. All result in a "win-win" outcome for the Army and the other partners.

Awards

Rewarding achievement is a way to foster more achievement. The framers of the Malcolm Baldrige National Quality Improvement Act, knowing this, organized their entire quality improvement program around an award. Other awards for quality complement it—awards sponsored by the President and Vice President of the United States, the Secretary of Defense, the Secretary of the Army, and the Chief of Staff, Army, as well as universities and public foundations.

Major quality awards for which Army organizations can compete include these:

The President's Quality Award Program. This program recognizes federal organizations that have improved their overall performance and demonstrated a sustained trend in providing high-quality products and services to customers. It offers two awards. The highest, the Presidential Award for Quality, is the federal government's equivalent of the Malcolm Baldrige National Quality Award. Winners demonstrate mature approaches to performance excellence that are well deployed throughout their organizations; they have documented world-class results and sustained performance over several years. The Award for Quality Improvement goes to organizations that demonstrate early positive approaches to performance excellence that are deployed throughout most of the organization. They have attained early preliminary positive results in important areas of their business.

The Vice President's Hammer Award for Reinvention. The Vice President presents this award to teams of federal employees who have

made significant contributions in support of reinventing government—who have created an innovative process or program to make government work better, who have made large impacts on government service, bottom-line results, streamlining government, saving money, and problem-solving. It is a tool to spur as much reinvention as possible; since 1994, over 1,200 teams have won it.

One thousand Hammer Awards later, reinvention has cut the federal workforce by 331,000, eliminated 16,000 pages of obsolete regulations, and saved the taxpayers over $137 billion.

The Secretary of Defense Productivity Excellence Award. This award recognizes individuals and small groups who have made substantial improvements in the quality and productivity of Defense operations through suggestions, special acts, or other management improvement initiatives. The contributions must have resulted in a verified saving of $1 million over a one-year period.

Department of Defense Value Engineering Awards. These awards provide incentives for both government and contractor workforces to submit ideas for improving products, processes, and production methods. They recognize significant achievements in value engineering—the analysis of systems, equipment, facilities, services, and supplies for the relationship between worth and cost.

The Army Communities of Excellence Program. This program assesses excellence in Army communities, based on the process of continuous improvement in customer service and satisfaction. Service excellence, across the entire functional spectrum of the community—from personnel services to the Post Exchange—is assessed along with facilities excellence, on the basis of the Army Performance Improvement Criteria.

In 1999 Army organizations received numerous awards for quality, innovation, and reengineering. Chapter 3 provides the details.

The Army Performance Improvement Criteria—A Commitment to Leading Change

The Army Performance Improvement Criteria have continued to develop as a major framework for improving operational performance. Over the last several years they have evolved significantly toward comprehensive coverage of strategy-driven performance, addressing the needs of everyone who has a stake in Total Army Quality—the customers, those who benefit directly from what the Army does; the employees, both military and civilian, who perform the work; suppliers and partners, who provide products and services needed; and the public.

The Army Performance Improvement Criteria foster in-depth self-knowledge and a commitment to improvement, the keys to successful reinvention. Based on the Baldrige Criteria and the President's Quality Award Criteria, they enhance reinvention efforts in three specific ways. First, this integrated, results-oriented framework serves as a working tool for strategic planning, organizational assessment, and training. Second, it raises the organization's performance expectations and standards. Third, it establishes common performance criteria to facilitate communication and sharing among Army organizations, business, and industry.

The criteria fall into seven categories:

Leadership examines how senior executives guide the organization and how the organization addresses its responsibilities to the public and practices good citizenship.

Strategic Planning examines how an organization sets strategic directions and how it determines key action plans.

Customer Focus centers on the approach an organization uses to determine its customers' requirements and expectations.

Information and Analysis focuses on the management, effective use, and analysis of data and information to support the organization's key processes and its performance management system.

Human Resource Focus considers how an organization enables its workforce to develop its full potential and how the workforce is aligned with the organization's objectives.

Process Management focuses on key production and delivery and support processes—how they are designed, managed, and improved.

Business Results concern the organization's performance and improvement in its key business areas: customer satisfaction, financial performance, human resources, supplier and partner performance, and organizational effectiveness.

The criteria require Army organizations to identify what they do, for whom they do it, why they do it, whether it supports core and priority mission functions, how well they do it, how they can do it better, whether they can eliminate it, and whether it can be done more efficiently by other organizations or the private sector. By using the APIC, an organization seeks ways of reinventing its operations, gaining more flexibility, aligning internal processes with customer satisfaction, and identifying opportun-ities to form partnerships to fulfill the organiza-tion's responsibilities as a good steward.

How This Report Is Organized

The Department of the Army's commitment to quality and reinvention is strong, growing, and enthusiastic. This is represented by the broad range of recent accomplishments that are supportive of the goals of the National Partnership for Reinventing Government.

Many of these successes are detailed in the next chapter of this report. They represent the Army's commitment to achieving the President's vision of better government. These scores of accomplishments demonstrate how Army personnel and their organizations are achieving major changes in functional areas and organizational units. By unleashing the power of military and civilian personnel and focusing on essentials, the Army has been able to gain efficiencies while maintaining its effectiveness.

Chapter 2 is organized around the seven categories of the Army Performance Improvement Criteria. The number and diversity of the "success stories" not only illustrate the criteria and show what Army organizations have been doing: they also provide a catalog of ideas that other units may find appropriate to their own missions and circumstances.

As the Army continues its journey toward the future, its people and organizations must find new and innovative ways to improve its efficiency and effectiveness. We expect this report to be a catalyst for greater change and process improvement throughout the Army as organizations benchmark these best practices.

Chapter 3 is about awards—achievements at the federal or Army level that have earned special recognition. These illustrate what is possible as the Army generates, tests, and implements new ways to improve efficiency and effectiveness as it acquires, focuses, and conserves resources for America's 21st Century Army.

Chapter 2. Total Army Quality Initiatives: Success Stories of 1999

The Army's commitment to reinvention becomes visible in real-life stories of successful management improvements. This chapter, with its review of Total Army Quality success stories of 1999, is structured around the core values and concepts that make up the Army Performance Improvement Criteria. Seven categories—Leadership, Strategic Planning, Customer Focus, Information and Analysis, Human Resource Focus, Process Management, and Business Results—help define these criteria as they apply to an organization, its operations, and the results.

The initiatives described in this chapter show how Army employees and organizations have made significant changes in many of the Army's major programs and functional areas. The success stories come from across the whole spectrum of the Army, from Major Commands, reinvention centers and laboratories, organizational units, and individuals.

Category 1: Leadership

Leadership is the guidance senior leaders give an organization in setting directions and seeking opportunities. Primary focus is on the methods used to identify clear values and set high performance expectations that address the needs of all the organization's stakeholders. This category also includes the way the organization fulfills its responsibilities to the public and practices good citizenship.

Organizational Leadership

Organizational leadership has two aspects: senior leadership direction and organizational performance review. The first aspect involves setting directions and building and sustaining an organization; it includes the way the leadership takes into account all the key stakeholders—customers, employees, suppliers, partners, Congress, the community, and the public. The second aspect involves the senior leaders' review of the organization's overall performance and capabilities.

Senior Leadership Direction

A senior leader's responsibility includes creating values and expectations; projecting a strong customer focus; setting directions; and effectively communicating these values, expectations, directions, and customer focus. It involves developing and maintaining an effective leadership structure and encouraging innovation. An effective leader also promotes continuous learning, not only to improve overall performance, but also to involve all employees in the ongoing challenge to enhance value to the customer.

Senior Leadership Direction: Success Stories of 1999

Several successful initiatives of 1999 involved aspects of senior leadership direction: setting directions for an organization; communicating values, expectations, directions, and customer focus; and encouraging innovation and continuous learning.

Setting Directions: Boards of Directors for Strategic Decision Making

More than one Command made use of a Board of Directors—a concept from the corporate world—to help set directions for the organization.

AMCOM Uses Board of Directors To Chart Course

In September 1998, the Commanding General, U.S. Army Aviation and Missile Command (AMCOM), established an AMCOM Board of Directors that would meet every two weeks. Its purposes were to focus on AMCOM's strategic issues; to reengineer AMCOM to comply with long-range issues associated with Program Budget Guidance and Quadrennial Defense Review directives; to design AMCOM's "end-state" and manage the key events and issues to achieve the desired endstate; and to comply with higher headquarters strategic guidance.

The Board membership includes the AMCOM Commanding General; his Deputy; the Deputy for Systems Acquisition; the Chief of Staff; and the Executive Directors for the Aviation and Missile Research, Development, and Engineering Center; the Integrated Materiel Management Center; and the Acquisition Center. The Chief of the Strategic Planning Office facilitates and records each session.

In 1999 the Board's accomplishments consisted of developing the corporate vision, mission statement, and goals; identifying command level processes; and examining approaches to managing future change with other government entities and private industry.

Its purposes were to focus on AMCOM's strategic issues; to reengineer AMCOM to comply with long-range issues….

OSC's Board of Directors Renders Major Decisions

The U.S. Army Operations Support Command (OSC) (Provisional) has established a Board of Directors—a senior advisory body for strategic direction and resource decisions. The OSC Commanding General chairs the eight-member board. The other members are the Commander, U.S. Army War Reserve Support Command; the Directors of the Munitions and Armaments Center and the Resource Management Center; two Senior Executive Service members; and two installation representatives. All members represent the interests of the entire OSC: they are not advocates for their functional organizations or individual installations.

The Board of Directors renders major decisions that impact the OSC headquarters and the entire Command. It has identified the four major processes that are the reason the OSC exists; approved process owners; and established key focus area champions. The Board has chartered six Quality Management Boards to begin implementation of the Total Army Quality philosophy. The six Boards are linked directly to the President's Quality Award criteria: Strategic Leadership, Process Management, Corporate Culture Change, Resource Management, Customer Support, and Information Management and Analysis. They rely on functional organizations and formally chartered Integrated Process Teams to carry out process improvement initiatives. Customer-focused processes are assessed by OSC associates empowered as Integrated Process Teams. The Quality Management Boards track and measure

Integrated Process Team objectives through regular in-process reviews.

The Board has chartered six Quality Management Boards to begin implementation of the Total Army Quality philosophy.

From the Board of Directors down, leaders understand and communicate the strategic vision and direction. OSC associates are encouraged to attend bimonthly open forum meetings. Meeting schedules, read-ahead packages, and meeting minutes are published and posted on electronic bulletin boards and Intranet web pages for easy access by all OSC associates. The four TAQ principles of Strategic Direction, Customer Focus, Empowerment, and Metrics help individuals understand their functions and how they relate to the strategic direction of the Command.

Communicating: The Vital Connection

Many other channels, beyond the formal proceedings of Boards, served various commands in the vital task of communicating values, expectations, directions, and customer focus. They ranged from newspaper columns to televised town hall meetings.

Columns, Breakfasts, and More: TACOM-ARDEC Keeps the Workforce Informed

At the Tank-automotive and Armaments Command's Armament Research, Development, and Engineering Center (TACOM-ARDEC), the post paper—the *Voice*—regularly carries a column written by the Commanding General or the Technical Director to inform the workforce of topical issues and important initiatives. This is only one item in TACOM-ARDEC's continuing campaign to keep the workforce informed and involved. The Commanding General also holds regular "Breakfast with the Boss" meetings to share his perspectives on issues affecting the command. Senior leaders augment these gatherings with other informational sessions geared to fit their particular organizational needs, such as town hall meetings, shareholders meetings, and biweekly staff meetings.

Off-Site Strategy Meetings Aid Communication in CERDEC's NVESD

Once a year, the management of the Communications-Electronics Command Research, Development and Engineering Center (CERDEC)'s Night Vision/Electronic Sensors Directorate (NVESD) holds an off-site strategy meeting. Issues discussed in 1999 were organization, personnel, and morale. Decisions were made on participation in conferences, consistent media presentation, a united front on in-house Laboratory Independent Research proposals, recruitment efforts and personnel actions, and technical program strategies. Functions like this aid in communication from upper management down to first-level supervisors. They also allow opportunities for strategic planning of the laboratory's mission.

DENCOM's Dental Care Reengineering Initiative Is a Corporate Philosophy for Improving Dental Services

U.S. Army Dental Command (DENCOM) has launched major initiatives for change and quality improvement throughout the Army Dental Care System. The principal driving force is the Dental Care Reengineering Initiative (DCRI), together with its Web-based reporting system, the Corporate Dental Application (CDA). Despite sweeping leadership changes since the start of DCRI and CDA, both initiatives remain the preferred vehicles through which senior leaders have addressed corporate vision, values, and performance. The Dental Care Reengineering Initiative has emerged from an experimental phase to become the standard corporate philosophy for improving clinical efficiencies and business practices in the delivery of dental services. The key concepts of DCRI, with lessons learned in the first two years, were published in the *Clinical & Administrative Handbook* in April 1999. Currently 1,000 copies of

the *Handbook* are in circulation in dental commands around the world. Recently, the U.S. Navy Dental Corps asked permission to use the *Handbook* in its reengineering effort. The *Handbook* will appear on the DENCOM Web site.

The Dental Care Reengineering Initiative has emerged from an experimental phase to become the standard corporate philosophy for improving clinical efficiencies and business practices in the delivery of dental services.

In May 1999, Taylor Dental Clinic at Fort Campbell, Kentucky—an original DCRI test clinic—was awarded the Vice President's Hammer Award in recognition of its success in streamlining operations, empowering the staff, improving customer service, and reducing costs. Simultaneously, Taylor Dental Clinic improved the overall effectiveness of the soldiers at Fort Campbell by steadily improving dental fitness and achieving a 100 percent increase in the dental wellness of the population. The story of this achievement appears in Chapter 3.

AMCOM Puts the Vision on Television

The Commanding General, U.S. Army Aviation and Missile Command, uses televised town hall meetings as a primary tool to communicate strategic vision, mission, goals, and values to his workforce. All AMCOM locations are connected to the broadcast.

Topics discussed at the town hall meetings have included the Army's Consideration of Others Program; a proposed Defense Civilian Acquisition Workforce Personnel Demonstration Project; command achievements, awards, and accomplishments; the Quadrennial Defense Review; and AMCOM Organizational Self-Assessment Survey results. Each town hall concludes with a question and answer session. Videotapes are available for employees not able to attend the town hall session. All charts and questions and answers are posted to the Team Redstone Intranet Web site.

Encouraging Innovation and Continuous Learning

TACOM-ARDEC Builds Future Leaders Through Teaming and Mentoring

At TACOM-ARDEC, the senior leadership seeks to build future leaders through empowering the workforce. The principal means of establishing and reinforcing empowerment and innovation is the use of teaming in all aspects of ARDEC's business. Another approach is mentoring. ARDEC's Technical Director sponsors an Executive Fellowship program providing future leaders the opportunity to get on-the-job staff experience in ARDEC operations. The Centers and Directorates also have Executive Intern/Fellowship programs that develop employees and broaden their knowledge base.

The principal means of establishing and reinforcing empowerment and innovation is the use of teaming in all aspects of ARDEC's business.

Organizational Performance Review

To be successful, leadership must ensure that the organization captures and shares lessons. Organizational performance review is about assessing the overall performance of the organization. This aspect of leadership is crucial. Reviews help to build consistency in the choice of goals and allocation of resources. Another major aim is to shape organizations that can adapt easily to new needs and opportunities. Senior leaders must also translate review findings into an action agenda—an agenda specific enough to deploy throughout the organization

and to suppliers/partners and key customers. The agenda may include opportunities for innovation to make the organization the leading performer in its field.

Organizational Performance Review: Success Stories of 1999

Many successful initiatives of 1999 involved aspects of organizational performance review: assessing overall performance, creating or improving consistency, and shaping organizations for greater adaptability.

Assessing Overall Performance

Some organizations improved their methods of assessing overall performance, by refining the internal review process or seeking input from sources not previously used.

TACOM-ARDEC Senior Leaders Scrutinize Organizational Performance

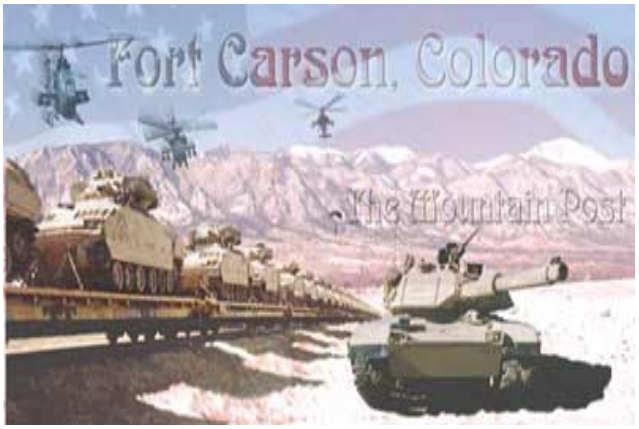
At TACOM-ARDEC, senior leaders are personally involved on a regular basis in reviewing both overall ARDEC-level performance and Business Unit performance. Several systematic reviews are conducted, including the quarterly Systems Measurement Review, the monthly Executive Council, and the weekly Top 10 Reviews. Findings that indicate the need for process changes are referred to the appropriate System Owner—the senior leader for the process—who works the issues, within the organization's system process priorities and resource limits, through one of the Quality Management Boards for resolution, incorporation, and implementation into TACOM-ARDEC's processes.

To further capture the information, and to transfer the information developed, TACOM-ARDEC uses a knowledge database in order to share performance and lessons learned with all TACOM-ARDEC associates.

Fort Carson Uses President's Quality Award Program As a Springboard to Excellence

Fort Carson, the "Mountain Post," used the self-assessment process associated with the President's Quality Award Program to build awareness of the organization's "quality journey" and gain impetus for further achievement. In the report on this self-assessment, Fort Carson's leadership described the effort to "embed quality": "TAQ is the overall Army management philosophy. The APIC is a Baldrige-based Army program which we use to institutionalize TAQ. Our Strategic Plan is a dynamic 'road map' we use to focus our quality improvement efforts. Our annual Organizational Self-Assessment is the yardstick for assessing our progress."

The report itself was carefully crafted as a teaching device to promote understanding of the Baldrige-based criteria. Focusing attention on "the Mountain Post Team," it addressed the criteria category by category and showed how each was applied at Fort Carson.



TACOM-ARDEC Uses Award Programs To Foster Organizational Excellence

TACOM-ARDEC regularly uses external Baldrige-based awards programs to drive performance excellence. Assessment vehicles such as the President's Quality Award Program, the Army Communities of Excellence Program, and the state awards process provide the basis for evaluation. In connection with this initiative, TACOM-ARDEC appoints a senior leader as Champion for each of the Baldrige Criteria.

In connection with this initiative, TACOM-ARDEC appoints a senior leader as Champion for each of the Baldrige Criteria.

Each Champion uses a facilitator to assist him in evaluating the feedback from the external site visits. The feedback is evaluated and presented to the Executive Council to determine how to build on current strengths and how best to address areas identified for improvement.

TACOM-ARDEC Continues a Successful Dialogue

In the mid-1980s TACOM-ARDEC instituted a forum in which customers and suppliers of the Center's technical base could help formulate or influence TACOM-ARDEC's technical base investment strategy. The forum continues: a three-day review of TACOM-ARDEC's current and proposed technical base efforts, with technology suppliers and users in attendance. Candid discussion by suppliers allows insight into user needs and supplier capabilities. This initiative helps direct technical base efforts to ensure a sound investment of resources.

TACOM-ARDEC Hosts a "Graybeard" Panel

In 1995 TACOM-ARDEC first implemented an unbiased "graybeard" panel to supplement the annual review of the organization's current and proposed technical base efforts. The panel, as constituted today, typically consists of eight experts: retired general officers, senior Defense officials, and respected academics. These advisors review TACOM-ARDEC's technical base program; offer in-depth insight into technology feasibility, state-of-the-art applications, and cost realism; and help direct technical base efforts to ensure a sound investment of resources.

Creating and Improving Consistency

Several organizations used their organizational performance review to create or improve consistency in choice of goals, allocation of resources, or reporting of information.

TACOM-ARDEC's Quality Federation Improves the Fidelity of Technical Data

A Quality Federation at TACOM-ARDEC encourages collaboration of Quality Assurance professionals involved in all life cycle phases of weapon systems. The characteristic makeup of the Federation includes representatives from the design assurance, production assurance, and depot maintenance areas. Major topics include common staff development, workload sharing, joint suppliers, chain management, and weapon system problem-solving/problem-prevention initiatives. The objective is to improve the fidelity of quality/technical data and decisions as the item moves simultaneously through life cycle phases and organizational handoffs.

TACOM-ARDEC Performs Benchmarking To Assure Product Superiority

TACOM-ARDEC senior leaders created a command policy, "Competitive Comparison and Benchmarking," with an associated *Benchmarking Desk Guide*. Systems owners benchmark processes on a continuing basis. Each Integrated Product Team performs product benchmarking against the world's best armaments to ensure U.S. product superiority on the battlefield.

DENCOM's Corporate Dental Application Speeds Reporting of Dental Data

Dental Command's Corporate Dental Application (CDA) is a bold initiative that utilizes innovative and cutting-edge Web-based technologies to improve the efficiency and timeliness of data reporting across the entire Army Dental Care System. From September 1998 to September 1999, the initiative developed from process

design to implementation. During this time, the command completed Web-based application programs for over 25 corporate-level reports, developed an innovative leasing arrangement for 746 end user devices and 5 super servers, and deployed the hardware to 249 sites around the world. Currently CDA is undergoing worldwide testing and refinement, and additional Web-based report programs are being introduced. Senior leaders set a target of January 2000 to have CDA fully functional as the preferred method for corporate information reporting. Cost savings to the Army with full implementation of CDA are estimated to be $3 million per year as legacy systems are retired in favor of a highly efficient Web-based application.

USAREUR Civilian Personnel Directorate Develops Automated Suspense System

The U.S. Army Europe (USAREUR) Civilian Personnel Directorate, located in Heidelberg, Germany, has developed an automated suspense tracker. The Civilian Human Resource Management Agency Project and Suspense Tracker is a Microsoft Access application that tracks projects and suspenses within any organization by division, branch, action officer name, due date, completion date, and organizational level, with linkage to the organization's operational goals and objectives. The program resides on a central server accessed from individual workstations and provides a variety of reports to the user—for instance, reports by type of action, priority, organization, individual action officer, due date, and whether the action is completed or still open. This automated tracker replaces a laborious, unreliable, and time-consuming manual system of monitoring projects and suspenses within the organization.

The tracking program can be used within any organization. It requires Microsoft Access 97 and approximately 2 megabytes of memory to load. It creates a database of suspensed projects that can be retrieved at any organizational level and for any period of time. It provides linkage between the assignment and the organization's objectives and goals and allows senior management to assess comprehensively how well the organization is meeting its requirements. The automated tracker also creates a history of individual or organizational accomplishments and can be used to evaluate individual and organizational performance.

It provides linkage between the assignment and the organization's objectives and goals and allows senior management to comprehensively assess how the organization is meeting its requirements.

Structuring for Adaptability

Some commands used the performance review as a springboard for reshaping their organizational structure to adapt easily to new needs and opportunities.

Fort Hood Implements a Continuous Improvement System

Until about five years ago, the hierarchy of command and control at Fort Hood was highly structured, with each function completely separate. Then the organization embraced the principles of Total Quality Management: a focus on customers, total involvement of everyone involved in a process, and leadership from the top. Goals were developed, with a goal manager responsible for each. Process owners developed supporting objectives and tasks, and goal managers reported performance results quarterly.

Then, about two years ago, this process was interrupted. The top leaders and goal managers were transferred to another military site, and Fort Hood's remaining leadership realized the need to develop and institutionalize a systematic

approach that was not dependent on specific individuals.

They established a new system, the Continuous Improvement System (CIS), which embraced the principles of Total Army Quality. The CIS is a teaming approach that complements the chain of command. It focuses on significant processes, builds upon joint ownership of a process, facilitates cross-functional integration, and is driven by the needs of the customer.

The CIS includes an Executive Steering Committee, a Senior Quality Board, and four Quality Management Boards. The Executive Steering Committee consists of the top installation leaders. Chaired by the Commanding General, it sets the strategic direction. At least quarterly, it meets to review performance and assess progress toward the achievement of installation goals. Together with the Senior Quality Board, it conducts an annual strategic review to align Fort Hood's strategic planning and monitor progress toward long-term goals.

The action arm of the Executive Steering Committee is the Senior Quality Board, chaired by the Chief of Staff. It too meets at least quarterly to monitor progress toward installation goals and objectives.

The four Quality Management Boards are cross-functional teams of process owners who coordinate their efforts to improve their own processes and manage four key areas: training and readiness; logistics and power projection; caring for the post population; and installation operations. The key process owner in each area chairs the appropriate board. Each Quality Management Board holds a quarterly review and analysis to monitor performance. Directorates and other subunits review their performance results at least monthly.

The CIS is a teaming approach that complements the chain of command.

This system enables Fort Hood's leadership to plan for the future and meet current customer needs in spite of declining manpower and dollar resources.

Tobyhanna Army Depot Adopts a Teaming Approach

TEAM POWER is Tobyhanna Army Depot's management philosophy. It is a systematic approach to transitioning the depot from a traditional to a team-based organization in which every employee, union official, supervisor, and senior manager will know and understand the depot's key business objectives and what role the objectives play in improving operational efficiency and customer satisfaction. There are 17 directorate teams and 115 division teams.

From handheld radios to satellite communications, Tobyhanna Army Depot utilizes advanced technologies to ensure the success of American soldiers on the battlefields of the future.

Each team has gone through nine modules of team foundation training. These modules were designed to walk teams through a systematic step-by-step evolution. They outline the necessary processes for effective team development, to include team building, meetings, interpersonal skills, listening, decision making, expectations and rules, roles and responsibilities, brainstorming, and business focus. Teams are continually audited to ensure all senior managers, union officials, supervisors, and employees understand the team processes they have learned and are using them properly. Every directorate and division team has a balanced scorecard that supports the depot's scorecard.

In 1999, the depot's senior leadership developed a Team-Directed Work Force Plan. This plan focuses on areas for improvement identified through the audit process. All action plans have been prioritized. A monthly progress report is given to the entire senior leadership team by each Senior Leader Action Officer to ensure the action is on track.

MEDCOM Agency USAMISSA Manages Information Systems Life Cycle

In 1997 four organizations—the Health Care Systems Support Activity, the Fort Detrick Directorate of Information Management, the Army's Defense Medical Information Systems Office, and the Patient Administration Systems Biostatistics Activity (which later withdrew)—came together to form a new agency. The United States Army Medical Information Systems and Services Agency (USAMISSA) describes itself as "the information technology execution arm of the Army Medical Department." It was created to assume corporate responsibility for life cycle management and operation of information systems, primarily in support of the Army Medical Department. USAMISSA works to implement the spirit and practice of the Defense Department's acquisition reform initiatives for information systems and to incorporate the best private sector practices in information technology.

The leadership team of USAMISSA has adopted a matrixed management approach to structure using the principles of structural cybernetics. This process led the agency to specify its products and services with clear definitions of the various entities within its organization, each a system in itself, but part of a larger system. Evolving from a traditional stovepipe structure to a matrixed structure allows for division of labor and the formation of project teams that cut across structural boundaries. The design is helping USAMISSA to identify and eliminate duplication of effort and achieve maximum utilization of its workforce. This structure allows the agency the greatest return on investment for its clients by utilizing employees in their most effective roles, while ensuring synergistic organization-wide support through teamwork.

Space and Terrestrial Communications Restructures Around Focus Areas

CERDEC's Space and Terrestrial Communications Directorate recently reorganized for greater focus and efficiency. The reorganization eliminated the traditional organizational structure of five line Divisions reporting to the Deputy Director and Director. Instead, Program Directors were created around specific technology or product focus areas. These Program Directors are similar to the Product Managers found in a Product Management organization; they represent the prime customers of the Directorate, aligning their structure in similar fashion. Because they can now concentrate on the execution of internal programs centered on specific technology or focus areas, the Program Directors have been able to enlarge the breadth of the customer base, bringing increased funding and new customers to Communications-Electronics Command (CECOM). As a result of the reorganization, CECOM received approximately $4 million in additional or increased funds, allowing CERDEC to expand the level of support provided to its customers.

TACOM-ARDEC Takes a Systems Approach to Structuring

TACOM-ARDEC's Commanding General and its Technical Director co-chair the Board of Directors and the Total Quality Management Executive Council, which includes all the command's senior leaders. They also support the Picatinny Partnership Council (a management/union partnership), which serves as a formal instrument to develop and convey the organization's objectives, values, and expectations throughout the workforce. They have taken the architectural steps to achieve a systems approach to TACOM-ARDEC's research and development mission, with vertical and

horizontal integration. For integration, Board of Directors members also serve on the Executive Council, which is a larger group of senior leaders responsible for implementing the Board's direction and fostering quality and process improvements. The Board of Directors, in conjunction with the Executive Council, reviews and revises ARDEC's Vision and Strategic Objectives.

…the Picatinny Partnership Council (a management/union partnership), serves as a formal instrument to develop and convey the organization's objectives, values, and expectations throughout the workforce.

Public Responsibility and Citizenship

Public responsibility and citizenship are obligations the organization must address when it integrates its values and expectations into performance management practices. These obligations can be considered from two perspectives: overall responsibilities to the public and specific support of key communities.

Responsibilities to the Public

Overall public responsibility has three basic aspects: (1) making legal and regulatory requirements an integral part of performance management; (2) being sensitive to issues of public concern, whether or not they are currently embodied in law; and (3) ensuring ethical behavior in all stakeholder interactions. This responsibility should go beyond mere legal compliance, to treat the requirements as blueprints for improvement.

Responsibilities to the Public: Success Stories of 1999

Several successful initiatives of 1999 highlighted aspects of public responsibility: going beyond simple legal compliance to make requirements an opportunity for improvement and—beyond that—showing sensitivity to public concerns, whether these were embodied in law or not.

Beyond Compliance: Making Requirements an Opportunity

Some organizations used legal and regulatory requirements as opportunities to exercise stewardship in caring for cultural and environmental assets.

Fort Sam Houston Uses Leasing Statutes To Preserve Historic Properties

Fort Sam Houston, located in the heart of San Antonio, Texas, is using the lease of government-owned real property to facilitate the renovation, operation, and maintenance of historic properties located on the installation.

The historic properties are the "old" Brooke Army Medical Center and Beach Pavilion complex. These facilities—containing some 521,322 square feet of space—are contributing elements to the Fort Sam Houston Conservation District and are eligible for the National Register of Historic Places. Due to budget constraints, traditional methods of funding the renovation of these historic properties are not available in the foreseeable future.

Fort Sam Houston, in coordination with the Department of the Army, proposes to lease the facilities to a developer skilled in restoring and maintaining historic properties, for a term not to exceed 50 years. This process will preserve the overall integrity of these facilities on Fort Sam Houston by entering into a lease or leases at fair market rental value. The developer will shoulder the cost of rehabilitating the facilities. The Army will retain title to the leased properties and will receive fair market value and appropriate setoffs related to the lessee's operation and maintenance of the leased properties.

The principal goal of this initiative is to facilitate the preservation of the facilities. It is designed to bolster the Army's efforts at historic property preservation as encouraged by the Congress through the National Historic Preservation Act. The Army will use provisions within 10 United States Code 2667 and 16 United States Code 470h-3 as applicable to accomplish this initiative.

INSCOM Develops Web Site To Teach Environmental Awareness

The U.S. Army Intelligence and Security Command (INSCOM) Engineering Division has created an environmental Web site to educate INSCOM units on a wide range of environmental issues affecting them. The Web site, at www.inscomgoesgreen.com, provides on-line information on funding, regulatory requirements, and training opportunities.

The training opportunities are a series of online environmental courses intended to help INSCOM units and personnel comply with the letter and spirit of environmental policies, regulations, and laws. The courseware incorporates existing INSCOM environmental reference materials and presents the information through self-paced, interactive learning strategies.

INSCOM is also taking advantage of the Environmental Safety, and Occupational Health Knowledge Center Web site to provide access to non-INSCOM reference materials, best practices, and Environmental Protection Agency certification courses.

SBCCOM Fields Environmentally Friendly Laundry System

The U.S. Army Soldier and Biological Chemical Command (SBCCOM) has fielded a Laundry Advanced System that is far more environmentally friendly than the old field laundry system.

The new system has already been hailed as more economical, more efficient, and—especially—more reliable. The contract for it has been recognized as a breakthrough in acquisition methods, because the statement of work was based on performance requirements, and "best commercial practices" were cited rather than "military standards." Contractors presented their proposals orally, and the contract award was based on "best value" rather than "low bid."

The Laundry Advanced System launders clothing using a "dry-to-dry" process. Clothes are placed in the two laundry drums and, about an hour later, are removed clean and dry from the same drums. Each laundry cycle includes a wash, two rinses, a highspeed "spin," and tumble drying.

The environmentally friendly aspect of the new system involves water consumption. Four of the old machines—the typical configuration—used 24,000 gallons of water a day and produced about 20,000 gallons of waste water. The Laundry Advanced System uses less than 400 gallons of water a day to do the same task and produces only 20 gallons of waste water. The 20 gallons are concentrated sludge, which is considered nonhazardous waste. This represents a 98 percent reduction in water demand and a 99 percent reduction in waste water generation.

Fort Lewis's Hazardous Material Control Center Uses a "Pharmacy" Concept To Cut Costs and Protect the Environment

The Hazardous Material Control Center (HMCC) at Fort Lewis, Washington, controls the acquisition, use, and return of hazardous materials in one central location. This supports Fort Lewis's need to realize cost savings by cross-leveling inventories and utilizing best

management practices, thus meeting goals by reducing hazardous material storage, usage, and waste generation. Fort Lewis's HMCC provides a single point of accountability for customers of hazardous materials, while maintaining compliance with Army, state, and federal regulations.

The Directorate of Logistics and the Directorate of Public Works' Environmental and Natural Resources Division set business practices for the HMCC to the "pharmacy" concept. This concept has saved Fort Lewis more than $27,000. The HMCC maintains an extensive shelf-life management program to ensure an extended life for hazardous materials, thereby minimizing the amount of hazardous waste generated from materials with expired shelf life. The HMCC also provides an on-site paint mixing operation that can meet any customer's color requirement, minimizing paint distribution to smaller containers and reducing the amount of hazardous waste generated. By the end of FY 1999, this process had saved customers over $6,000.

The HMCC captures excess serviceable hazardous materials that normally would end up in the waste stream. The HMCC currently has an inventory of 63 separate line items. The center processes the materials into a special inventory at a reduced price of one penny per line item, reissuing the unused serviceable material free to all customers at Fort Lewis and Camp Murray. The customer gains because of greatly reduced charges. From inception to the present, the reduced issue program saved more than $318,000.

By using blanket purchase agreements with local vendors, Fort Hood's full-service HMCC provides 'just-in-time' ordering. The use of these agreements decreases the on-hand quantities of hazardous substances. In addition, the center operates and manages a state-of-the-art cylinder storage area and preventive maintenance program for all compressed gas cylinders on Fort Lewis and Camp Murray.

White Sands missile park displays a variety of missiles and rockets tested at White Sands.

To lessen environmental impact still further, the HMCC uses the Closed Loop Program to recycle oils instead of using virgin oils.

White Sands Missile Range's Leaders Plan for Stewardship

White Sands Missile Range covers some two million acres in south central New Mexico. On and around it are numerous sites of cultural, archaeological, and environmental significance, ranging from the White Sands National Monument—a unique environment of white gypsum dunes—to lava beds that figure in Native American religious beliefs, to Indian burial grounds and pueblos, to ruins of a Spanish mission, to a cave archaeological site that may represent the earliest record of human presence in the Americas. As the national test range, White Sands must carry out its mission and at the same time safeguard these unique assets.

Senior leaders at White Sands Missile Range addressed its public responsibilities in the strategic planning process and incorporated them under Stewardship in the Strategic Plan. The President's Quality Award Board of Examiners recognized this as a "Best Practice." Including this stewardship consideration in the strategic plan ensures that the care and mainte-

nance of the range's cultural, archeological, and environmental assets will be reviewed and monitored during the strategic planning cycle.

Addressing Issues of Public Concern

Several organizations addressed issues of public concern such as the removal of land mines, missile range safety, and transfer of beneficial technologies to public use.

CERDEC Develops Technologies for Humanitarian Demining

The Communications-Electronics Command Research, Development, and Engineering Center (CERDEC)'s Night Vision/Electronic Sensors Directorate (NVESD) is the executive agent for the U.S. Humanitarian Demining Research and Development (R&D) Program. Congress charged this program to develop technologies to help mine-affected countries deal with the leftover weapons of war that, according to United Nations statistics, injure or kill approximately 26,000 civilians each year.

This Humanitarian Demining R&D program element focuses on the testing, demonstration, and validation of equipment suitable for immediate use in various international humanitarian demining environments. The goal is to provide the equipment to the international demining community so that they may assess the equipment's capabilities in actual demining conditions. This program focuses on R&D technology development that reduces the time and cost associated with demining, while improving the overall safety of the operator. This is accomplished by adapting commercial off-the-shelf equipment, integrating mature technologies, and leveraging from past and current R&D project activity in tactical countermine and unexploded ordnance clearance. The program's primary objectives are to advance mechanical clearance technology, improve existing mine detection technologies, overcome the heavy vegetation problems in specific environments, and provide improved protection for deminers. These areas of emphasis were adopted as a direct result of feedback received at the Humanitarian Demining Workshop held in April 1999.

Program accomplishments in 1999 were substantial. NVESD representatives successfully developed and demonstrated nineteen technologies in mine/minefield detection, mine/vegetation clearance, individual tools, and individual protection equipment. They deployed and demonstrated demining technologies worldwide—among others the Floating Mine Blade in Guantanamo Bay, Cuba; the Enhanced Teleoperated Ordnance Disposal System in Egypt and Jordan; Mini Mine Detectors and visors in Jordan; the Air Spade, LEXFOAM, and Mine Marking Foam in Ecuador; Mine Marking Foam in Peru; Rotar in Namibia; and Commercial Flares and Mine Marking Foam in Kosovo. They initiated an international mine detector pilot project to test and evaluate 25 commercially available metal detectors against known antipersonnel mine threats in environments representative of those where mine casualties are the most severe.

White Sands Missile Range Upgrades Unexploded Ordnance Safety

By the nature of its mission, White Sands must maintain a high level of safety awareness, especially with regard to unexploded ordnance. Not only employees, but also visitors may have occasion to go onto the range. The Commanding General has placed special emphasis on

The Mine Marking and Neutralization Foam hardens and impregnates the exposed parts of the mine and renders the fuze inoperative.

ensuring that White Sands operates and maintains a dynamic safety program with special emphasis on unexploded ordnance. Among the tools used are a special video that must be viewed by all employees and all visitors going onto the range; special identity tags they must wear, indicating they have received special training; review of incidents and accidents; and special attention to unexploded ordnance in workplace meetings. The range conducted a series of special classes during the commander-directed safety standdown day. Public access to the range for hunting has been placed under tighter control. As a result, employees, soldiers, and visitors gain high awareness of the potential for death and injury from unexploded ordnance.

Letterkenny Responds to Spring Valley Unexploded Ordnance Emergency

Letterkenny Army Depot employees responded swiftly to an urgent request for support from the Spring Valley unexploded ordnance clean-up site near Washington, DC.

On 21 July 1999, the Spring Valley unexploded ordnance clean-up operation requested an urgent test of the site's new filter system. Because the site was near Washington, a series of delays caused by the growing size of the unexploded ordnance find had become very politically sensitive. It was imperative that the filters be operational by close of business on 23 July, so that removal operations could start again on 26 July.

Normally, such a request would have involved a preliminary site visit and at least two weeks of financial and technical planning. But, focusing on the needs of the community, Letterkenny streamlined its planning processes to put its Nuclear, Biological, and Chemical Filter Test Team on the road within 24 hours. Conversations among personnel from Letterkenny, Spring Valley, and the Chemical and Biological Defense Command (CBDCOM) became a plan to deploy the team on 22 July and start testing the next morning.

To deal with complicating factors that would normally have extended the tests into another day, the team worked closely with the site contractor, the Army Corps of Engineers, and CBDCOM to tailor the tests and complete all required filter system testing and service in less than eight hours.

All tests (and the filter replacements they prescribed) were finished and the Letterkenny team was off the site by 1600 on 23 July—less than 60 hours after Letterkenny received the request for support.

TACOM-ARDEC Seeks Opportunities for Technology Spinoff

In addition to maturing technologies for armament applications, TACOM-ARDEC looks for opportunities to transfer beneficial technologies to public use through Cooperative Research and Development Agreements with industry, the medical community, and various consortia. Examples of successful technology transfer include improved mammography technology and airport baggage inspection systems derived from TACOM-ARDEC's munitions x-ray techniques, an epileptic seizure monitor from the Center's munitions autoloader mechanisms, and potential AIDS remediation from its high-energy explosives molecular technology.

Natick Scientist Chairs the Institute of Food Technologists' Nonthermal Processing Division

Dr. C. Patrick Dunne, a scientist at the U.S. Army Natick Soldier Center, has been named as Chair of the Institute of Food Technologists' new Nonthermal Processing Division. The Division seeks to provide state-of-the-art information on innovative technologies aimed at extending the shelf life of foods while preserving quality, nutrition, and safety—technologies that include pulsed electric field, high hydro-

static pressure, ultrasound, pulsed light, and oscillating magnetic fields.

The foundation of this new division was laid by a series of workshops on pulsed electric field processing initiated in March 1997 by Natick and the Electric Power Research Institute Food Technology Alliance. From the beginning, these workshops involved government, academic, and industrial scientists and engineers from the U.S. and Europe. Some of the active participants include Unilever, PurePulse Technologies, Flow International, E-Beam, University of Missouri, University of Minnesota, Ohio State University, Iowa State University, and Washington State University.

Support of Key Communities

Good citizenship in support of key communities requires the organization to be both a contributing member of society and a positive influence on other organizations. Opportunities for the organization, senior leaders, and employees to practice this kind of involvement and leadership can include efforts to strengthen community services, education, health care, the environment, and the practices of trade, business, and professional associations. For instance, organizations could partner with other businesses and healthcare providers to supply education and volunteer services to address public health issues.

Support of Key Communities: Success Stories of 1999

Initiatives in support of key communities tended to fall into two categories in 1999: either broad-based partnering with other groups in the community or tightly focused efforts in support of specific communities like youth or families.

Partnering

Partnering brought Army organizations together with industry, education, local and state communities, and other government participants in a variety of enterprises for the public good.

The partners can achieve together what neither could accomplish alone; the partnerships also minimize duplication, conserve installation and community funds, retain popular programs threatened by shrinking market base, and further positive community relations.

TACOM-ARDEC Forms Creative Partnering Arrangements

TACOM-ARDEC has formed a number of unique and creative partnering arrangements to leverage technology, facilities, and mission functions. Among these are the Picatinny Innovation Center, recreation partnerships with neighboring communities, and an innovative working relationship with a prime contractor.

The Picatinny Innovation Center encourages industry partners and TACOM-ARDEC staff to leverage cooperative innovative technologies to put forward new ideas and explore new research areas. The Picatinny Innovation Center is a business incubator that enables companies involved in cooperative research relationships with TACOM-ARDEC to locate all or part of their business at Picatinny Arsenal. This provides a unique opportunity to leverage technology, capabilities, and facilities; it also encourages commercialization of new and improved processes, products, and services. A partnership with County College of Morris made this Center possible.

Recreation partnerships with surrounding communities allow TACOM-ARDEC to share

various recreational facilities. The partners can achieve together what neither could accomplish alone; the partnerships also minimize duplication, conserve installation and community funds, retain popular programs threatened by shrinking market base, and further positive community relations. By partnering where it makes sense, the participants share vision, commitment, and trust. Enhanced recreational opportunities for all communities include playing fields, a swimming pool, a fitness center, an aquatic park, in-line hockey, and services for school-age children.

An innovative working relationship exists between TACOM-ARDEC and United Defense Limited Partnership, a prime contractor. TACOM-ARDEC has the design and development responsibility for armament for the Crusader weapon system, while United Defense Limited Partnership has programmatic and technical leadership. This partnership allows the system prime contractor to maintain overall responsibility for the program, while gaining the expertise of TACOM-ARDEC for the armament subsystem in the unique acquisition reform arena of non-government furnished equipment.

CERDEC Holds a Community Outreach Forum

The Communications-Electronics Command Research, Development, and Engineering Center at Fort Monmouth, New Jersey, sponsored the first Fort Monmouth Outreach Forum. Developed by the Fort Monmouth Integrated Community Outreach Networks Office, the forum took place 27-28 January 1999; it was the first meeting of such magnitude ever held at Fort Monmouth.

The forum brought together over 150 community leaders and coordinators interested in educational programs for youth. Conferees were informed, enlightened, and challenged by speakers and panelists from across government, education, and private enterprise. Staff members from the Department of Defense, Department of the Army, Army Materiel Command, U.S. Department of Education, National Science Board, National Science Center, major universities, professional associations, and educational consortia shared information from their unique perspectives.

The forum provided attendees the opportunity to hear some of the best panelists in the country discuss what works and what does not in the area of community outreach. Attendees were given the opportunity to hear new perspectives and to discuss specific community challenges. The forum strengthened the communities by providing educational resources and serving as a platform for networking and communications.

Through the forum, Fort Monmouth gained the opportunity to serve as the leader in paving the way to a brighter future for local youth. This community-oriented program provided attendees with valuable information to motivate American young people, many of whom might well turn away from the rigor and discipline of engineering and science without the encouragement of community leaders who serve as mentors and teachers.

TACOM-ARDEC Fosters Corporate Citizenship

TACOM-ARDEC's Corporate Responsibility Plan strives to make TACOM-ARDEC a model corporate citizen and a welcome neighbor within the state and local community. The External Affairs Office spearheads this plan, which looks at TACOM-ARDEC's capabilities for community support and involvement for the coming year and evaluates results. TACOM-ARDEC has a major impact in the community, both as a corporation and through encouraging employees to "give back."

The command's organizational paper, *Voice*, carries a regular "Call for Volunteers" feature, and similar appeals go out site-wide in electronic mail messages, flyers, and notices and on

billboards at entrances to Picatinny Arsenal. To recognize the contributions of volunteers, the command holds an annual Volunteer Appreciation event sponsored by the Morale, Welfare, and Recreation Office.

Operating within the community, TACOM-ARDEC has mutual aid agreements for local fire and hazardous materials response and explosive ordnance disposal. The command also provides storage of emergency supplies for the State Police, operates a noise abatement program, and supports construction of a Rockaway Township Regional Sewage System.

The Arsenal shares facilities with surrounding towns—allowing use of the golf course, the Club, the fitness center, ball fields, the community pool, the in-line hockey rink, and the youth activities center—and provides protection of historic and archaeological sites.

ATC Participates in Department of Defense Pilot Program

The U.S. Army Aberdeen Test Center (ATC) proactively sought and received designation as the U.S. Army's Test and Evaluation Center participant in the Fiscal Year 1999 Defense Authorization Bill's Section 246 pilot program. Under this program, ATC has the statute authority to waive regulations that inhibit partnerships with private industry and academia. ATC is using the authority to forge new alliances with both private industry and academia to address strategic issues facing the nation, such as cyberterrorism and force protection.

APG Creates a Science and Technology Board

To dramatically improve cooperation between the tenants at Aberdeen Proving Ground (APG) and the local community—state and local government, local private companies, and state and local academia—APG has created the APG Science and Technology Board. As a charter member of the board, Aberdeen Test Center hopes to forge a Strategic Alliance for Automotive Development: an alliance that includes ATC, the Harford County government, the University of Maryland system, and the Maryland state government.

One intent of this alliance is to create a simulation center for automotive excellence at the Harford County Higher Education and Applied Technology (HEAT) Center. The Aberdeen Test Center is actively pursuing partnering initiatives with the academic community located at the HEAT Center. The academic partners would be Harford Community College and the University of Maryland system. This partnership would link the proposed automotive simulation center with an outdoor automotive laboratory at ATC. The proposal is strongly supported by the Harford County government.

Supporting Specific Communities

Army organizations rallied to the support of specific communities in need of help, such as students and at-risk youth.

Fort Hood Initiatives Strengthen Community Schools

Through several initiatives in support of local schools, Fort Hood assisted the surrounding local communities as well as the installation community.

Communities in Schools Partnership. The Greater Fort Hood Area Communities in Schools Program and the Fort's Family Advocacy Program are in partnership to provide skills training to students in middle school and high school. Communities in Schools schedules classes in conflict management, stress management, peer pressure, values, and self-esteem. The Family Advocacy Program provides the trainer and materials needed to conduct the class.

Teen Trainer Program. In November 1997, the Fort Hood Army Family Team Building (AFTB) Program expanded its very successful AFTB Teen Trainer Program into one of the local middle schools. AFTB volunteers—teens and adults—conducted an AFTB Instructor Training Workshop for eighth-grade volunteers from Palo Alto Middle School. The teens graduated as official AFTB Teen Trainers, with certificates, T-shirts, and training materials, and were recorded as official Fort Hood volunteers.

In October 1998, the program expanded further by training 34 youth from local middle, ninth-grade, and high schools. The AFTB Teen Trainers teach AFTB classes during a life-skills period at the school. This program has been a tremendous success. The teens—both the trainers and the young people attending the classes—are learning valuable skills that will serve them well. Additionally, the partnership with the school enhances communication, cooperation, and understanding between the Army and the teachers and administrators. Customer feedback is so overwhelmingly positive that the program will expand to include more schools.

Additionally, the partnership with the school enhances communication, cooperation, and understanding between the Army and the teachers and administrators.

Social Work Intern Partnership. On a higher educational level, Fort Hood formed an intern partnership with the Social Work Department of the University of Central Texas. To provide a training environment for future social workers, the Fort Hood Family Advocacy Program accepts interns from the university. Each intern is integrated into the Family Advocacy Program network and has the opportunity to develop a personal training style. Interns can also acquire knowledge in the areas of parenting, conflict management, stress management, marriage, and family relationships, plus experience in crisis intervention through answering and taking referrals on the domestic violence hotline. The interns provide 244 dedicated hours of service per semester. Interns receive training in life skills programs, and the Family Advocacy Program has additional personnel to reach out to soldiers and their families.

SBCCOM's Soldier Systems Center Gives Young Women Role Models in Science and Engineering

The SBCCOM Soldier Systems Center Women in Science and Engineering (WISE) team works through community schools to encourage girls and young women to pursue careers in science and engineering. The strategy to implement this goal is direct interaction between the Center's women scientists and engineers and the target audience.

The team's objective is to arrange at least six events a year at local schools, showcasing women scientists and engineers as career role models. The team also has a broader, more evolutionary goal: to demonstrate to boys the reality of women in high-tech jobs. Team members see this as a way to eliminate one of the potential barriers that prevent girls from entering high-tech areas. Thus the WISE team has executed an integrated plan that includes direct interaction in the classroom, tours of the Command, participation in career days, and sponsorship of community activities.

From the program's beginning in 1996 onward, the team's work has grown to include many towns and interaction with over 1,000 students. The program has been nominated for inclusion in the President's Interagency Council on Women's Annual Federal Report, *America's Commitment 2000: Federal Programs Benefiting Women and New Initiatives.*

Fort Wainwright DENTAC Partners with Public Health in a Win-Win Arrangement

The U.S. Army Dental Activity (DENTAC) at Fort Wainwright shares personnel resources with the local U.S. Public Health Service in a program that permits each organization to serve its customers better and that provides expanded job-related growth opportunities for the staff. Pediatric dental specialists from the Wainwright DENTAC provide care for the Public Health Service's Alaskan child population. In return, the Public Health Service provides needed general dentistry services to Fort Wainwright's beneficiary population. Soldiers and their family members in the Fort Wainwright community receive expanded dental care without decreasing local children's dental services. Pediatric dental specialists have job enrichment opportunities and the chance to broaden their skills. All costs associated with the partnership are borne by the Public Health Service, making the program a favorable business arrangement as well.

CERDEC Promotes Education in Science, Technology, and Engineering

The Communications-Electronics Command Research, Development and Engineering Center, at Fort Monmouth, New Jersey, pursued several initiatives to foster education in science, technology, and engineering.

Monmouth University Advisory Board. To make Monmouth University aware of Fort Monmouth's needs in these areas of curriculum and research, Dr. Louis Marquet, Director of CECOM's Research, Development, and Engineering Center, and Mr. Dennis Turner, Director of the Software Engineering Center, became CECOM representatives on the Advisory Board for the university's School of Science, Technology, and Engineering, along with representatives from high-tech industries and Monmouth University. The School of Science, Technology, and Engineering actively fosters learning, quantitative reasoning, and scientific inquiry. The goal is to lead in the innovative development and delivery of curricula and in providing creative solutions to problems that include significant technical components. The focus is on application of technical research to the solution of contemporary global problems of regional interest. Dr. Marquet and Mr. Turner will work to influence the curricula and research to help meet the Army's information technology and software challenges.

National Youth Leadership Forum. CERDEC's Night Vision/Electronic Sensors Directorate participated in both the Presidential Classroom program and the National Youth Leadership Forum on Defense, Intelligence, and Diplomacy. These programs expose America's brightest high school students to numerous exciting and challenging careers available in vitally important fields. The forum provides an intense and stimulating six-day exploration in the field of national security and diplomacy and related careers. Night Vision hosted five tour groups of about 36 students each during 1999. After a brief orientation, the students visited work areas where they could use currently fielded equipment, or where other devices or training aids were in different stages of research and development. The students' responses and questions indicate that the time and effort expended on the part of government employees motivated and inspired them to seriously consider public service as a career.

Women in Science and Engineering Conference. At the personal invitation of Renata Price, Army Materiel Command's Assistant Deputy Chief of Staff for Research, Development, and Acquisition (Science, Technology, and Engineering), CERDEC's Night Vision and Electronic Sensors Directorate supported the eighteenth annual Women in Science and Engineering Conference. NVESD hosted an afternoon workshop for a group of 30 high school students. The three-hour workshop provided illustrative examples of a cross section of NVESD's advanced science and technology initiatives. Seven subject matter experts presented a series of teaching lessons, equipment demonstrations, and interactive displays intended to engage and encourage the young women students to pursue science and engineering careers. The topics were an Introduction to NVESD, Sensors, Visible and Infrared Spectrum, Perception and Thermal Imagery, the ROC-V Thermal Trainer, Image Intensification, Thermal Imaging, and Deception and Camouflage. Ms. Robin-Lynn McClean, project leader for Deception and Camouflage, talked about her experiences pursuing a science and engineering career from industry to academia to Defense, while fitting in a family life. The workshop was very well received and kept the girls' interest, evoking numerous questions. Though this event demanded the time and effort of many people, it fit nicely into the overall recruitment campaign strategy as an element of the NVESD outreach program.

"Conquest of Darkness" Exhibit. CECOM also contributed to public knowledge of science with the "Conquest of Darkness" exhibit at the National Science Center's Fort Discovery. Fort Discovery is an interactive science center in Augusta, Georgia. The National Science Center, in partnership with the Army, is providing an area where the public can learn scientific principles and experience their appli-cation firsthand. Opened to the public in early July, the exhibit provides an extra dim-ension of realism to scientific theories. Military sensors and equipment are available for hands-on operation, and information is provided regarding humanitarian demining and the commercialization of military technology in medicine and law enforcement.

Fort McPherson/Fort Gillem Garrison Works with Atlanta West End Rotary To Establish Character Bound Program for Disadvantaged Youth

In collaboration with the Atlanta West End Rotary, Boys and Girls Clubs of metropolitan Atlanta, and Communities in Schools, the U.S. Army Garrison of Fort McPherson and Fort Gillem has established a program for disadvantaged middle school and high school youth that focuses on building character, values, and principles. The David A. Bramlett Character Bound Program was conceived in July 1998. Its purpose is to provide an opportunity for at-risk youth to experience a military environment for 48 hours. The goals are to promote self-confidence through trust and team-based activities.

The initial excursion occurred at Fort McPherson on 13-14 May 1999. The U.S. Army Garrison hosted 23 students from the community. Members of the highly respected Sergeant Audie Murphy Club served as role models during the two-day visit. The students learned by doing what soldiers do.

The program will serve as a model for other installations to follow in the future. Through the Georgia Military Affairs Coordinating Committee, other installations have signed up for future excursions. During the pilot year, June 1999 to July 2000, the Program will sponsor about 150 youth in five character-building and career exploration visits.

Fort Hood Family Advocacy Assists Youth at Risk

Fort Hood's Family Advocacy Program provides several types of educational services in support of young people at risk.

Community Resources for Youth at Risk. Family Advocacy coordinates efforts with the military and civilian community to educate Military Youth Review Board staff on the civilian resources available for youth considered at risk. Agencies participating in this endeavor are Communities in Schools, Americorps Corporation (a YMCA partnership), Youth Services Bureau, the Bell County Juvenile Prevention Services Branch, and the Bell and Coryell County Juvenile Probation Departments. This program has been successful in providing for at-risk youth.

"For Kids' Sake." "For Kids' Sake" is a collaborative effort of Family Advocacy and the Practice Parent Education Program of the Killeen and Belton Independent School Districts. This four-hour seminar focuses on the needs of children during the stressful time of divorce and provides techniques to parents that may help their children to cope more successfully. The seminar is designed to provide an opportunity for divorcing parents to build a healthy co-parenting relationship. Topics include the way divorce affects children; what happens when children are caught in the middle; and how to maintain a meaningful relationship with the children. Interested parents or professionals may attend. Seminars are offered twice a month.

"Raising Adults." "Raising Adults" is a unique self-paced education program using the latest in audiotape and supplemental behavior adjustment workbook presentation techniques. This form of parent education eliminates the formal classroom setting, increases opportunity for couples to train together, allows self-paced education, and eliminates childcare requirements. Participants gain or enhance skills for correcting undesirable child behavior quickly and easily without a power struggle. The supplemental behavior adjustment workbook provides a tool for parents to apply hands-on techniques to develop responsibility, self-discipline, and self-reliance in children of all ages.

"Expect Respect." "Expect Respect" addresses the issue of violence and other forms of abuse and control that youth experience in dating relationships. Extreme jealousy, pushing, hitting, name-calling, put-downs, and threats are not uncommon as young people experiment with the roles of boyfriend and girlfriend. These patterns often continue into adulthood with increasingly destructive consequences for

partners, children, and society. The aim of this program is to open a dialogue with young people about some of these issues and to raise awareness of violence-free alternatives. "Expect Respect" consists of a 90-minute interactive presentation facilitated by a Family Advocacy Program trainer. The curriculum incorporates lecture, group discussion, role play, printed handouts, and a 24-minute video entitled *Dating Violence: The Hidden Secret.* In the event of abuse, students are encouraged to get help for themselves or their friends from a counselor, teacher, or parent. The presenter's primary role is to facilitate a discussion, giving participants the opportunity to talk, listen, and learn from each other. Volunteers are also trained as presenters.

MEDDAC at Fort Hood Works with Local School District To Deter Student Athlete Drug Use

The independent school district of Killeen, Texas, has instituted a drug testing policy for its school athletes. As part of the community effort to implement a safer drug free policy, the

U.S. Army Medical Activity (MEDDAC) at Fort Hood has developed a program to deter drug use among student athletes. The MEDDAC and U.S. Army Garrison Alcohol and Drug Abuse Prevention and Control Program staffs are helping to implement and follow up the initiative by talking with parents and students and providing "Parent Alert" information flyers. Upon request, staff members provide assessment, evaluation, referral services, and urinalysis testing. This is an effort to make young people understand the Army's concerns and willingness to get involved.

Category 2: Strategic Planning

Strategic planning is the setting of directions by the senior leadership of an organization, with a clear view of what the organization should achieve, for whom, and with what resources. Operational performance excellence and customer-driven quality are key strategic issues.

Improving operational performance pays off in productivity growth and economic competitiveness. Building operational capability—including speed, responsiveness, and flexibility—represents an investment in competitive fitness.

In customer-driven quality, the focus is on the elements that drive customer satisfaction and retention—key factors in competitiveness and success.

Improvement and learning also need to be embedded in work processes. The special role of strategic planning is to align work processes with the organization's strategic directions, thus ensuring that improvement and learning reinforce organizational priorities.

Strategic planning involves two distinct processes: strategy development and strategy deployment.

Strategy Development

Strategy development is the way the organization develops its view of the future, sets strategic directions, and translates these directions into a clear basis for action. It usually requires the achievement of mission-related goals, as well as operational effectiveness. Thus the view of the future must take into account not only the current mission environment, but also how to adapt to changing requirements and how to compete. "How to compete" offers many options and requires understanding of the organization's own strengths and weaknesses and those of its competitors. Turning the strategy into an action plan calls for clear and measurable performance objectives. These objectives will guide the design and management of key processes and may also serve to align communications, human resources, compensation, and recognition systems with performance goals.

In customer-driven quality, the focus is on the elements that drive customer satisfaction and retention—key factors in competitiveness and success.

Strategy development has two aspects: the strategy development process and the actual strategic objectives.

Strategy Development Process

The strategy development process itself calls for information on all the key influences, risks, challenges, and other factors that could affect the organization's future opportunities and directions—taking as long a view as possible. This information provides a thorough and

realistic context for the development of a strategy focused on customers and mission, to guide ongoing decision making, resource allocation, and organization-wide management. An important part of strategic planning is projecting the future mission and competitive environment, in order to reduce threats, shorten reaction time, and identify opportunities.

Strategy Development Process: Success Stories of 1999

Army commands have approached the strategy development process in somewhat different ways, according to their mission, circumstances, and experience in strategic planning. Several successful initiatives involved aspects of strategy development, such as sharing knowledge and experience, creating a planning structure, and crafting a plan.

If you always do what you've always done, you'll always get what you've always got.

Sharing Knowledge and Experience

Some organizations established special advisory boards or met with groups of peers to share knowledge and experience.

STRICOM Establishes a Senior Leader Advisory Board

The Simulation, Training, and Instrumentation Command (STRICOM) established a Senior Leader Advisory Board to assess how well STRICOM is achieving its mission and to provide guidance on its future strategic vision and direction. The members of the Board are retired general officers and senior Army civilian executives; they have a variety of experience from Army organizations and industry. The first two meetings took place in February and July 1999, with follow-on meetings scheduled every six months. The advice provided from the initial Board meetings is already helping the Command to focus on how best to accomplish its mission and chart a course for the future of STRICOM.

AMCOM's Team Redstone Establishes a General Officers' Forum

The Executive Steering Committee for the U.S. Army Aviation and Missile Command, setting out AMCOM's vision, mission, and goals, decided that one goal should be to "foster a synergistic relationship with our partners to ensure that aviation and missile systems continue to support the Army's vision." The General Officers' Forum—called the GO Forum—was an outgrowth of that goal.

Team Redstone's five general officers include AMCOM's Commanding General, Program Executive Officer (PEO) for Aviation, PEO for Tactical Missiles, PEO for Air and Missile Defense, and Deputy for Systems Acquisition. Since 22 June 1998, these five and other top leaders have held General Officers' Partnering Meetings to discuss common problems and devise solutions. They meet quarterly to discuss issues affecting AMCOM's customers, the Program Executive Offices. Areas covered included integrated data environment, logistics, technology, and contracting.

Since developing the partnership, the Forum members have signed a Partnership Charter supporting the Omnibus 2000 Program to acquire advisory and assistance services critical to the successful accomplishment of their missions. The Forum has also created an Overarching Integrated Product Team and chartered Working Level Integrated Product Teams. Since the formation of the GO Forum, AMCOM has become more customer-focused.

CERDEC Director Elected Chairman of NATO Sensors and Electronics Panel

Dr. Louis Marquet, Director of the U.S. Army Communications-Electronics Research,

Development, and Engineering Center (CERDEC), has been elected chairman of the Sensors and Electronics Panel of the NATO Research and Technology Agency, which involves 15 countries.

Some of the Panel's objectives are to maintain expert networks and foster information exchange; identify and review research areas of common interest; and recommend and undertake technical studies, conferences, and projects with approval from the Research and Technology Board. The Panel also provides advice to the Research and Technology Board in the Panel's field of expertise and coordinates with other Panels' common activities, such as electronic warfare, communications, chemical detection, displays, and mine detection.

Dr. Fenner Milton, Director of CERDEC's Night Vision/Electronic Sensors Directorate, is one of three United States representatives on the NATO panel.

CERDEC's leadership and participation provide a significant opportunity to advance technology in affordable electronics and active and passive sensors as they pertain to reconnaissance, surveillance and target acquisition, electronic warfare, com-munications, and navigation and to enhance sensor capabilities through multi-sensor integration and fusion.

Creating a Planning Structure

Other organizations created formal planning structures to undertake the task of developing ideas.

MEDDAC at Fort Hood Creates Business Process Reengineering Cell

At its Strategic Planning Conference in March 1997, the U.S. Army Medical Department Activity (MEDDAC) leadership realized there was ambiguity as to where MEDDAC staff went to develop their ideas. The MEDDAC Chief of Staff created a Business Process Reengineering (BPR) cell to centralize a location where ideas for redesign could be initiated.

The goal of applying BPR methodology to major processes is to promote efficient and effective delivery of high quality healthcare services. The BPR Team facilitates the process of developing several different instruments: strategic and business plans; activity and data models; total cost studies of activities; benchmarking studies; and functional economic analyses of possible alternatives for delivering service.

The goal of applying BPR methodology to major processes is to promote efficient and effective delivery of high quality healthcare services.

Processes for reengineering can be identified through the Command Group; BPR Branch; department, division, or service chief; or employees. The MEDDAC's BPR cell is currently involved in reengineering two product lines: Mother/Baby Care and Family Care.

98th Area Support Group Directorate of Public Works Becomes Reinvention Laboratory

The Secretary of the Army has designated the 98th Area Support Group Directorate of Public Works—in Wuerzburg, Germany—as a Reinvention Laboratory, giving it broad powers to bypass bureaucratic barriers and champion innovation.

To implement overall strategic planning, Public Works has instituted Activity Based Costing, a system for determining the true cost of a product or service in terms of personnel, materials, and overhead. Activity Based Costing is already in place at the 235th Base Support Battalion to improve the cost

measurement system, and it will soon be implemented at the headquarters and the other three base support battalions.

Activity Based Costing is already in place at the 235th Base Support Battalion to improve the cost measurement system, and it will soon be implemented at the headquarters and the other three base support battalions.

Activity Based Costing will also be used to establish performance measures and accomplish best practices benchmarking with the German public and private sector.

INSCOM, USAIC, and Fort Huachuca Form an Army After Next Intelligence, Surveillance, and Reconnaissance Tiger Team

The U.S. Army Intelligence and Security Command (INSCOM), the U.S. Army Intelligence Center (USAIC), and Fort Huachuca have formed an Intelligence, Surveillance, and Reconnaissance (ISR) Tiger Team in support of the Army After Next (AAN) project.

The mission of Army After Next is to conduct broad studies of warfare out to the year 2025 to help senior leaders develop a vision of future Army requirements. It seeks to frame issues that will be vital to Army development after about 2010 and to provide those issues to senior Army leadership in a format suitable for integration into Training and Doctrine Command (TRADOC) combat development programs.

The Tiger Team was formed to support the Intelligence, Surveillance, and Reconnaissance part of AAN's effort. Established under a formal charter, it includes full-time members from the U.S. Army Intelligence Center and Fort Huachuca and the U.S. Army Intelligence and Security Command. The virtual membership includes the Headquarters, Department of the Army, Deputy Chief of Staff for Intelligence (DCSINT); Headquarters, INSCOM; TRADOC's DCSINT and Deputy Chief of Staff, Doctrine; the National Reconnaissance Office; the U.S. Army Research Lab; U.S. Space and Missile Defense Command; and the National Imagery and Mapping Agency.

Crafting a Plan

The work of these and many other planning groups was ultimately to craft a strategic plan. The plans themselves differed according to organizational level and mission.

AMCOM Sets a Course: A Strategic Plan and a Transition

At U.S. Army Aviation and Missile Command the Strategic Planning Office, newly established in the first quarter of FY 1998, worked with the AMCOM Executive Steering Committee to assess the command's environment and adopt an integrated strategic planning process. In June 1998 the office published a pamphlet outlining the command's vision, mission, goals, and values, with messages from the Commanding General and Executive Steering Committee members. Ten thousand copies were distributed to employees, higher headquarters, and customers. Strategic focus organizational posters were mounted on the walls throughout the Command.

On 10 March 1999, the first Strategic Plan was approved and published. Its publication marked the end of the first stage of the process. The plan was also posted to the AMCOM Intranet. Action Plans were developed to track progress toward goals.

While this process was going forward, AMCOM gained a new Commanding General. On 10 August 1999, AMCOM's senior managers conducted an off-site conference to

introduce him and to present various issues that the Executive Steering Committee considered urgent. These concerns were human resources, financial resources, customer relations, and information technology.

The general started the meeting by presenting his philosophy, his vision for the Command, and proposed products. Then teams were formed around the four topics identified for small group discussion and resolution. Each team selected three strategies or solutions as options and briefed them to the Executive Steering Committee. As a result of the Committee's findings, the teams developed action plans with milestones to implement solutions and strategies. Senior leaders periodically brief the Committee on the status of the action plans.

The AMCOM Board of Directors also met with the Commander to discuss how the members envisioned AMCOM in the year 2004, to update him on prior Board meetings, and to discuss several strategies for an ANCOM organizational structure based on mission and goals.

CAA Plans for Responsiveness

Strategic planning at the Center for Army Analysis (CAA) is an annual process involving the whole organization. It begins in late summer with the Director's assessment of the Center's strengths and weaknesses and with basic assumptions on the political, military, and analytical environment, along with perceived threats and opportunities for the Center.

Because CAA is a response-oriented organization, these considerations form the basis of a set of open-ended generic goals and implementing strategies. A Leadership Team consisting of the Center's supervisory and advisory personnel then ratifies this draft plan. During the first quarter of the next fiscal year, the Director presents the plan to all Center personnel as the State of the Center Address. This briefing includes a review of the previous year's plan, including accomplishments, progress, resources, and lessons learned, along with the goals, strategies, and specific directional alignments for the current year.

ARL Develops Business Planning

The Army Research Laboratory (ARL) was the only research laboratory to be designated a pilot project under the Government Performance and Results Act of 1993. As part of the pilot, ARL developed a business planning methodology that provides a useful tool for managing the research enterprise, as well as enabling any laboratory to comply with the requirement of the Act to produce strategic and performance plans.

The ARL Business Plan consists of four volumes that are constructed or reviewed in senior staff quarterly meetings. To make the business planning process meaningful and immediate, the meetings are planned to coincide with the Defense budget cycle. Volume I, the ARL Strategic Plan, looks out 10-15 years and contains long-range strategic goals for the organization. These goals are not mere generic statements; they are very specific, major technology vectors that the laboratory has chosen to move along, based on national defense requirements. To the extent possible for a research endeavor, these statements contain quantitative goals.

Volume II is the Long-Range Plan, which describes how ARL will resource the "big picture" described in Volume I. The Long-Range Plan (actually a database rather than a document) contains a description of the resources available to ARL throughout the Program Objective Memorandum period and shows how they are linked to the strategic goals in Volume I. Volume III is the Annual

Performance Plan, which describes the work to be undertaken in the upcoming fiscal year utilizing the resources allocated in Volume II. Volume III is prepared and discussed at the first quarterly meeting of the senior ARL staff, at the beginning of the new fiscal year.

Volume IV, the Annual Performance Report, summarizes the results of the lab's endeavors over the previous year. Both technical and managerial accomplishments are keyed to the previous year's Volume III, to track progress towards specific goals.

TRADOC Base Operations Support Builds Strategic Plan

At Fort Monroe, Virginia, the U.S. Army Training and Doctrine Command's Deputy Chief of Staff for Base Operations Support (DCSBOS) is the Action Agent for Reinvention within TRADOC. Its Mission Support Laboratory—one of four within the TRADOC Reinvention Center—is responsible for making TRADOC capable of maintaining infrastructure and quality of life in the 21st century.

The planning process includes a leadership conference offsite; extensive staffing of the plan throughout the organization and installations; development of goals, strategies, and long- and short-term objectives….

DCSBOS has built a solid strategic planning base through development and publication of the DCSBOS Strategic Plans 1999 and 2000. This planning had to provide for facilities and services at 17 Army installations within TRADOC—installations supporting the combat forces, training bases, and the industrial base. Each is comparable to a self-contained city.

The planning process includes a leadership conference offsite; extensive staffing of the plan throughout the organization and installations; development of goals, strategies, and long- and short-term objectives; and establishment of Performance Reviews for tracking the plans and making mid-year adjustments.

Publication of the strategic plans on the DCSBOS home page and electronic distribution throughout the installations and staff begin the deployment phase. True deployment is evident in the use of the plan to prepare annual work plans for the civilian and military members of the DCSBOS. The Plans also serve as input for the TRADOC Strategic Plan and as models for installation strategic plans. The DCSBOS document provides a rallying point for the efforts of the DCSBOS and his staff, allowing the organization to focus its energies and potential while eliminating unnecessary tasks.

Army Training Support Center Redesigns Infrastructure

Unprecedented warfighting modernization characterizes the environment for which the Army must train today. Increasing high-level interest in "jointness" and increasing use of simulation--both virtual and constructive—further characterize the training climate, while resources decrease. To meet these challenges, the Army Training Modernization Directorate at the Army Training Support Center (ATSC) is improving its planning process.

Historically, requirements for training support were derived from "schoolhouse" training developments and field input. But this process, even when it worked well, has not been adequate. Training support products are typically delivered several years after the initial recognition of need, because it takes time to develop programs and budgets.

The Army Training Modernization Directorate undertook a comprehensive analysis of the

Army Modernization Plan and the Army Science and Technology Master Plan, to determine the influence of Army modernization on the Training Support infrastructure. This multi-year study began when the directorate set out to devise a "live" functional architecture and operational profile to use in new Operational Requirement Documents and for devising Critical Operational Issues and Criteria. After this came development of a proactive training research and studies program to serve as a foundation for reinventing program planning methods. The program resulted in a strategic and comprehensive, "live" training support vision that will address training issues in the near-term (1-5 years), mid-term (5-10 years), and far-term (10-15 years).

The Army now has what it needs to produce training support strategies that will promote common training system architectures, sustain and modernize the Army's "live" training capability, and synchronize training requirements with resources and warfighting needs.

This precedent-setting work can serve as a template for planning by virtual and constructive training support organizations, to provide for a common, comprehensive training support planning process that contributes to the mutual understandings needed for cooperative training development ventures.

Intelligence, Surveillance, and Reconnaissance Tiger Team Provides Support to Army After Next Planning

The Army After Next Intelligence, Surveillance, and Reconnaissance Tiger Team provided support in wargames, franchises, and database creation throughout the Army After Next 1999 cycle, feeding information into what was essentially a strategic planning process. The Tiger Team developed Intelligence estimates; an ISR Annex; and Red organization, equipment, and force structure. The efforts of the Tiger Team culminated with support to the AAN 1999 Spring Wargame.

The ISR Tiger Team also investigated ISR concepts for the AAN era, including capability requirements, notional system descriptions, and enabling technologies for the 2025 timeframe and beyond.

The Vision for the ISR Tiger Team was to create the world's premier ISR capability—a capability that could plan and conduct synergistic Army/Joint/Combined ISR operations executed by highly competent active, reserve, and civilian professionals equipped with state-of-the-art systems. These systems will provide commanders and decision makers with dominant battle-space knowledge by integrating time-sensitive, specific, accurate, and relevant intelligence to support military operations and ISR at all echelons across the full spectrum of conflict.

Aberdeen Test Center Completes Its First Strategic Plan

As a key test center in the Developmental Test Command, the Aberdeen Test Center (ATC) submits resource requirements through a process called the Technology Data Acquisition Program. Through this process ATC surfaces its resource requirements to the highest levels of the Department of Defense.

In FY 1999 Aberdeen completed its first Strategic Plan to provide a stronger basis to the existing system. To compile this plan, the command reviewed the concepts contained in Army Vision 2010, Joint Vision 2010, Army After Next, Forward from the Sea, Operational

Maneuver from the Sea, and Vigilant Edge. The Aberdeen Test Center has submitted projects that address the concepts envisioned in the services' futuristic concepts and embedded these in the Strategic Plan. These projects are devised to posture ATC to have the facilities, instrumentation, and equipment needed to successfully test the next generation of service inventory. The projects are slated for funding in FY 2000 and beyond.

ATC also established an Army After Next team, chartered to focus on the concepts espoused in the ATC Strategic Plan—on providing ATC assets to the warfighter for training purposes. The concept is to test as the warfighter trains. ATC has conducted a number of successful large-scale training efforts. The largest was Operation Blue Crab, completed in June 1999—an exercise that encompassed units from all services and provided invaluable opportunities for ATC to provide unique and challenging training scenarios for active, reserve, and National Guard units.

TACOM-ARDEC Fine-Tunes Its Strategic Planning

The U.S. Army Armament Research, Development, and Engineering Center uses a disciplined, overarching strategic planning process that serves as a very effective management tool. TACOM-ARDEC's Associate Technical Director for Systems Concepts and Technology is the owner for the strategic planning process and the Corporate Strategic Plan.

Twice a year, at the Board of Directors meetings, the ARDEC senior managers review the overall strategy of the Corporate Strategic Plan. They revise Action Plans annually to adjust to execution-level changes. These strategic changes may occur after a significant event, such as when Defense or the Army changes a major policy or redirects a program, or when new customer requirements or legislation require major adjustment to the Corporate Strategic Plan. This customer-focused strategy development process involves all levels of the ARDEC workforce.

ARDEC's formal planning process yields four distinct, interrelated sets of documents: the Corporate Strategic Plan; four System Owners Plans; twenty Business Unit Business Plans; and a Corporate Performance Plan.

The process uses both formal and informal input gathered, analyzed, and prepared by ARDEC's cross-functional strategic planning cell. If major change is required, new guidance specifics are developed based on leadership direction. Additional information, augmenting this guidance, is first gathered from the workforce Random Work Groups and Business Unit Managers to ensure a complete corporate picture. This information enhances the Board of Directors guidance. A thorough Strengths, Limitations, Opportunities and Threats analysis comes next, to evaluate risks and options and to determine ARDEC's market position. The new Corporate Strategic Plan sets the stage for System Owners Plans and Business Unit Business Plans. Executing the plan brings the results desired.

The new Corporate Strategic Plan sets the stage for System Owners Plans and Business Unit Business Plans. Executing the plan brings the results desired.

As a corporate guide towards realization of the Key Success Factors and corporate objectives, the Board of Directors formulates a Commanding General's/Technical Director's Strategic Intent and six corporate objectives. These objectives and intents are then communicated to the workforce through electronic mail and storyboards placed throughout the work environment. These strategic objectives are adapted and integrated into Business Unit Business Plans and the

employee Total Army Performance Evaluation System.

Strategic Objectives

Strategic objectives are the product of the strategy development process, and they will serve as the basis for strategy deployment. They have been evaluated against the key factors likely to affect the future, and there is generally a timetable for accomplishing them.

Strategic Objectives: Success Stories of 1999

Among the strategic objectives that grew out of the 1999 strategy planning process, one set of objectives stood out: the science and technology objectives for which CERDEC's Night Vision/Electronic Sensors Directorate was the lead agency, and in particular the objective called "Paint the Night."

CERDEC's NVESD Leads in Science and Technology Objectives

In FY 1999 CERDEC's Night Vision/ Electronic Sensors Directorate was the lead agency in 12 of 14 science and technology objectives in the areas of night vision and electro-optic technology, countermine technology, and camouflage technologies. In addition, NVESD was the lead agency in three out of four Advanced Technology Demonstrations involving countermine, land warfare, and airborne systems.

The basic strategy of the Army Science and Technology (S&T) program is to change technology into operational systems to be prepared for future conflict. The current S&T program must focus on a new Army that addresses the need for power projection, mobility, information management, and highly survivable light and lethal forces. Through the coordination of the Combat Developer and the Materiel Developer, the Army gets a highly efficient coordinated effort that addresses Army requirements, eliminates duplication of effort, and provides effective feedback on program management.

The Training and Doctrine Command and the Army Materiel Command conduct an annual review of the Army science and technology program to assess the relevance of the S&T effort to warfighter concepts and requirements. This process also provides feedback to the

Materiel Developer on the relative merits of each S&T effort. It is this process that sets the strategic direction of research and development.

One S&T objective NVESD currently has is Paint the Night (PTN). The Paint the Night capability will allow the Army to evaluate sensor system requirements in simulation. Over the past five years NVESD has entered into agreements with industry to enhance PTN capabilities. Companies such as Silicon Graphics, Integrated, United Defense Partnership Limited, General Dynamics Land Systems, Data Cube, and Acusoft have Cooperative Research and Development Agreements with NVESD. The plan is to use commercial off-the-shelf products when available to enhance PTN capabilities. PTN is being integrated into Army programs—such as the U.S. Army Developmental Test Command's

Virtual Proving Ground, Fort Knox's Battle Lab reengineering experiments, and in-house Advanced Technology Demonstrations — to support Simulation and Modeling for Acquisition, Requirements, and Training (SMART).

Strategy Deployment

Strategy deployment is the way the organization's strategic objectives are translated into action plans and implemented. It involves two elements: the actual development and deployment of action plans and a projection of the organization's performance.

Action Plan Development and Deployment

Developing an action plan includes spelling out key performance requirements and measures, as well as aligning work unit, supplier, and partner plans. Of central importance is a method for achieving alignment and consistency—characteristics that also provide a basis for setting and communicating priorities for ongoing improvement. Performance measures are also critical to performance tracking.

Strategy Deployment: Success Stories of 1999

Several organizations achieved success in aligning strategic action plans, tracking performance, and communicating corporate direction.

Aligning Strategic Action Plans

TACOM-ARDEC Project Owners Facilitate Mid-Level Planning

After TACOM-ARDEC's strategic objectives have been communicated to the workforce, deployment of the objectives can truly begin. The long-range organizational views of employees and senior managers are an excellent start.

But complete deployment requires additional action. The Board of Directors appoints several project owners to facilitate the major actions needed to realize corporate objectives and help middle managers execute their part of the Action Plans prepared and monitored by the project owners.

At the corporate level, there are two types of strategic action plans. The first type is the System or Sub-system Owners Plan, which aligns the system's goals with corporate objectives. For example, the corporate personnel officer owns the Human Resource Sub-System Plan. He examines the human resource situation and outlines actions that would support the corresponding corporate objective, titled "People." When ARDEC senior leadership decided to hire new engineers in spite of downsizing directives, this decision greatly altered the in-place Human Resource Plan.

Action Plans of the second type are high-priority initiatives assigned to senior-level project officers. These Action Plans lay out the resources, milestones, and other necessary deployment actions. Action Plan owners report to the Board of Directors or Executive Council. Using corporate-level information, most Action Plans are updated from previous plans. When totally new Action Plans, such as the Y2K plan, are required, a project officer is appointed to prepare and execute it. Business Unit Business Plans are also Action Plans.

SBCCOM Heads Acquisition Planning for Joint Service General Purpose Mask

Technology transfer has made the use of chemical and biological weapons in developing countries more likely than it once was. Coupled with the potential for U.S. forces to become involved in these areas, in either an operational or a support capacity, the spread of these weapons has increased the need for a revolutionary improvement in protective masks. The Army's Project Manager for Nuclear,

Biological, and Chemical Defense Systems is the lead for materiel development of a next-generation protective mask to be used by all services.

The planning for this acquisition has been thorough and detailed. At SBCCOM a Joint Service Integrated Product Team was formed, with representatives from all services and technical areas—management, requirements, test, design and system engineering, and logistics. The team prepared a performance specification reflecting the approved Joint Operational Requirements Document and the key performance parameters. These included Toxic Industrial Materials filtration, lower weight and bulk, capability with current or emerging equipment, improved reliability, and improved mission performance for all services. The Acquisition Strategy and Request for Proposal embraced acquisition reform, full and open competition, and joint interoperability and supportability at the lowest Life Cycle Cost/Total Ownership Cost.

The Request for Proposal reflected long-range contracting strategy and schedule compression by including options for engineering and manufacturing development, production, and contractor logistic support and sustainment. It was paperless—a living draft and final version were posted on the Army Materiel Command (AMC) Web site—and provided for full and open competition, foreign and domestic. Program information was provided to all potential offerers by establishing an online "reading room." The document listed essential performance requirements only.

Commercial drawings and manuals were used, and commercial packaging was planned except for overseas shipment. Contractor and government testing was integrated during all phases.

Price will be evaluated based on Total Ownership Cost, which includes research and development, procurement, deployment, logistic support, performance risk, and peacetime disposal. Cost as an Independent Variable is included in the evaluation criteria and will be one of the processes used to manage Total Ownership Cost. Contractor Sustainment Support was included as a separately priced option.

SBCCOM's goal is to design a revolutionary new mask with significantly improved performance that maintains readiness at an affordable total ownership cost.

Tracking Performance

TACOM-ARDEC Systematically Tracks Key Performance Measures

TACOM-ARDEC uses several systematic, pre-planned methods to track key measures of performance. These key measures—corporate-level objectives, system and organization goals, and macro-level performance indicators—cascade down in a logical manner from the Corporate Strategic Plan to the System Owners Plans to the Business Unit Business Plans.

The primary method of tracking system performance is the formal quarterly review of metrics in the Senior Management Review, which assesses performance against the goals and indicators listed in the Corporate Strategic Plan. Results, available to all employees on ARDEC's internal Web site, are used to plan improvement. Key organizational metrics outlined in the Business Unit Business Plans are tracked in organizational one-on-one reviews.

The primary method of tracking system performance is the formal quarterly review of metrics in the Senior Management Review, which assesses performance against the goals and indicators listed in the Corporate Strategic Plan.

Program metrics—cost, schedule, performance, and other technical and programmatic issues—are tracked through Program Management Reviews (a customer process) and ARDEC's Top 10 process. At a lower level, Integrated Product Teams are empowered to manage product development cost, schedule, and performance.

Strategic planning outputs include a set of performance measures that align with ARDEC's strategic planning objectives and its systems approach. These measures are deployed to the four System Owners, who develop related goals that are further deployed throughout the organization. These System Owner goals become the framework for lower-level plans and execution.

Tobyhanna Army Depot Uses Awards Structure to Track Performance

Tobyhanna Army Depot uses the Army Performance Improvement Criteria awards structure to assess its Total Army Quality implementation journey. The APIC self-assessments form the basis for Tobyhanna's Army Communities of Excellence and President's Quality Award applications. The depot makes some improvements based on the Examiner Feedback Reports from these applications. The feedback reports are incorporated into the depot's strategic planning process: for instance, Areas for Improvement are converted to strategic planning actions and assigned to the appropriate Business Council for implementation. In August 1999, Tobyhanna was named as one of three Army Materiel Command nominees in the Army Communities of Excellence program and one of six Army nominees in the President's Quality Award program. Tobyhanna has submitted applications for both awards for the year 2000.

Communicating Corporate Direction

TACOM-ARDEC Communicates Corporate Direction at All Levels

TACOM-ARDEC communicates corporate direction at all levels, continuously and in numerous ways. Random Work Groups from throughout the workforce initiate the planning process; the Board of Directors and the Executive Counsel and its Action Plan owners continue the work. The Action Plan owners, System Owners, and others have Quality Management Boards that review and improve the Action Plans. Finally, the objectives and key support factors of the Corporate Strategic Plan are appropriately reflected in every employee's Total Army Personnel Evaluation System under annual expectations for accomplishment. Other techniques used to communicate the corporate direction are Corporate Objectives Standdown Hours, promotional storyboards posted throughout the command, town hall meetings, "Breakfasts with the Boss," and command newspaper articles.

CAA Communicates Direction Throughout the Year

The Center for Army Analysis uses a series of communication mechanisms to make its direction known throughout the year. The State of the Center Address lays out the course for the year, and the Center's Annual Report details the specific implementation of the course and documents performance in terms of preselected measures. This document is distributed to principal customers and other key organizations, and all interested persons normally have access to it.

A bulletin reports the Center's activities each day; a weekly bulletin reviews current and near-term activities, reported by key Center personnel. Each week Leadership Team Staff

Calls review and introduce specific projects and activities implementing the strategic plan; these, in turn, are discussed with each supervisor's personnel. Monthly Management Reviews assess both the previous month's program and the following month's program. Each quarter the Leadership Team conducts the Management Planning Conference to assess the Center's status and adjust planning directions.

Performance Projection

Strategy deployment also requires a two- to five-year projection of key measures and indicators of an organization's performance. This involves a comparison of projected performance with targets and goals, as well as with competitors and key benchmarks. The projection/comparison is intended to encourage organizations to improve their ability to understand and track dynamic, competitive performance factors. Through this tracking process, organizations should be better able to take into account their rates of improvement relative to past performance, competitors' performance, and their own goals. Projected performance might also include changes resulting from new mission opportunities, product and service innovations, or other strategic directions.

TACOM-ARDEC Projects Performance To Assure Future Viability

In managing performance at the corporate level, TACOM-ARDEC designs performance measures that take both a forward and a backward look at the relevant data. Historical trends and future projections are reviewed, along with the subject expertise gathered by management through direct communications with customers, suppliers, and the workforce.

TACOM-ARDEC will continue to maintain its high rate of customer satisfaction to position the command for a viable future. In addition to professionally executing customers' programs, ARDEC is carrying out several initiatives to remain a "preferred provider." These include regenerating the workforce through hiring and education; improving the physical plant, including R&D facilities, employee work stations, and the work environment; maturing cutting-edge technologies; and entering into meaningful, value-added public-private partnerships.


2

Category 3: Customer Focus

Customer focus is the approach an organization uses to determine the requirements, expectations, and preferences of customers and the marketplace and to build relationships with customers and learn whether they are satisfied. It means seeking to understand the voices of customers; it means enhancing relationships as a vital part of a strategy of listening and learning. Knowing how satisfied customers are provides crucial insight for understanding customers and the economic world they inhabit. Results and trends of this kind provide the most meaningful information not only on customers' views, but also on what they will do, in terms of repeat business and positive referrals.

Customers, in this sense, are the people the organization is in business to serve. They may be voluntary customers, who have alternatives but choose to use the organization's product or service, like people who make use of a post's recreational programs. They may be entitled customers, who have an automatic legal right to benefit from a program, like retirees who use the post exchange. They may even be compelled customers, when a program is mandated—as when people are required to have immunizations.

Army initiatives in customer focus address two aspects of the approach: knowing customers and the marketplace and—beyond that—building relationships and determining how well customers are satisfied.

Customer and Market Knowledge

Customer and market knowledge grows out of the way an organization determines current and emerging customer requirements and expectations. This information supports marketing, business development, and planning. In a rapidly changing competitive environment, many factors may affect customer preference, making it necessary to listen and learn continuously.

Listening and learning strategies must be closely linked to the organization's overall mission and business strategy. The organization will need to tailor its listening and learning to different customer groups, especially if it customizes its products and services. The listening and learning must be backed by a capable information system that can rapidly accumulate information about customers and make this information available where needed.

Customer and Market Knowledge: Success Stories of 1999

In 1999 organizations used a variety of listening and learning strategies to gain knowledge of customers and the marketplace. Strategies included developing performance measures jointly with customers; surveying customers for key requirements and level of satisfaction; close integration with key customers; and insightful analysis of customers' needs.

TACOM-ARDEC Adopts Strategies for "Listening To Learn"

To obtain customer and market knowledge, TACOM-ARDEC has adopted "listen and learn"

strategies based on a sophisticated information-gathering process. At the heart of this process are centralized quarterly customer surveys that incorporate metrics developed jointly with ARDEC customers. These surveys provide both quantitative and qualitative assessments of ARDEC's customer profiles, illustrating the level of satisfaction and key customer requirements for major projects and services. Key customer requirements include quality, timeliness, management involvement, fiscal discipline, and—new in 1999– teamwork.

At the heart of this process are centralized quarterly customer surveys that incorporate metrics developed jointly with ARDEC customers.

As a result of this "listening and learning," TACOM-ARDEC has implemented several follow-on strategies: assigning customer advocates and liaisons; establishing Integrated Product Teams; embedding employees in the customer's workforce; conducting formal reviews of customer programs; soliciting candid customer feedback; and benchmarking competitors' products and processes. These approaches are conducive to a continuous cycle of "listening and learning."

AMCOM Performs Multiple Missions for Most Customers

AMCOM supports over 90 major systems, programs, and organizations, most of which are located at Redstone Arsenal. For almost every customer, the command executes multiple missions. In the Multiple Launch Rocket System program, for instance—which AMCOM carries out in support of the Program Executive Officer, Tactical Missiles—AMCOM is responsible for research and development, production, maintenance, services, and foreign military sales, as well as providing support services and base support contracting for the organization as a Redstone Arsenal tenant.

Thus AMCOM must give major attention to customer knowledge and awareness of its customers' needs. Its Acquisition Center, for example, is organized around its customers, with each of eight contracting directorates focused on a specific customer, while the Business Management directorate supports the whole and presents a single face to the command and to external customers.

Some of AMCOM's teams are collocated with a customer. Where this occurs, AMCOM retains control and provides the teams with policy and technical support. This approach has proved very successful, and several customers have said that AMCOM is providing the best level of support they have ever had.

AMCOM lends support to the Multiple Launch Rocket System.

The focus extends to General Officer level. The AMCOM Commander or Deputy to the Commander meets with General Officers of the customers' offices, to give customers an opportunity, in a casual atmosphere, to talk freely about any problems they may have with AMCOM services or products. Issues identified in these meetings are tasked for resolution by AMCOM staff.

AMCOM has also created a Web-based customer hotline to allow any customer to raise an issue and select an AMCOM staff element to resolve it.

These programs are combined with regular

customer-oriented activities, such as the Commander's visits to the field commanders, and discussion of foreign military sales issues with security assistance and logistics assistance representatives, to capture the customer satisfaction picture and resolve all issues.

MEDDAC at Fort Hood Launches Customer Focus Initiatives

The U.S. Army Medical Department Activity (MEDDAC) at Fort Hood has established a number of initiatives that draw upon thoughtful observation of customer needs to improve customer service.

Breast Cancer Initiative Workgroup. The MEDDAC has established a Breast Cancer Initiative Workgroup to manage screening mammograms for its TRICARE Prime enrollees and to support patients with breast cancer. The workgroup includes representatives from General Surgery, Radiology, Family Practice, Pathology, Nursing, Managed Care, Women's Health Service, Obstetrics/Gynecology, and Medicine.

Individuals from the MEDDAC facilitate the local American Cancer Society/MEDDAC-sponsored breast cancer support group for the local hospitals. When the MEDDAC Commander recognized a need to improve the design of the mammography suite, he asked the women of the breast cancer support group to provide input into the remodeling plans. Individuals from the Surgery Clinic and Operational and Deployment Medicine work with the physicians to follow each woman who is diagnosed with breast cancer. Each woman is referred to a local support group—Reach to Recovery—and receives a copy of Dr. Susan Love's *The Breast Book*, pamphlets on breast cancer and psychosocial issues, and a CD-ROM. Prior to admission, patients are given instructions for their discharge after surgery and for prevention of lymphedema. During a woman's hospital stay, individuals from Physical Therapy teach range of motion exercises.

During Breast Cancer Awareness Month, the workgroup sets aside a day for walk-in clinical breast exams followed by mammogram referrals.

The MEDDAC's workgroup coordinates closely with its TRICARE partner, Foundation Health, which has a dedicated Oncology Coordinator who manages the care of oncology patients between facilities (including Brooke Army Medical Center, Scott and White Hospital and Clinic, Air Force medical centers, and local oncologists). One of the workgroup members facilitated the Breast Cancer Education unit of instruction for the Department of Defense Primary Care Managers Course.

Pioneering Disease Management Program. The Darnall Army Community Hospital has launched a model, known as Darnall Army Community Hospital—Asthma Information and Resources (DACH-AIR), that pioneers a disease management program for asthma patients. DACH-AIR is a multidisciplinary team that includes nurse practitioners, clinical pharmacologists, allergists, pulmonary disease specialists, pediatricians, family physicians, resource managers, and emergency medicine physicians. The patients included in the program range from the youngest "wee wheezer" to elderly retirees. The backbone of DACH-AIR is an extensive education program that incorporates computer-based learning and even video games. Besides teaching the patients the principles of asthma care, the education program culminates in the formulation of an action plan, so that patients or their parents know how to assess the severity of an attack and what to do early in the attack to prevent progression. This model program has many features of a scientific study, and its outcomes will be objectively measured. The outcomes to be assessed will include the frequency of asthma admissions, the number of hospital bed days

utilized for asthma exacerbation, and an objective quality of life survey measurement.

This program, very popular with patients and providers, is growing by quantum leaps and will make a real difference for the soldiers and families of III Corps.

Mother-Baby Unit. In June 1999, after conducting specialized staff training and developing unit standard operating procedures, the Fort Hood MEDDAC officially implemented a concept called the Mother-Baby Unit. This concept

Darnall Army Community Hospital serves Fort Hood, the largest armored military installation in the world. In a recent year Darnall supported more than 1,000,000 annual outpatient visits and 15,695 hospital admissions.

encompasses all high- and low-risk antepartum, postpartum, and Caesarean-section mothers and normal newborn infants.

In this model, one nurse provides total care to both the postpartum mother and the newborn infant. Once the mother and newborn are stable, they begin a complete rooming-in: the mother and infant are together 24 hours a day. This allows the mother to care for her infant, which provides an atmosphere for bonding between mother and infant. The Mother-Baby Unit concept provides an increase in the continuity of patient care, because the responsible nurse follows the progress of both mother and infant. This simplifies record keeping and allows the nurse to provide post-natal education as required to the mother.

To assess the success of the Mother-Baby Unit, each patient completes a patient satisfaction survey. The vast majority of patients surveyed stated that they enjoyed the Mother-Baby nursing experience.

More Beds for Obstetric Triage. The Triage Room at the Fort Hood MEDDAC's Labor and Delivery Unit contained only one bed—and the Unit was extremely busy, with a monthly delivery rate of approximately 245 infants and a high volume of outpatients (700-800 a month). Beds for assessing outpatients were limited too, and the Labor and Delivery staff felt they were not able to assess obstetric patients in a safe and timely manner. On many occasions, the Labor and Delivery waiting room was filled with obstetric patients waiting to be assessed for active labor. The waiting time varied from 30 minutes to 2 hours, and patients were not happy about it.

The staff organized a Process Action Team to form a plan to expand the number of Triage beds from one to three beds. This was done, and a time study over a three-month period indicates that the average waiting time is now 14 minutes.

Employee Breast Feeding Room. An informal MEDDAC survey asked active duty and civilian women what obstacles hindered the continuation of breast-feeding their infants once they returned to work. Many of the women indicated that it was extremely difficult to find a private, clean area to express or pump their breast milk. In many cases, women had to retreat to restroom stalls or go to their cars during lunch breaks.

As a result, MEDDAC established an Employee Breast Feeding Room on the fourth floor of the hospital. The Breast Feeding Room enables both military and civilian employees to continue

to pump their breast milk or breast-feed their infants in a private, secure, and sanitized area. This MEDDAC Mother Friendly Hospital Initiative is in compliance with the breast feeding promotion program established under Hospital Bill 359, Federal Child Nutrition Act of 1996.

All employees will receive information about this program at an annual mandatory training session and during hospital orientation. Participants in this program will sign a contract that explains the rules and regulations. They will have access to electrical breast pumps, educational material on breast-feeding, and—most importantly—a clean, private area to breast-feed or pump their breast milk.

Scheduled Postoperative Followup for Caesarean-Section Patients. The Fort Hood MEDDAC was discharging postoperative Caesarean-section patients from the postpartum unit without scheduling a followup obstetrical/ gynecological examination required two days later. Although patients being discharged were told to call the obstetrical/ gynecological clinic, many patients never called, and the clinic was not alerted that certain postoperative Caesarean-section patients required a followup appointment. So the clinic was not allocating specific appointment times for these patients, and some women were not receiving the examination.

The Fort Hood MEDDAC created a process action team to ensure the appropriate followup care was provided. All postoperative Caesarean-section patients now receive appointments before they leave the postpartum unit.

After seven months of monitoring the new procedure, the MEDDAC noted a major increase in continuity of patient care. One hundred percent of patients requiring the two-day followup scheduled the appointment prior to discharge. A log maintained by the Obstetrical/ Gynecological Clinic tracked and monitored whether the appointment was kept, reflecting a 90-100 percent compliance over seven months.

TRICARE Prime-like Access for College Students. Realizing that the college-student children of individuals enrolled in TRICARE Prime needed similar coverage when they were home, on break, or visiting the Fort Hood area, the MEDDAC established a category of eligibility to provide those students with local Prime-like access. This eligibility is local only; it does not continue into the TRICARE network in cases where care cannot be provided within the MEDDAC facility. Eligibility for this health care can continue until the student is 23 years old.

TRICARE "One-Stop Shop." Before the creation of the MEDDAC-Fort Hood TRICARE Service Center, patients had to go to several buildings for health care information. To improve customer service and work flow, the MEDDAC moved its Managed Care Division's Health Benefits Advisors and Health Care Assistants to the TRICARE Service Center and added staff members to assist with authorizing eligibility for care and assisting numerous walk-in patients.

Through these coordinated efforts, a "one-stop shop" was created. The staff efficiently assists the large walk-in population and individuals who are inprocessing for authorized care. The TRICARE Service Center has a large waiting area with a television and a videocassette recorder, so customers can view TRICARE educational films or television programming like CNN. Improved customer service, better workflow, and greater customer satisfaction

have been provided at minimal cost for the Center's beneficiaries.

Customer Relationships and Satisfaction

Building customer relationships and determining customer satisfaction are essential to success in retaining current customers, acquiring new customers, and developing new opportunities. Two distinct but closely related strategies are involved: maintaining close relationships with customers and learning how well the product or service meets their needs.

Customer Relationships

Building customer relationships involves several approaches. An organization must make it easy for customers and potential customers to gain information or assistance and to comment or complain. It must collect, analyze, and learn from the comments and complaints, tying the information to key business processes, determining implications, and setting priorities for improvement. It must maintain awareness of key differences among different market segments and customer groups. And it must keep its approaches to all aspects of customer relationships current with changing needs and directions.

Customer Relationships: Success Stories of 1999

Using customer input to prioritize improvements and putting structures into place that build long-term business relations are among the many initiatives used to enhance the focus on customer relations.

TACOM-ARDEC Sets Up a Structure for Ensuring Customer Group Satisfaction

TACOM-ARDEC's Customer Advocate and Liaison Offices are responsible for ensuring satisfaction of the major customer groups. The advocate and liaison offices act as the first-line "eyes and ears" for the customers' rapidly changing needs; their mandate is to defuse small issues before irritants can escalate into complaints or areas of chronic customer dissatisfaction. The Customer Advocate uses a cross-functional Quality Management Board to oversee the corporate customer process and conducts a quarterly survey, using standardized rating elements and criteria.

Aberdeen Places Executive Agents at Key Customer Locations

To facilitate cooperation and customer satisfaction, the Aberdeen Test Center designates employees or representatives as Executive Agents and places them at key customer locations. These Executive Agents are fully focused on meeting the needs of the center's key customers. Executive Agents are located at the U.S. Army Tank-automotive and Armament Command; the U.S. Army Armament, Research, Development, and Engineering Center; Joint Forces Command; U.S. Army Simulation Train-

Established in 1921, the William Beaumont Army Medical Center serves active duty military personnel, family members, and other beneficiaries in El Paso and the surrounding areas. The Adult Primary Care Clinic is the busiest clinic at William Beaumont Army Medical Center, averaging 4000-5000 patient encounters per month.

Regional Range Cooperative; and Headquarters, Developmental Test Command.

The questionnaire addresses four main areas: technical adequacy, timeliness, cost, and overall performance.

Aberdeen Uses Customer Response to Monitor Performance

The Aberdeen Test Center gets 70 percent of the dollars required for command operations from its customers. Since customers decide where they will bring their testing for execution, the command must have a keen customer focus.

To determine customer satisfaction with ATC test performance, the command mails a questionnaire to each customer for whom a test is completed. The questionnaire addresses four main areas: technical adequacy, timeliness, cost, and overall performance.

Feedback is closely monitored. If poor ratings are received, the command responds expeditiously to the test customer with actions taken or planned to correct shortcomings. The questionnaire process has been an effective tool in monitoring command performance and providing test customers with an avenue for evaluating that performance.

William Beaumont Army Medical Center at Fort Bliss Improves Access to Care

The William Beaumont Army Medical Center at Fort Bliss has consolidated two clinics to create a Prime Adult Medical Clinic, increasing access for both acute and urgent care.

Formed in July 1999 from the General Outpatient Clinic and the Internal Medicine Clinic, the new clinic increases access for both TRICARE Prime and active duty beneficiaries. It also increases consistency in health care delivery by assigning beneficiaries to teams of multidisciplinary health care providers.

Beneficiaries of the new clinic will receive a health risk survey to identify populations with specific health care needs. Using the survey information, providers can develop strategies to promote wellness or identify patients with unique needs and refer them to the case manager or health care coordinator to improve the utilization of health care resources. The changes will also make it easier for the clinic to support clinical pathways based on levels of care.

Landstuhl Implements Pool Therapy for Patients with Lower Extremity, Back, Shoulder, or Neck Injuries

Landstuhl Regional Medical Center (LRMC) established a Process Improvement Team to reduce the recovery time for patients with injuries to their lower extremities, backs, shoulders, or necks.

Many patients were re-injuring themselves by trying to exercise "too soon." The team's goal was to provide patients with pool therapy, a treatment modality that allows patients to rest their injuries and stay cardiovascularly fit. The team was able to enter into a contract to use the post swimming pool located near LRMC.

The follow-up data indicates that 74.4 percent of the patients with lower extremity injuries improved their functional activity level after participating in the Aquatic Rehabilitation Program. With this went a 61 percent improvement in a patient's pain level, after an average of 12 visits. Patients with back, shoulder, or neck injuries experienced a 55 percent improvement in pain and functional activity levels.

To expand the program, Landstuhl will generate funds for pool use and train additional Physical Therapy staff in aquatic therapy.

MEDDAC at Fort Hood Turns Underused Space into Better Holding Areas for Adults and Children

The MEDDAC Operating Room staff at Fort Hood converted underutilized space to better holding areas for adult and pediatric surgical patients.

The original Operating Room holding space for adult patients was only 10 feet by 19 feet. But Operating Room staff realized that they could convert unused Post-Anesthesia Care Unit space to improve the Operating Room holding area. They converted a four-bed section of the unused patient care space—28 by 19 feet—into a pre-operative holding space for adult surgical patients.

This larger area allows for adequate spacing between patients, facilitating auditory and visual patient privacy. Patient curtains were installed to increase the capacity from four beds to seven beds. Monitors mounted on wall units in the area, which were originally intended for the care of post-anesthesia patients, are now being used to monitor patients before surgery; patients can now have regional anesthetic blocks placed before going into the Operating Room. Anesthesia providers can initiate these blocks while the Operating Room staff is setting up for the surgical procedure. This greatly increases the efficiency of the entire surgical process.

The original pre-operative holding area in the Operating Room suite is now a pediatric patient holding area. Child surgical patients now have a waiting area designed to support their unique needs—chairs for parents, small table and chairs for children, open space for movement while waiting, books, crayons, and toys. The space also provides the flexibility for health care providers to use individualized patient-focused strategies to provide care to pediatric patients.

MEDDAC at Fort Hood Makes Administrative Changes for Patients' Convenience

The Fort Hood Medical Activity has made two administrative changes for the convenience of its patients. One change affects families with special medical needs; the other provides continuity of care for all families.

When military families arrive at Fort Hood, they enroll at the TRICARE Prime Service Center. But beneficiaries with special medical needs require additional help to access the care they require. To give them better service, the MEDDAC's Health Care Assistants from the Beneficiary Services Branch, Managed Care Division, personally assist by providing information or booking appointments. They are now located at the TRICARE Service Center, where families already have to come, instead of in a different building as they were before.

To provide continuity of care for all beneficiaries, the MEDDAC created primary care manager teams. All family members enrolled to the same primary care manager are assigned to the same team. Assignment to teams began in the Bennett Health Clinic and soon included the Darnall Army Community Hospital Family Care Clinic, the Killeen Family Care Clinic, and the Monroe Health Clinic. By the end of April 1999 there were 40,729 team assignments. Family members enrolling at the TRICARE Service Center are directed to the health care assistants, who explain the team concept and assign the patients to their teams. Primary care manager teams have promoted beneficiary

satisfaction and made it easier to improve continuity of care.

Customer Satisfaction Determination

Determining how well customers are satisfied involves getting information the organization can act on—information that reflects whether customers will return and whether they will speak well of the organization's products or services. Methods of gaining such information may differ from one customer group to another. But getting prompt and actionable feedback is not enough: an organization must use the information to eliminate the causes of complaints, set priorities for improving products and services, and evaluate customer satisfaction relative to competitors and alternative offerings.

Customer Satisfaction Determination: Success Stories of 1999

Discovering customer needs and responding to those needs with improvements were characteristics of several initiatives in 1999.

William Beaumont Army Medical Center Installs a Robot in Outpatient Pharmacy

The William Beaumont Army Medical Center Pharmacy Service at Fort Bliss, Texas, recently installed a robotic prescription filler in the newly renovated outpatient pharmacy.

Before the renovation, the pharmacy had received many complaints about the time required to get prescriptions filled. The new pharmacy offers more filling stations and service windows for patients. With the addition of the robotic filler, waiting times for prescriptions have decreased by 55-60 percent. In addition, another refill prescription section opened in the main hospital, allowing patients a choice of where to have their refills processed.

With the addition of the robotic filler, waiting times for prescriptions have decreased by 55-60 percent.

These innovations have made customers much more satisfied with the pharmacy service and decreased the number of patient complaints.

19th TAACOM Improves Communication of Employment Information

The 19th Theater Army Area Command (TAACOM), a major subordinate command of the Eighth Army in Korea, has taken steps to improve the availability of employment information for family members.

Employment on post is of high interest to family members of soldiers stationed in Korea. Employment information for Area III—the region south of Seoul, from Suwon southward to Taejon—was not centralized, so customers were dissatisfied and complaints were numerous.

The director of the Area III-Civilian Personnel Advisory Center reorganized the employment system structure and successfully coordinated the consolidation of all employment centers within Area III. Customer satisfaction has significantly increased.

Fort Benning Creates a One-Stop Shop for Maintenance and Repair

Fort Benning's Directorate of Public Works recently created Main Post Shop #3, a "one-stop shop" dedicated to serving the needs of 15 organizations housed in approximately 90 buildings in the 2700/2800 block area of the main post.

The standard procedure in the past was that customers had to call in multiple work orders and interface with multiple shops. To create

Main Post Shop #3, one electrician, five maintenance mechanics, and one supervisor were transferred from other locations. These multidisciplinary craftsmen perform repair and maintenance of all types, excluding only heating/air conditioning and roof leaks. The shop supervisor coordinates all work that is done in the 2700/2800 area, whether it is by his shop's personnel, other Public Works shops, or contractors.

This area-dedicated shop concept has a number of benefits. It is in close proximity to all customers; this enables quicker shop response to customer needs and facilitates customer access to and interaction with shop personnel. Customers and shop personnel develop good working relationships and know each other by name.

Shop personnel obtain specific knowledge of their customers' operations, problems, and requirements, so the shop can better support customers' missions. Each maintenance worker has his own specifically assigned buildings for which he is responsible. Workers develop a commitment and loyalty to their area and customers. They take greater pride in their work.

Each maintenance worker has his own specifically assigned buildings for which he is responsible. Workers develop a commitment and loyalty to their area and customers. They take greater pride in their work.

Area shop personnel train and provide technical assistance to unit personnel for routine preventive maintenance work. Timely maintenance of such routine matters greatly reduces problems and breakdowns and ultimately decreases expenditures in man-hours and materials. Shop craftsmen are able to concentrate on the more complex and difficult work. Soldiers in customers' troop units, once trained by shop personnel, can also take advantage of shop power tools to complete self-help projects to improve their quality of life. Shop craftsmen are always available to supervise and assist soldiers. The convenient location of the shop enables soldiers to walk to and from the shop as they work on their projects.

Customer satisfaction is measured by customers' responses on feedback cards, given to every customer at the completion of each service order, and by unsolicited customer commendations. According to feedback cards, Main Post Shop #3 has maintained a 95 percent approval rating since its creation. All personnel in the shop have received the Commander's Award for Civilian Service, and individuals in the shop have received letters of appreciation and three Excellence Awards from different customers.

Category 4: Information and Analysis

Information and analysis are the means of measuring an organization's performance and evaluating performance data. Together, they provide the basis for managing the organization and achieving improvements in performance and competitiveness. Collecting and analyzing the right information is critical to the alignment of an organization's operations with its strategic direction. From this information and analysis, the organization determines where it is going, whether this direction accords with its strategic plan, and how it compares with providers of similar products or services.

Information and analysis can be considered under two aspects: measurement of organizational performance and analysis of organizational performance.

Measurement of Organizational Performance

The measurement of organizational performance involves the selection, management, and use of data and information. Setting up a system for this requires managers to select and use the most pertinent measures and indicators for tracking daily operations and to identify and integrate measures for monitoring overall organizational effectiveness. Data and information reliability is critical to success. The organization must also select and use competitive comparisons and benchmarking information to help drive performance improvement. Further, the measurement system must be adaptable enough to remain current when mission needs change.

Measurement of Organizational Performance: Success Stories of 1999

Success stories involving measurement of organizational performance included a broad spectrum of measurement issues, from the creation of databases for managing information, through quantifying performance measurement, to inventing new ways to track and present performance data.

TRADOC Base Operations Support Creates Database for "Information Dominance"

The Deputy Chief of Staff for Base Operations Support (DCSBOS) at Headquarters, Training and Doctrine Command (TRADOC) has developed a Corporate Database for quick and easy access to the multiple databases available for decision support. The objective is to further a DCSBOS strategic goal: to "Achieve Information Dominance - The Right Information at the Right Time."

Formerly, there was no structured "information library" for integrating, viewing, and analyzing current or historical data from various sources. The various DCSBOS functional information systems managed, stored, and summarized data in many kinds of reports, with different naming conventions and unique file formats. DCSBOS developed the Corporate Database to access any databases regardless of type. Using off-the-shelf technology, the Corporate Database (CDB) makes information available to other users through system links. Program managers "own" and maintain the functional data. Much of the information used in decision making is spatial data or directly related attribute data. The Corporate Database integrates key data elements from BASOPS systems and applies current and future spatial analysis tools to

overlay program data to assess location, content, proximity, intersection, and time. The database also uses geo-based technology to integrate geographic, tabular, and other information types in a user-friendly interface. It provides support to TRADOC installations, establishes a "corporate memory," and reduces decision making time.

The Corporate Database project dispenses geo-based information technology for decision support through all DCSBOS organizations. The database contains digital maps of each TRADOC installation, with graphical overlays of information needed for defining data such as Casualty Area Command responsibilities, showing water lines and fiber optic lines, and displaying the Installations Status Report.

DCSBOS developed the Corporate Database to access any databases regardless of type.

The database is unique, since it incorporates the entire range of DCSBOS functional business processes. The baseline was developed utilizing the ARCVIEW Geographical Information System and Visual Basic software. The geographical information capability provides for planning and decision making across many different functional areas; previously, data would have been restricted to specific functional channels—engineering, information management, or environmental—and required expensive computer-aided design technology and hardware. The Corporate Database's geographical information technology runs on a laptop, local area networks, and the Internet.

User interfaces for the geographical information are in Visual Basic. Along with Crystal Info and Crystal Reports software, Visual Basic makes it easy for the user to create canned queries. This flexibility and the instant access to multiple areas of data provide answers to questions that arise daily—questions that would otherwise require installations to provide a response. When the second phase of the system is complete, the Corporate Database will also be able to process business rules and do "what ifs" on the fly, using a software package called Business Rule Studio.

The Geographical Information System capability provides for planning and decision making across many different functional areas; previously, data would have been restricted to specific functional channels.

The Corporate Database has been so favorably received by Army leadership that it may soon extend beyond TRADOC. It has been briefed to the Commanding General of TRADOC, the Under Secretary of the Army for Installations and Environment, the Army Chief of Staff for Installation Management, and the Deputy Chief of Staff for Installation Management at U.S. Army Forces Command (FORSCOM). FORSCOM has provided TRADOC with funds to develop a prototype baseline for FORSCOM, using data and techniques from the Corporate Database as well as data provided by FORSCOM.

AMCOM Puts Its Depot Monthly Reporting System Online

AMCOM's Strategic Planning Office and its Corporate Information Center and Integrated Materiel Management Center have adapted computer code received from the Industrial Operations Command to establish an online Depot Monthly Review.

This system was designed to make data designated as critical to depot operations available in near-real time. It also allows the depots to input monthly data that builds graphic depictions automatically. Metrics changes can now be made in seconds, and the Review can now be staffed throughout AMCOM electronically—

eliminating multitudinous photocopies and the need to transport them quickly to many buildings. This in itself speeds up the process, giving the depots more time to input their data. It also allows for more expeditious viewing by appropriate people.

This will help AMCOM prepare documentation for the President's Quality Award Program and identify gaps in category criteria documentation.

The Depot Monthly Review lets the depots use the data for their internal reporting. Eventually, this system will automatically feed applicable metrics directly into the Command Performance Review System, which is the automated vehicle for Army Materiel Command review and analysis. This too will avoid duplication of effort.

The new system also assists in determining the appropriate Baldrige criteria for each metric. This will help AMCOM prepare documentation for the President's Quality Award Program and identify gaps in category criteria documentation.

CERDEC Applies Quantifiable Performance Measures to Technical and Management Objectives

The Communications-Electronics Command Research, Development, and Engineering Center (CERDEC) has developed a performance measurement system to assess the accomplishment of its goals and to provide a framework for accountability and decision making.

Each year, CERDEC senior managers collaborate to develop strategic and performance goals and objectives, consistent with those of the Army and the Defense Department, and identify relevant, quantifiable performance measures for each technical and management objective. The end result is reviewed and approved by the Senior Review Board, the Technical Director, and the Technology Area and Sub-area Champions. (CERDEC has four technology areas: Sensors, Seamless Communications, Command and Control, and Information Warfare.) Then it is published as the CERDEC Performance Plan.

The plan's performance goals and metrics are incorporated into the Champions' and Directors' annual performance standards. Extensive coordination with all levels of management and the work force ensures a management tool that establishes CERDEC's major goals and specific metrics to assess organizational performance and successes. The plan has widespread distribution and can be accessed on the Knowledge Center Internet site.

A working group, consisting of staff personnel from each directorate, tracks the technical and management metrics on a quarterly basis to facilitate implementation of the performance plan.

Each year, CERDEC senior managers collaborate to develop strategic and performance goals and objectives, consistent with those of the Army and the Defense Department, and identify relevant, quantifiable performance measures for each technical and management objective.

Each quarter, the sub-area champions brief their Technology Area Champion on the status

of their programs. The Technology Area Champions brief the Technical Director twice a year on the status of their goals and metrics.

TACOM-ARDEC Takes a Systems Approach to Performance Measurement

The Tank-automotive and Armaments Command-Armament, Research, Development, and Engineering Center (TACOM-ARDEC) measures organizational performance using the Systems Measurement Review, a process that replaces standard review and analysis with a systems approach. The strengths of the Systems Measurement Review include top leadership review of integrated performance; integrated systems; linkage to strategic plans; peer review; benchmarking from industry and government; and a forum for overall customer feedback. The review is paperless, available to all participants through the Internet.

In the review, System Owners design performance measures and present them to top management and each other. They strive for cross-functional integration; focus on the customer; track process improvement; facilitate corporate decision making; and motivate the organizational drive towards excellence. Trained in measurement methodologies and Baldrige criteria, the Systems Measurement Review Team updates the TACOM-ARDEC Measurement Plan, which is the Center's systematic way of planning, evaluating, and improving quality measurement. Driven by the needs of the Systems Owners and customers, the review includes data on operational performance, financial performance, markets, human resources, products, and customers. The Systems Measurement Review ensures consistency and validity of measures and gives leaders full access to quality data and performance trends.

DENCOM Tracks Performance Through Web-Based Reporting System

The U.S. Army Dental Command (DENCOM) tracks organizational performance through the Corporate Dental Application (CDA), an innovative reporting system that utilizes cutting-edge Web-based data warehousing technologies. The system is designed to streamline the data collection process, enhance data quality, and improve the timeliness of data collection, packaging, and analysis. Its improved functionality will give senior leaders and managers the opportunity to evaluate key corporate and local performance measures almost in real time.

In the past year, DENCOM completed Web-based application programming for over 25 corporate-level reports, developed an innovative leasing arrangement for 746 end user devices and five super servers, and deployed the hardware to 249 sites around the world. Currently CDA is undergoing worldwide testing and refinement. In addition, new Web-based report programs are being introduced, and work processes are being redesigned to insure the most efficient handling and analysis of corporate data. Senior leaders believe CDA will quickly become the preferred method for corporate information reporting.

The [Corporate Dental Application] system is designed to streamline the data collection process, enhance data quality, and improve the timeliness of data collection, packaging, and analysis.

Aberdeen Test Center's VISION Presents Data in Near-Real Time

The Aberdeen Test Center's Versatile Information Systems Integrated Online Nationwide (VISION) is an overarching initiative to provide "concept to combat" acquisition of data on all aspects of Defense Department inventory

performance. Data is archived in a distributed database, which looks like a single database to the user and can be accessed easily through a Web browser. A major feature of VISION is that data acquisition modules are seamlessly integrated into the end item itself, to facilitate data acquisition without impeding operation of the item. Data is transmitted and received through landline, line-of-sight telemetry, and satellite links. Since data from the embedded systems can be received in near-real time from any location in the world, VISION also has significance for logistics management.

LRMC Improves Documentation of Organizational Performance

The Landstuhl Regional Medical Center (LRMC) is the epicenter of peacetime healthcare in Europe—a major hospital and treatment center, providing for over 60,000 people within its own region and more than 250,000 more as a referral center for the European Theater. As such, it continues to upgrade its facilities and equipment to meet the needs of post-Cold War Europe.

Recently, as part of its ongoing effort to document its organizational performance, LRMC organized several process pathway teams to improve awareness and accountability in several areas. One team set out to plan for, support, and coordinate patient and family education that would be collaborative and interdisciplinary. Two other teams sought ways to strengthen the authentication of verbal orders within medical records and improve the documentation of patient restraints.

The teams' efforts brought about several changes. LRMC developed and implemented a multidisciplinary patient education form, to be used by the center and its six outlying health clinics. The clinics were trained to use the form—two were completely trained, and the rest were in process. LRMC also made sure the form was being used, monitoring compliance continuously.

LRMC also educated its staff on the regulatory requirement to document and authenticate verbal orders on patient records. To document staff compliance with this safeguard, the Center developed a counter-signature stamp for the medical staff to sign and date. Another new item of documentation was a checklist on restraint training, to be included in patients' folders.

Analysis of Organizational Performance

The analysis of organizational performance provides a basis for assessing overall organizational health and helps guide an organization's process management toward the achievement of key business and mission results and strategic objectives. Analysis supplies senior leaders with information needed for ongoing operations, for periodic review, and for organizational planning. Drawing upon many types of data—customer-related, financial and market, mission requirements, operational, competitive, and more—it provides trends, projections, comparisons, and cause-effect correlation to support performance reviews and the setting of priorities for resource use.

Analysis of Organizational Performance: Success Stories of 1999

Success stories involving the analysis of organizational performance included command-wide efforts to analyze performance for planning, mid-size undertakings like developing models of organizational activity, and smaller but significant projects that affected a single element of the mission.

TRADOC's Base Operations Assessment Team Assists Garrison Commanders

TRADOC's Base Operations Assessment Team (BAT) exists to help garrison commanders, the primary customers of the Deputy Chief of Staff

for Base Operations Support. Established in 1996 by TRADOC's Mission Support Lab, the team integrates staff assistance and compliance visits. Its focus is on solving problems on the spot, enhancing customer service, and making systematic improvements via Total Army Quality principles and reinvention flexibility.

The formal objectives of the BAT are to evaluate program management, satisfy compliance requirements, benchmark best practices, and validate conditions and performance measurements. The team consists of 25-28 military and civilian experts in various functional areas, who spend a week at each TRADOC installation on a 3-year timetable. As team members review the operations of the garrison, they look for evidence of a systematic approach to performance. Strengths, best practices, areas for improvement, and major performance gaps are identified in each of the seven APIC categories and briefed to the garrison commander. Promising practices are benchmarked and shared with all TRADOC garrisons.

It familiarizes garrison leadership with strategic planning and benchmarking metrics and provides a roadmap for enhancing organization performance.

The BAT conserves resources by combining various compliance and staff assistance visits into a one-time assessment. It familiarizes garrison leadership with strategic planning and benchmarking metrics and provides a roadmap for enhancing organization performance. Incorporation of BAT input into garrison strategic plans has resulted in reduced costs, cost avoidance, greater efficiencies, and higher quality at TRADOC installations.

TACOM-ARDEC's Knowledge Base Supports Information Sharing

TACOM-ARDEC's Knowledge Base is an archived, business-related information storage and retrieval system, in a Web-based framework that facilitates rapid learning and sharing throughout the organization. The Systems Measurement Review team maintains the Knowledge Base as a coherent automated method of sharing lessons learned—organizational, process, and product performance and the findings of Integrated Product Teams and Process Action Teams across the entire enterprise.

The Knowledge Base takes full advantage of a wide range of resources: data-warehoused corporate information, Web-accessible applications, high-bandwidth data networks, standardized desktop configurations, organizational file servers, and carefully integrated off-the-shelf technology. The deployment of a highly useful internal Web resulted in Knowledge Base's exponential growth to support most aspects of business.

TACOM-ARDEC Benchmarks To Make Products "Best in the World"

TACOM-ARDEC believes in benchmarking: a systematic, continuous comparison of industry "best practices" to achieve improved performance. This strategic and analytic process continuously measures an organization's products, services, and practices against those of a recognized leader in the area being studied.

Thus TACOM-ARDEC has a Benchmarking Advocate, a Benchmarking Policy, and a

…TACOM-ARDEC utilizes a Defense Department network of foreign intelligence product information collection and analysis. This allows the capability to benchmark products against friend and foe.

Benchmarking Deskguide. The Center maintains membership in outside benchmarking resources

such as the American Productivity and Quality Center's International Benchmarking Clearinghouse and the Benchmarking Exchange. These resources provide technical support to TACOM-ARDEC benchmarking teams.

TACOM-ARDEC also has benchmarked against the Tank-automotive Research, Development, and Engineering Center's virtual university and against outside industries, including the National Traffic Safety Board, Emergency Response Teams, Talley Industries, Nabisco, and Lucent Technologies. Within the nation's munitions industry, TACOM-ARDEC partners with Edgewood R&D Center, Tobyhanna Army Depot, Missile Command, and the Air Force Materiel Command. On a worldwide basis, TACOM-ARDEC utilizes a Defense Department network of foreign intelligence product information collection and analysis. This provides the capability to benchmark products against friend and foe. This analysis of foreign warfighting materiel is the method TACOM-ARDEC uses to guarantee to customers and industry partners that the equipment they design and field will be the best in the world.

TRADOC BASOPS Model Aids in Mission Budgeting

The Resource Management Directorate of TRADOC's Base Operations Support (BASOPS) has developed a model prototype to help distribute funding equitably to TRADOC installations. The model uses a combination of historical data, workload drivers, and installation factors to compute required funding levels for 32 BASOPS functions.

Since BASOPS funding typically falls short, the model goes a step further. Business rules for each function are used to recommend a budget amount that will allow mission accomplishment.

The command is redesigning the budget process to take full advantage of the strengths of the model. Ultimately, budgeting for the installations—or for any command project—will be based entirely on a known, defendable, and quantifiable set of rules and relationships.

Ultimately, budgeting for the installations—or for any command project—will be based entirely on a known, defendable, and quantifiable set of rules and relationships.

The model is now in transition from prototype to a fully functional tool. BASOPS will use it in the fiscal year 2001 budget build. Forces Command and U.S. Army Reserve Command have expressed interest in adopting the model for use in their budget processes.

INSCOM Enhances Architecture Development for Intelligence Planners

The Army Intelligence and Security Command (INSCOM) now has a Web-enabled database of information management and information technology data for Army Intelligence planners, programmers, budgeters, and architects.

Before the development of the Army Systems Integration Database (ASID), Intelligence planning, programming, and budgeting were based on outdated architectures and site transition plans, because the development methodology required the time-consuming manual development of PowerPoint graphical charts. New architectures were produced only every five years. Now, automation has reduced architecture production time by 40 percent. Software tools—NetViz and Microsoft SQL—now link the graphics to the data. These tools are used for graphics interface, data storage, data query, and Web development. As data is updated in ASID, the graphics are updated automatically, allowing for dynamic updates of architectures. This enables data and systems architecture to remain current.

In the past three months, ASID has eliminated three external data calls to the field, saving enormous amounts of work time. The use of

Web features imbedded in the technologies has significantly reduced Temporary Duty costs. Finally, with the ability to produce architectures upon request instead of every five years, a unit's requirements and issues can be easily understood and rapidly resolved.

CERDEC's NVESD Uses Analytical Process To Track Performance

CERDEC's Night Vision and Electronic Sensors Directorate (NVESD) uses a process outlined in the Government Performance and Results Act (GPRA) to analyze its operations.

The GPRA system identifies goals and objectives to define an organization's vision and direction. Through the use of identifiable and quantitative metrics, the system also tracks how well the organization is accomplishing its mission, using information gathered on both technical and management aspects of an organization.

At NVESD, the technical side of this analysis consists of the critical areas of Electro-Optics, Countermine, and Advanced Tactical Radar/ Sensor Fusion. The management side consists of the critical areas of Leadership, Customer Focus, Human Resources, and Quality. Throughout the process, information—including customer surveys and feedback—is gathered and analyzed to increase organizational performance. Through information and analysis using the GPRA system, CERDEC's NVESD provides a strong commitment to strategic planning and performance measurement.

Fort Drum DENTAC Uses Tailored Software To Forecast Civilian Pay and Benefits

The Fort Drum U.S. Army Dental Activity (DENTAC) is using a special software package called Budget Builder to improve management in several key business areas. By partnering with the San Antonio Department of Finance and Accounting Services (DFAS), the Fort Drum DENTAC tailored the Budget Builder program to its corporate requirements. The result has been a direct interface with DFAS for timely and accurate calculation of civilian pay and benefits data. Analysis of the data is invaluable in preparing the DENTAC budget, budget forecast and reconciliation, and business performance reviews. Other DENTACs and non-Army Medical Department agencies have recognized the Fort Drum DENTAC's success with this initiative and are currently introducing this data collecting software technology into their organizations.

98th Area Support Group Public Works Develops Activity Based Costing Models

The 98th Area Support Group (ASG) has developed Activity Based Costing models for its Department of Public Works, starting with the 235th Base Support Battalion. A resource model, an activity model, and a cost object model were completed for the 235th, and a preliminary activity model was drafted for the Department of Public Works itself. Lessons learned from this process will guide the organization in developing activity models for the department's three other base support battalions.

The model will help line managers better understand the cost of providing specific services by giving them the information in a useable format—telling them, for instance, how much it actually costs to fix the plumbing, rather than discussing the total cost of salaries or travel. This will help the Department of Public Works identify and improve work processes and benchmark against military and private organizations.

Aberdeen Test Center Has Test Reports Reviewed To Assure Quality Product

Aberdeen Test Center initiated a process by which all formal reports are reviewed by the parent command Quality Assurance Team to insure that the customer receives a quality product. The review focuses on analyses that were well performed and on areas where improvements are required. This independent

review provides the customer with exceptional results, while instilling in command test directors the requisite skills to produce quality results.

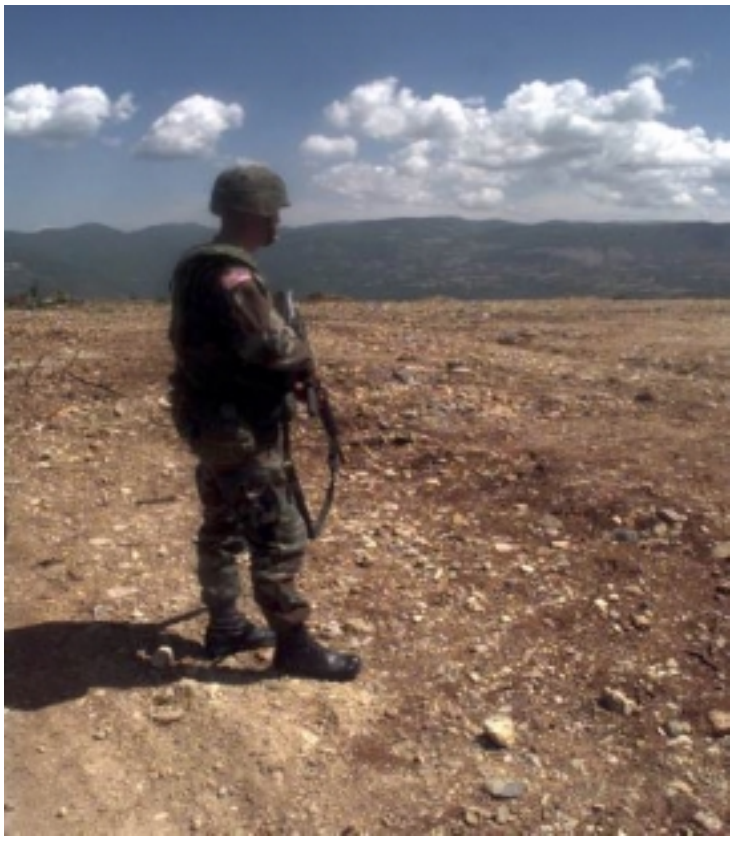
AMCOM Strategic Planning Office Performs Organizational Self-Assessment

A year and a half after AMCOM was established, its Strategic Planning Office conducted a survey of the workforce to capture their perception of how AMCOM was operating as a command The survey was electronically administered over the AMCOM Intranet to a randomly selected representative sample.

Survey results were posted to the AMCOM Intranet Web site. Analysis revealed that the workforce rated the command highest in "The Job" category. In response, the senior organizational directors developed action plans to address "Communication" and "Recognition" at AMCOM. These action plans scheduled specific actions to address the survey categories, complete with persons in charge and milestone dates. These action plans were also posted on the Web site.

The Command Action Plan addressed Communication by seeking to improve first-line supervisor communication, performing a needs assessment of supervisors' communication skills and setting up a workshop for them; by increasing employees' awareness of their own communication responsibilities; and by continuing Commander's Town Halls. Recognition was addressed by encouraging the Commander to "manage by walking around" the Arsenal, urging Executive Steering Committee members to study recognition policies in their area, and developing a Recognition Policy.

AMCOM's primary organizational elements have agreed to use Consideration Of Others training, town halls, "management by walking around," and newsletters to improve both communication and recognition. The full text of the action plans was posted on the Web site.



Category 5: Human Resource Focus

Human resource focus is the approach an organization uses to help employees develop and utilize their full potential, aligned with the organization's objectives. It includes the organization's efforts to build and maintain a work environment and an employee support climate favorable to performance excellence, full participation, and personal and organizational growth.

Human resource focus has three broad aspects: work systems; employee education, training, and development; and employee well-being and satisfaction.

Work Systems

Work systems are the framework the organization sets up to align its people with what needs to be done. It involves work and job design: how work is organized to let employees exercise discretion and decision making, which should result in high performance. It includes recruiting and hiring employees who will meet the organization's expectations. Also included are the systems that encourage and motivate employees; compensate, recognize, and reward them; and ensure effective communication and cooperation, all in support of high performance and employee well-being and loyalty. The organization's work systems should encourage employees to contribute effectively and at their highest level, foster individual and organizational learning, and facilitate adaptation to change.

Work Systems: Success Stories of 1999

Work system successes of 1999 involved such actions as designing the work or job, redesigning the personnel system itself to attract more people, recruiting in new ways, and rewarding the achievers.

Designing the Work

Designing the work itself could take many forms: structuring the work for the development of secondary skills and greater initiative; refocusing work responsibilities; or giving people the freedom to work out the best way to do things.

TACOM-ARDEC Cross-Functional Teams Call On Employees' Full Potential

The research and development mission at Tank-automotive and Armaments Command's Armament Research, Development, and Engineering Center (TACOM-ARDEC) is designed and organized for accomplishment by cross-functional teams. New products are developed through Integrated Product Teams, which support a product from inception through final disposal. Membership on multiple teams develops secondary skills and challenges and motivates employees to use their full potential to improve the organization's products and services. Participation on these teams contributes greatly to job satisfaction.

Customers are also members of Integrated Product Teams. The Business Units—home bases—partner with the customer in developing the customer's original product justification, and the partners form joint, chartered teams upon budget approval.

CERDEC Refocuses Work Responsibilities for Better Personnel Use

To make the most of its resources, the Operations Division, Plans and Programs Branch of CERDEC's Space and Terrestrial Communications Directorate refocused the work responsibilities of its program analysts.

Originally, the Branch's program analysts (GS-11s and GS-12s) were organized in terms of functional areas and duties. The engineering staff (GS-12s and GS-13s) performed the administrative functions of budgeting, scheduling, and tracking for the Program Director to whom they were assigned. Because of the engineers' workload, the Division was obliged to hire contractor staff to accomplish its tasks.

Then the Division refocused the responsibilities of the program analysts. Each was assigned to a Program Director to perform the administrative functions the engineering staff had been doing. With the alleviation of administrative duties, the engineering staff could devote more time to technical engineering duties, thus increasing their work output. The need for contractor staff to augment the engineering staff also diminished.

The change provided both increased efficiency and cost savings. The salary differential between a program analyst and an engineer is $9, 460, based on average salaries of $59,468 for an engineer and $50,008 for a program analyst. The approximate annual savings if five program analysts are hired instead of engineers is $47,300.

Fort Campbell Implements a Self-Directed Work Team

At Fort Campbell, in the Packing and Crating Section of Installation Supply Division, a six member Self-Directed Work Team reduced the section's average cycle time from 12.5 days to one day. The team altered the Section's mapped process and developed its own metrics, measurement system, and data collection methods. As the team matured, the members set their own goals and progressively attained them until they reached their target goal of one day.

Recruiting for Tomorrow's Army—The Civilian Force

Recruiting and hiring for the Army of the 21st century involves far more than posters urging young people to "Be All You Can Be."

In the highly technical world of the research centers and laboratories, the work force is largely civilian and the requirement is for skills that are in great demand. Recruiting for this force includes not only innovative sourcing, but redesigning the personnel system itself to make it more attractive to potential candidates.

Army Research Laboratory Introduces Personnel Demonstration Program

Over the past 50 years there have been 109 studies of the Defense laboratories, each study citing the personnel system as the single biggest problem preventing the labs from attaining world-class excellence. With the concurrence of Congress in the Defense Authorization Act for Fiscal Year 1995, the Army Research Laboratory (ARL) and several other service labs began designing a personnel demonstration program—or PersDemo—to rectify some of the ills identified in the studies.

ARL is now in its second year of the implementation of PersDemo. The system is designed to make ARL more competitive in recruiting and retaining high-quality technical talent and to allow superior achievements to be recognized with a pay-for-performance system. One of the principal characteristics of the new system is the replacement of the 15 GS grades (each with 10 steps) with a pay-banding system that consists of three or four bands for the various occupational families. This allows managers greatly enhanced flexibility in making offers to prospective new employees and in promoting high performers.

Earlier systems made it easier to give employees high ratings, resulting in the appearance that the entire staff was performing at above average levels. Under PersDemo, the performance appraisal system is structured so that true performance is measured. A more natural distribution of results occurs when the majority of employees are grouped around an average value and the true overachievers and underachievers populate the wings of the distribution. Then the total funding pool for awards, bonuses, and raises is allocated so that the top performers get significant rewards and the underperformers receive little or no additional recognition. Another characteristic of this system is that it is cost neutral; that is, the funds normally available for rewards are not increased, but rather are redistributed as described above. PersDemo has also greatly simplified automated classification and eased the processes for discipline and separation.

TACOM-ARDEC Drafts Personnel Demonstration Plan

TACOM-ARDEC has a principal role in the development and planned implementation of its own Personnel Demonstration, the TACOM Personnel Demo. The plan, like several others within the Defense Department laboratory community, was drafted with Congressional approval and includes several personnel system improvements, including pay banding and a pay-for-performance system. Pay banding groups the 15 GS grades into four or five broad pay ranges within three occupational families. This adds significantly greater flexibility in setting pay for new employees and allows a greater link between pay and performance.

The reward system is unique for the Department of the Army Science and Technology Laboratory community in that the laboratories have standardized appraisal rating criteria built from the existing pay-setting criteria, that is, the position classification standards. This type of system continues the relationship between the initial requirements of the job and the pay set for that job when it was established; it extends the relationship to rating the actual work performed by the incumbent of that job on an annual basis. The relationship between rating scores and pay determines the annual pay increase an employee receives. Other personnel demo initiatives include simplified hiring practices, expanded employee development opportunities, and simplified job classification. The TACOM Personnel Demo Plan is at the Department of the Army for review and must still be reviewed by the Department of Defense and the Office of Personnel Management.

USATSC Assists Career Advancement with Upward Mobility Program

The upward mobility program at the U.S. Army Training Support Center (USATSC) allows the Center to fill a civil service position with a relatively high grade by hiring someone at a lower grade, setting the higher grade as a target toward which the person will advance. This practice provides career advancement for employees in lower grades and gives them an opportunity to learn from their seniors. USATSC also encourages the infusion of new ideas by soliciting local colleges and universities for high-quality personnel to occupy intern positions. Within the last year, USATSC has restructured 13 positions so they can be filled by someone advancing toward a target grade, to create opportunities for existing and new personnel.

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TACOM-ARDEC Regenerates the Workforce with Inventive Recruiting Tactics

TACOM-ARDEC recruited 81 new engineers to replace losses, preserve core skills, and attract and develop future technical leaders. An ag-

gressive public relations campaign, on-campus recruitment, job fairs, and Internet recruitment resulted in 115 job offers and a 70 percent acceptance rate. Close coordination with the regional Civilian Personnel Operations Center was also a contributing factor. The major recruiting event was the Picatinny job fair, "Life Cycle Recruitment." Such recruitment tactics as sign-up bonuses, accelerated promotions, tuition reimbursement, professional development plans, and quality of life packages encouraged many prospective candidates to apply.

Army Research Lab Recruits Top Students at Minority Institutions

To offset a shortage of young, high-caliber technical talent, as well as to increase the diversity of its workforce, the Army Research Lab is tapping into a hitherto underrepresented group of potential employees—high-performing students at the nation's Historically Black Colleges and Universities and other Minority Institutions. Through the Science and Technology Academic Recognition System (STARS), ARL holds an annual competition to select the most promising rising seniors in technology majors at these institutions. The three or four students selected each year are offered fellowships to support themselves through their senior year and two years of graduate study. They also become full-time ARL employees, working under mentors for three years during summers and other school breaks. At the end of this period, they are full-time permanent members of the ARL technical staff.

In addition to the fellowship and employment, ARL provides an enrichment program every summer; it includes trips to Congress and the Pentagon, inspirational speakers, and tutoring for the Graduate Record Examination. To date, there are 11 outstanding students (with an average grade point average of 3.7) in the STARS program, representing a commitment of over $1 million.

CERDEC Hires Full-Time College Students and Hopes They Will Stay

A challenge CERDEC faces is the difficulty of hiring high-quality engineers and scientists when the Center cannot match the salaries being offered by the Information Technology industry in the New York area. CERDEC has taken steps to improve its competitive posture with industry in several arenas. It hires full-time college students under authority of the Student Career Experience Program (SCEP) or the Career Related Experience in Science and Technology (CREST) to work flexible schedules (full-time, part-time, or cooperative) to augment their academic program and gain hands-on experience. The students are hired as career conditional employees, entitled to all Federal benefits while employed. If they continue in the program, they will automatically become interns when they have completed their degrees and 640 hours of work. CERDEC currently has 33 CREST and 9 SCEP students. Approximately 75 percent of those graduating have elected full-time government careers.

Approximately 75 percent of those graduating have elected full-time government careers.

CERDEC's parent command, Communications-Electronics Command (CECOM), is at Fort Monmouth, 50 miles south of New York City. The cost of living in the area is high—a significant challenge in attracting new employees. To assist new employees—both interns and students—in adjusting to the area, Fort Monmouth is offering low-cost housing in quarters previ-

ously occupied by military personnel and families. Unaccompanied personnel pay $10 a night and are quartered in fully furnished two-bedroom apartments (two people may share the unit). New employees with dependents are housed in family quarters (two- or three-bedroom apartments) for $600 per month. This saves the new employees about 50 percent of housing costs in the local economy. The housing incentive is offered for a period of six months, which may be extended if necessary.

Rewarding Excellence

NVESD Scientist Earns Recognition for Excellence in Technology Transfer

CERDEC's Night Vision/Electronic Sensors Directorate (NVESD) considers technology transfer an integral element of its research and development mission, and it strongly encourages its people to seek opportunities to accomplish this goal through cooperation and leveraging with industry and academia. Once a year, the Federal Lab Consortium for Technology Transfer solicits nominations for its Awards for Excellence in Technology Transfer, which recognize laboratory employees who have accomplished outstanding work in transferring a technology developed by a federal laboratory to other applications. This year's nominee was Mr. Jack Dinan for his work in the process of spectroscopic ellipsometry, which is used in the Directorate's semiconductor "microfactory." His unique contribution overcame the limitation of the "set and forget" nature of the process and provided a technique for monitoring characteristics in real time. The technique may also provide a means of controlling the process to insure a high yield of products meeting specifications.

TACOM-ARDEC Builds Morale with "We Make A Difference" Award

TACOM-ARDEC offers a special award for employees and teams that make a difference. Now in its ninth year, the "We Make a Difference" Award has been presented more than 1,343 times since its inception. Believing that employee recognition is an important approach to innovation, learning and morale building, senior executives of TACOM-ARDEC personally participate in granting hundreds of awards a year. At an annual event called the "People Enhancing Picatinny (PEP) Rally," the senior leaders present medallions to honor winning teams and the facilitator of the year.

Employee Education, Training, and Development

Employee education, training, and development are the means an organization uses to build its people's knowledge, skills, and capabilities, in support of high performance. The approach to achieving this growth must include the design of education and training, as well as delivery methods, reinforcement on the job, and evaluation of results, with emphasis on meeting not only organizational needs, but the needs of individual career progression. Employees and their supervisors should participate in initiating, designing, and evaluating education and training, because often they are in the best position to identify critical needs and evaluate success. A further challenge is employee development in management and leadership: succession planning, at all levels of increasingly diverse organizations, is a growing priority.

Employee Education, Training, and Development: Success Stories of 1999

The successes of 1999 in education, training, and development included innovations in the design of education and training, new courses and delivery methods, and a range of development initiatives.

Designing Education and Training

TRADOC Develops Army Training Technical Architecture

TRADOC's U.S. Army Training Support Center (USATSC) has developed an Army Training Technical Architecture (ATTA) that will support Army training into the twenty-first century. The design has been approved. Work is now ongoing to incorporate several sets of specifications and standards—those of the Department of Defense Advanced Distributed Learning Initiative, the Institute of Electrical and Electronics Engineers Learning Technology Standards Committee, the Aviation Industry Computer-Based Training Committee, and the Joint Technical Architecture-Army. Using this approved architecture, USATSC has started the process of redesigning and implementing Army training information systems to seamlessly deliver training to the warfighter.

This process encompasses the complete spectrum of Army doctrine and training. It includes identifying requirements and guiding development, staffing, delivery, and training management. The work must be consistent with Defense Department analysis and modeling requirements, to ensure interoperability between information systems. The training designers have also worked with commercial vendors such as Allen Corporation, Asymetrix, and Logicon to influence their product development towards a standards-based output consistent with the ATTA. Working with strategic partners, USATSC builds a better process across the Defense Department for content distribution and reusability.

The Army has a digital library of Army doctrine and training, made up of databases and scanned documents and used for on-demand generation of traditional Army training and doctrine products. The Internet and the Defense Department's Nonsecure Internet Protocol Router Network are the primary means of delivery, and on-demand products incorporate the latest information available. This digital library is an integral component of the ATTA, and all collective and individual training will be planned and managed within the ATTA. Work continues to integrate existing Army training information systems into the ATTA—systems including the Center for Army Lessons Learned; the Joint Training, Analysis, and Simulation Center Joint Digital Library; and the Joint Computer-Aided Acquisition and Logistic Support system.

CERDEC Participates in Consortium for Advanced Studies

CERDEC participates in a consortium with Bell Atlantic, MCI, Lucent Technologies, and Stevens Institute of Technology to offer a variety of masters degree and Graduate Certificate of Special Study programs either at Fort Monmouth or in the local commuting area. Four masters degree programs are offered: Computer Science, Electrical Engineering, Telecommunications Management, and General Management with concentrations in Information Management or Project Management. Graduate Certificate programs offered are Programming for Critical Applications, Project Management, Telecommunications Management, Digital Systems, Information Networks, and Wireless Communications. Currently nine CERDEC employees are enrolled in a Consortium degree program.

CERDEC Announces New Degree: Master of Technology Management

To train promising engineering and science employees for specific business and technology management challenges, CERDEC has formed an alliance with industry and the Stevens Institute of Technology to offer a new graduate degree: Master of Technology Management.

CERDEC's parent command, the Communications-Electronics Command (CECOM), is part of the Stevens Alliance for Technology Management, made up of prominent New Jersey high-technology companies. Together, these organizations have developed the powerful, customer-driven Master of Technology Man-

agement program, which effectively integrates both business and technology topics. Graduates will be able to manage technology for the success of their business units.

This degree program is offered at several Stevens Alliance member locations as a lockstep program, in which all participants take all courses together. Qualifying applicants must have a strong, technical academic background with at least five years' experience in their field. Upon completion of the program, graduates receive a Master of Technology Management degree from the Stevens Institute of Technology.

Aberdeen Test Center Designs Master of Science in Test and Evaluation

Aberdeen Test Center has partnered with Drexel University to create a new graduate degree program, the Master of Science in Test and Evaluation.

It is a key component in maintaining the technical edge of the command to address the increasingly complex requirements of test and evaluation in the future.

The Center has long recognized the need for a university-level test and evaluation curriculum to keep its workforce at the cutting edge of technology. To that end, Aberdeen is joining with Drexel University to finalize a Master of Science in Test and Evaluation program. It is a key component in maintaining the technical edge of the command to address the increasingly complex requirements of test and evaluation in the future. All command personnel with the requisite skills and background may qualify for enrollment.

NVESD Enhances Professional Development of Engineers and Scientists

CERDEC's Night Vision/Electronic Sensors Directorate enhances the professional development of its engineers and scientists by encouraging and supporting their attendance at numerous conferences, formal training courses, professional skills courses, symposia on mission-related topics, and continuing professional learning courses at local colleges and universities. NVESD also sponsors on-site technical and graduate-level engineering courses and seminars to expose its engineers and scientists to experts in key technology areas.

Under NVESD's sponsorship, technical experts and university professors conducted on-site technical and graduate-level engineering courses and seminars on Forward-Looking Infrared (FLIR) Performance Analysis, Atmospheric Modeling, Atmospheric Transmission, Microprocessors, and Architectures and Algorithms for Image Processing. These courses provided in-depth technical knowledge to improve performance and enhance professional development. NVESD also sponsored seven on-site graduate-level courses in electrical/electronic engineering as part of a George Mason University masters program in electrical engineering. Bringing these courses on-site reduced travel costs and the amount of time engineers and scientists were away from the workplace

NVESD currently supports the efforts of 26 engineering and science employees who are pursuing masters and doctoral programs in technical and engineering-related fields. Allowing these employees to enhance their technical expertise and value to the organization improves mission performance.

AMCOM Establishes Acquisition Center University

The Executive Director for the Army Aviation and Missile Command Acquisition Center has established the Acquisition Center University (ACU), a formal on-the-job education center focused on the practical application of acquisition processes.

The Executive Director views "training the force" as mission critical. Initiatives such as downsizing, rightsizing, and base realignment and closure have adversely impacted many traditional training methods. Increased training costs, lack of travel funds, and reluctance to take "time away from the desk" have made it difficult to provide Defense Acquisition University (DAU) and Army Logistics Management College courses.

Thus the Acquisition Center University was established in April 1999. Its purpose is to ensure an acquisition workforce that is well-rounded, multifunctional, and empowered through high-quality, timely, relevant education. It utilizes the expertise of current AMCOM acquisition practitioners and external subject matter experts. ACU instructors are tasked to ensure that training is relevant to the workplace and that every training candidate is honestly evaluated for strengths and critical shortfalls. They have a mandate to deliver their respective expertise in a "real world" context—experienced practitioners training other practitioners.

The curriculum draws on over 130 possible acquisition topics that have been determined through acquisition reform assessments, inspector general observations, and independent recommendation, as well as management direction. The need for workplace-relevant training is unquestionable; the payoffs are potentially unlimited. The diversity of the training gives the entire AMCOM acquisition workforce another forum, at the local level, to meet the continuous learning requirements established by the Undersecretary of Defense for Acquisition and Technology.

Since the ACU's inception, two classes a month have been taught, over 350 students have been trained, and the concept has received endorsements from the Defense Acquisition University and the Secretary of the Army for Research, Development, and Acquisition (SARDA). Other Commands are pursuing the opportunity to create similar institutions. Not only is the ACU a "win-win" development for AMCOM; the university could easily become a major catalyst for significant process innovations and exchange of ideas.

The need for workplace-relevant training is unquestionable; the payoffs are potentially unlimited.

Delivering Education and Training

NVESD Provides In-house Courses for Engineering and Science Interns

CERDEC's Night Vision/Electronic Sensors Directorate has developed a 32-hour course, "NVESD Imagery Modeling, Analysis, and Testing," to provide its engineering and science interns with cost-effective formal training in infrared and electro-optics. Conducted by NVESD's own subject-matter experts, the new course significantly reduces formal outside training, travel, and subsistence costs to approximately $4,000-5,000 per intern. Time away from the work site for formal training during the internship is reduced by several weeks.

The course also expedites the professional development of interns by providing training on relevant technology areas early in the internship. Interns receive a complete introduction to infrared and electro-optical systems, as well as two significant reference books: *The Infrared Handbook* and *Introduction to Infrared and Electro-Optical Systems*. The interns also interact with 11 onsite experts, who provide instruction in the 28 technical areas included in the course.

Interns also receive an extensive Intern Training Package that provides orientation to NVESD missions and functions; mandatory intern courses; technical courses in key areas of infrared technology and electro-optics; and acquisition courses in the Systems Planning,

Research, Development, and Engineering career field. Also included are career-related instruction, courses to enhance briefing and professional writing skills, and courses to develop leadership skills. The package also includes other relevant acquisition certification information, career program guidance, and other training and development information.

INSCOM Brings High-Quality Computer-Based Training to the Employee Desktop

The Information Technology Directorate at the National Ground Intelligence Center (NGIC) has implemented an exciting new capability on its local network, enabling employees to develop new competencies quickly and efficiently. The new capability builds on Army computer-based training capabilities and delivers high-quality courses, customized for NGIC, directly to the employee's desktop.

NGIC faces the continual challenge of keeping its employees adequately trained on the complex equipment and software required for their mission. Timely and in-depth training is essential, but funding levels cannot keep pace with technological advancement. To help ensure a highly trained work force, NGIC has devised a way to deliver on-demand computer-based courses straight to the employee's desktop. Employees now get the training they need, when they need it, with only marginal cost to NGIC. This innovative program has been a "win-win" situation for NGIC, saving thousands of dollars in training and travel costs and hundreds of lost employee hours, while improving the overall satisfaction and technical proficiency of the workforce.

CERDEC's Space and Terrestrial Communications Sends Information Security Engineers to Formal Training and Conferences

CERDEC's Space and Terrestrial Communications Directorate, Information Systems Security Branch instituted the C2 Protect Program as a testbed for empowering its engineers. This program—with its obvious wordplay on "command and control" and "see to protect"—formal training and conferences. There they gain an opportunity for intensive individual infusion of new and competing security concepts and initiatives.

This professional contact is particularly useful for investigating the transfer of commercial off-the-shelf technology to government off-the-shelf...

The engineers receive training through the Black Hat Conference, National Security Agency Common Criteria Courses, and other external conferences and training opportunities. These events bring together and organize developing security practices in industry and government.

Association, discussion, and direct interface with industry and government peers provide a focus for learning how other users perceive what they need, where their agencies are going, and what solutions they envision. This professional contact is particularly useful for investigating the transfer of commercial off-the-shelf technology to government off-the-shelf, determining the requirements for data network security, and transferring information to other agencies and commercial enterprises.

The information security work force is able to maintain a higher level of information assurance skills, with an in-depth understanding of threat development, practices, and solutions. Formal training and conferences provide the fastest, most efficient means to gain the necessary knowledge and skills, in contrast with on-the-job training, literature searches, and Internet searches. Formal training and conferences are estimated as 25–50 percent more effective than other learning resources. The

leadership of the Information Security Branch estimates that the formal training has increased productivity by 3-5 percent.

TRADOC's Army Training Support Center Leverages Training To Promote Leadership

The U.S. Army Training Support Center has begun an aggressive program to educate its workforce of approximately 380 military and civilian employees to provide opportunity for growth to meet the challenges of the organization's current and future missions. USATSC is responsible for providing training support products and services to soldiers worldwide. To ensure the highest level of effectiveness and efficiency in carrying out this mission, USATSC is investing in the professional development of its people. One of the areas it focuses on is training.

USATSC's training program provides centralized training in relevant skills across the command, in both leadership and technical areas. It leverages existing training offered through local colleges and universities and other vendors, using a variety of delivery media including video training, CD-ROM, Web-based instruction, and traditional classroom instruction.

USATSC extends these training opportunities to other TRADOC installations. Since January 1999, 16 courses were provided to the workforce in the areas of modeling and simulations, distance learning, and contracting. Over 30 employees attended formal leadership programs, such as the Aspiring Leader and New Leader programs offered through the U.S. Department of the Army Graduate School Leadership Academy. An emerging program will target middle grade managers.

Fort McPherson/Fort Gillem Garrison Training Committee Builds an Installation Training Plan

FORSCOM's Fort McPherson and its subinstallation Fort Gillem have a joint Garrison Training Committee, which has gradually expanded its scope to include all installation training. The committee serves as the training quality management team for the Commander.

The committee's primary goal for 1999 was to contribute to the development of the Installation Training Plan. Serving as a channel for sharing funds to support training, the committee also provided a communications channel among the training providers, customers, and other military and civilian personnel. It identified and prioritized training requirements and pinpointed the most cost-effective sources.

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The training committee will choose new objectives each year and continue to improve the program.

USAREUR's General Support Center—Europe Invests in Employee Training

USAREUR's General Support Center—Europe provides logistics support of many kinds within the European Theater. To become more effective as a business process, it has made a major investment in training programs for its employees. The requirement for training runs throughout the organization, from vocational training to automation and leadership and teambuilding training. Ninety percent of the Center's employees are not native English-speakers, so special programs are needed to ensure they fully comprehend the material they are taught.

For much of the required training, General Support Center—Europe was able to solicit support from the state government of Rhineland Palatinate. The state government funded several kinds of training in the vocational area, including specialized maintenance classes, enhanced storage procedure sessions, and environmental courses. Special automation classes were also negotiated—classes tailored to the audience, using the English software with German instructions and material. Rhineland Palatinate also provided onsite consultants to enhance team building. For leadership and teambuilding curricula, the Army Management Staff College faculty is providing specially tailored classes taught on site.

Developing Employees for Future Leadership Roles

A continual challenge is planning for succession: preparing employees to assume leadership and management roles at all levels. Mentoring and providing developmental experience were widely used approaches to employee development.

NVESD Mentors Engineering and Science Interns

Through a successful university recruitment effort, CERDEC's Night Vision/Electronic Sensors Directorate hired ten Engineering and Science interns during FY1999. To ease their transition into the Directorate, NVESD instituted an active mentoring program. Each new intern is assigned an engineer or scientist who can answer questions ranging from characteristics of the Washington area to a specific work assignment. Mentors give guidance on educational opportunities, training sources, and on-the-job training assignments. They may also give career advice as the internship progresses. The mentoring program is an important introduction for the new hire to the intern program itself, NVESD, and the federal workforce.

NVESD also formed an Engineering and Science Intern Tech Club, so that interns and students would have a forum to meet their peers and develop a sense of "belonging" while being educated about the visions, missions, and technologies of CECOM and NVESD. The club is run by an intern president who is elected by the group; currently it has 20 members. In addition to social activities after work, the club holds monthly meetings featuring guest speakers and demonstrations. Presentations included "What It Means to be an Advanced Technology Demonstration Manager," a countermine explosives demonstration, a "Paint the Night" demonstration, a microfactory tour, and a laser demonstration. The Engineering and Science Intern Tech Club will increase the retention of interns, lead to the successful conversion of students to full-time personnel, and familiarize the members with NVESD technologies and programs.

USATSC Provides Mentors for Junior Employees

USATSC's plans for its employees' development include a six-month mentoring program. The program pairs senior leaders and managers with junior employees, giving the employee an opportunity to gain perspective by seeing leadership and management issues and challenges from a senior leader's viewpoint and discussing them. The pairing will also help ensure a continuation of the institutional knowledge when senior leaders retire. The first cycle of mentorship began in January 1999, with five mentors and eight protégés. The second cycle began in July 1999, with seven mentors and eight protégés. All participants have lauded the benefits of the program.

Yuma Proving Ground Allows Security Specialists To Develop Skills on Web Site

At Yuma Proving Ground, the Law Enforcement Security Division's organizational Web site was named as Yuma's "Best Practice" for fiscal year 1999. The Security Division developed the site for security training and continues to improve it with information on subjects like force protection and domestic violence, as well as providing on-line forms for reporting com-

puter viruses, bomb threats, criminal activity, and much more.

By allowing individual security specialists to develop their own training and information pages on the Web site, the Security Division not only gives customers immediate information at any hour, but enables each security specialist to develop new skills that will help them continue to automate their work product. This continued thrust towards automation is one way a downsized organization can continue to offer cutting-edge customer service.

The Web site saves the government over $320,000 annually in man-hour costs related to annual security training.

USATSC Uses Developmental Assignments To Create Employee Opportunities

The U.S. Army Training Support Center uses developmental assignments to round out its people's experience. Individuals gain an opportunity to be involved in projects and assignments outside their normal work activities. The assignments also allow USATSC to make the most effective use of the workforce and broaden participants' perspectives within the organization. Participation in developmental assignments gives employees an opportunity to use skills they have acquired but might not have an opportunity to use in their day-to-day work activities.

NVESD Supports Developmental Assignments To Promote Professional Growth

CERDEC's Night Vision/Electronic Sensors Directorate offers several types of developmental assignments to promote its employees' professional growth. Positions can include a two- to three-year assignment as a science advisor under the Army Materiel Command Field Assistance in Science and Technology Program; an assignment at Army level with the Secretary of the Army for Research, Development, and Acquisition (SARDA); or a one-year assignment with the Deputy Chief of Staff for Intelligence, the Defense Intelligence Agency Central Measurement and Signature Intelligence Office, or the Assistant Under Secretary of Defense. An employee can also receive an Interagency Personnel Act assignment, serving two years with Sandia Labs and another year with Massachusetts Institute of Technology's Lincoln Lab.

The assignments also allow USATSC to make the most effective use of the work force and broaden participants' perspectives within the organization.

Another opportunity is the Action Officer Developmental Assignment for the Director, which provides senior engineers and scientists the chance to work with top management on a daily basis as action officers. These 18-month assignments expose senior engineers and scientists to all the directorate's technologies and programs. Action officers serve as liaisons between the Director and the workforce and function as spokespersons for the Director to outside organizations. Assignments include preparing technical analyses and proposals, writing information papers, providing the directorate position on issues, and preparing briefings for such initiatives as new Science and Technology Objectives, joint programs with the Defense Advanced Research Projects Agency, and CECOM's Command, Control Communications, Computers, Intelligence, Surveillance, and Reconnaissance effort.

Another possibility, the SARDA Developmental Assignment, allows an NVESD scientist to serve as the NVESD SARDA Liaison to the Deputy Assistant Secretary for Research and Technology and the Director for Technology. This assignment is designed to promote the professional development of NVESD employees and to exchange critical expertise in support of the defense community. The NVESD SARDA Liaison serves as the principal technical advisor

on matters relating to the NVESD program and technology initiatives.

Aberdeen Expands Employee Skills with Developmental Assignments

The Aberdeen Test Center makes wide use of internal and external developmental assignments for its employees. Internally, interested employees are given the opportunity to expand their technical skill base by moving to areas where the workload is highest. In addition, test management personnel are moved to the technical support areas of the command and vice versa, depending on test and mission requirements. Externally, ATC employees are afforded numerous opportunities for developmental assignments at higher headquarters. External developmental assignments have included Headquarters, Developmental Test Command; the Test and Evaluation Management Agency; and the Office of the Secretary of Defense.

Employee Well-being and Satisfaction

Employee well-being and satisfaction constitute a state of being influenced by diverse factors ranging from recreational opportunities to retiree health care.

Three considerations may be said to determine employee well-being and satisfaction: the work environment, the employee support climate, and the methods used to evaluate well-being, satisfaction, and motivation.

Work Environment

An organization must provide a safe and healthful work environment for all employees, taking into account their differing workplaces and associated requirements. Employees should have a voice in identifying safety and health factors, including ergonomic considerations. Standards for key safety and health factors must be specific enough to facilitate the tracking of status and progress.

Work Environment: Success Stories of 1999

Successes related to improving health and safety in the work environment ranged from large programs promoting overall health and fitness to limited initiatives making small areas of life better.

TACOM-ARDEC Promotes Total Fitness

TACOM-ARDEC's Total Fitness program—first deployed as an executive fitness program—has been extended to all employees. It now reaches over 70 percent of the population with a wide variety of health and fitness options.

TACOM-ARDEC offers extensive resources contributing to the overall well-being and health of the work force. After receiving a half-million dollars for winning the Army Baldrige competition, TACOM-ARDEC invested the money in improving employee quality of life. Fitness facilities include an aerobics studio, a cardiovascular exercise studio, a cardiac rehabilitation area, and a health risk assessment center. Activities integral to employee wellness include classes on Nutrition, Weight Reduction, Stress Management, Smoking Cessation, Holistic Wellness, and High Blood Pressure Management.

TACOM-ARDEC's Total Fitness program is enhanced and diversified by the integration of other resources, such as a gymnasium, an outdoor swimming pool, ball fields, tennis courts, walking/running/fitness trails, a racquetball court, and an 18-hole golf course.

AMC and USACHPPM Partner To Reduce Injuries Through Tools That "Fit"

The Army Materiel Command is drawing on the ergonomic assessment and design expertise of the United States Army Center for Health Promotion and Preventive Medicine (USACHPPM) in a major effort to provide its employees with ergonomically designed tools. Also crucial to the project are the acquisition and management expertise of the General Services Administration, the manufacturing and design expertise of civilian tool manufacturers, and AMC's own front-line production level expertise.

The project will provide the basis for a Command-wide tool replacement strategy for AMC, as well as define the effect of tool replacement on productivity in a cost-benefit analysis.

The project centers on the Tank Disassembly and Reassembly Area at Anniston Army Depot, one of the highest-risk areas for musculoskeletal injuries. Workers report that unsuitably designed hand and power tools often cause or contribute to these injuries as well as reduce the overall productivity of the unit. Tool manufacturers are loaning replacement tools at no cost to Anniston Army Depot, and the USACHPPM is conducting a systematic analysis and comparison among these tools and the tools currently on the production line. The analysis measures physiologic fit, usability, and production cycle time. The project will provide the basis for a Command-wide tool replacement strategy for AMC, as well as define the effect of tool replacement on productivity in a cost-benefit analysis. AMC has operations at 62 installations, employing 59,045 civilians—approximately 24 percent of all Army civilian employees—in primarily industrial tool-based operations.

MEDDAC at Fort Hood Eliminates Ethylene Oxide Gas Use To Make Workplace Safer

The Central Material Supply Section at the Fort Hood MEDDAC no longer uses ethylene oxide gas for sterilization.

The gas is a possible carcinogen, but some sensitive items cannot be heat sterilized and the current alternative was the use of ethylene oxide. The Supply Section was plagued by frequent alarms of the ethylene oxide gas monitors, when no traces of the gas could be found. Uncertain functioning of the monitors made it inadvisable to depend on them for worker safety.

The staff's first course of action was to isolate the items that required ethylene oxide sterilization, according to manufacturer requirements. They identified and ordered alternative items that could be heat sterilized. These approaches reduced the number of items requiring gas sterilization to less than 25. After evaluating community resources, the MEDDAC staff negotiated a resource-sharing agreement with the local Veterans Administration hospital to process these items in its ethylene oxide system at no cost to the MEDDAC. Through resourceful staff work, the use of ethylene oxide gas was eliminated at little or no cost, and a potentially significant workplace hazard was removed.

SBCCOM Weighs Competing Risks to Employee Safety

At England Air Force Base near Alexandria, Louisiana, personnel from SBCCOM formed a Technical Escort Unit for a project involving excavation of a Small Arms berm, in an area where Chemical Agent Identification Sets were thought to be buried. The original Work Plan/Site Safety Submission required the Technical Escort Unit to wear Level B protective cloth-

ing—outfits that included self-contained breathing apparatus, hooded chemical-resistant clothing such as overalls and long-sleeved jackets, chemical-resistant gloves and boots, hard hats, and face shields.

During a review of the plan, the Technical Escort team leader recognized that the heat might present a greater threat than the possibility of dangerous chemicals. He evaluated the probability of uncovering chemical agents, the types and amounts of agents that might be present, the monitoring strategies in place, and the environmental conditions. He concluded that the probability of uncovering chemical agent vials while excavating the berm was remote; that the lewisite mustard, phosgene, and chloropicrin would all be packaged in glass vials (worst case) or in steel containers (best case); that low-level real-time monitoring would be in place for all these agents, as well as a Fourier Transform Infrared Spectrometer; and that the work would take place in the open air—but that the average daily heat index was over 100 degrees. His overall conclusion was that workers could safely excavate the site in Modified Level D gear—a slung mask—until chemical agent vials were actually discovered and then upgrade personal protection equipment as appropriate.

No chemical agent vials were actually uncovered at the site. Serious heat injuries were nonexistent, though there were some minor heat casualties that required rest and rehydration. The overall length of the project—without the slowdown imposed by heavy protective gear—was reduced by at least half, thus saving several hundred thousand dollars without significant risk to those involved.

19th TAACOM Renovates Building To Insure Safer, Healthier Employees

The 19th TAACOM has renovated a 1930s building to contemporary standards, to protect the health of the employees who work there. When Building 4305 on Yongsan's South Post was built, substandard insulation was installed. The building was thus susceptible to extreme outdoor temperatures. Heating and cooling costs were high, and the inhabitants were less productive due to discomfort and illness. The roof of the building's annex was not watertight, and leaks threatened the structural integrity of the entire building.

The 19th TAACOM constructed a new roof over the annex and covered the entire building with rigid external insulation. Now the Headquarters 34th Support Group administrative rooms are protected from potential water damage and insulated from extreme outdoor temperatures. Employees will be more comfortable and are less likely to become ill. The renovation saved money by avoiding three kinds of cost: a potential replacement cost of $5.6 million, the cost of higher levels of heating and cooling, and the cost of nonproductivity due to employee illness.

Fort Hood Mans Hotline for Victims of Domestic Violence

Fort Hood's Directorate of Community Activities, Human Resources Division, Family Advocacy Program currently mans the 287-CARE telephone line seven days a week, twenty-four hours a day. The hotline is designed to provide an immediate response for military-related personnel who find themselves at risk due to ongoing or potential domestic violence, by providing a cadre of well-trained staff who can respond to domestic violence situations. This system also provides continuity for domestic violence reporting during and after duty hours.

Fort Hood Conducts Workplace Violence Prevention Training

During FY 1997, the Equal Employment Opportunity Officer and the Employee Assistance Program Coordinator at Fort Hood conducted a survey to determine the potential for workplace violence on the installation. As a result, Workplace Violence Prevention Classes are taught on

a monthly basis—a two-day class for employees and a single day for supervisors. A workplace violence prevention team was established, with the Chief of Human Services Division as chairperson and the Employee Assistance Program as the point of contact. The team also included the Equal Employment Opportunity Officer, the Staff Judge Advocate Labor Counselor, and representatives from the Corps Chaplain's Office, Civilian Personnel Management Employee Relations Office, Provost Marshal's Office, Public Affairs Office and Safety Office, as well as the employees'union and the Department of Psychology at the local university. The Commander issued a Respectful Workplace Policy Letter supporting zero tolerance for violence in the workplace.

MEDDAC at Fort Leonard Wood Devises Healthy Beginnings Program

The MEDDAC at Fort Leonard Wood designed and implemented a Healthy Beginnings program to help the active duty service member maintain physical fitness during her pregnancy and pass her Army Physical Fitness Test six months after delivery of the baby. The program consists of a cardiovascular workout (aqua aerobics, floor aerobics, or walking) three days a week and an education class one day a week.

Exercising safely during pregnancy has been shown to decrease time spent in labor and complications during delivery. Postpartum mothers receive diagnostic physical training tests 60 and 90 days after delivery.

Employee Support Climate

An organization's employee support climate is the array of services, benefits, and policies it offers to its people. The organization may provide such enhancements as mentoring, career development services, recreational and cultural activities, education not related to the job, job rotation or sharing, special leave for family responsibilities or community service, flexible work hours, outplacement, and retiree benefits such as extended health care. Enhancements should be adaptable to the needs and expectations of a diverse work force.

Employee Support Climate: Success Stories of 1999

Enhancements offered to employees in 1999 covered a wide spectrum. Successes ranged from flexible worktime to services for employees in transition.

TACOM-ARDEC Encourages Workweek Flexibility with Flexi-tour

At TACOM-ARDEC, employees are afforded maximum flexibility in choosing work hours in a program called Flexi-tour. Approximately 41 percent of the TACOM-ARDEC workforce participates in the Compressed Work Week to facilitate commuting and to provide maximum flexibility for employees with special family needs or other responsibilities. TACOM-ARDEC has also instituted Flexiplace, which grants the opportunity to work at home, as well as a new leave policy that enables employees to use their sick leave to address family health issues.

Fort Carson Partners with Builder for Army's First "Privatized" Family Housing

Fort Carson is first to implement the Army's new Residential Communities Initiative, under which commercial developers contract to build and renovate all on-post family housing.

In September 1999 Fort Carson Family Housing—a subsidiary of North Carolina developer J. A. Jones Incorporated—won the 50-year contract for Fort Carson housing. In November the contractor assumed ownership of all existing family housing on post, with

groundbreaking for new housing scheduled for March 2000.

Over the next five years, the contract will give Fort Carson 840 new sets of quarters and 1,823 sets of renovated quarters—"the quality housing our soldiers deserve," says the Fort Carson leadership. The building of new and newly renovated homes will increase the number of soldiers living on post by 10 percent.

Fort Campbell Encourages Employee Involvement in the Commercial Activities Process

Early in the process of deciding which activities should be performed commercially, the Fort Campbell Public Works Business Center realized that the affected employees needed to be involved. The individual performing a daily task knows best how a process currently works and which enhancements should be made.

The Fort Campbell Garrison Commander had established two goals for the commercial activity studies. First, there would be no loss of jobs; second, trust and respect should be rejuvenated. Involvement of the affected employees in the commercial activities process met the Garrison Commander's intent for both of these goals. Five extensive reviews of the Performance Work Statement have taken place, and each employee affected by the review outcome has had a chance to assess the work statement in meetings. The management team ensured that any changes proposed by employees were included in the next version of the document.

Fort McPherson and Fort Gillem Organize a Civilian Transition Program

Fort McPherson and Fort Gillem face a reduction of at least 50 employees and perhaps 100, according to current projections. To ease personnel turbulence and provide training, development, and career opportunities for civilian personnel who may be affected, the installations have organized a Civilian Personnel Transition Team.

The reduction may result from ongoing commercial activities studies scheduled for completion by the end of Fiscal Year 2000. In an effort to structure Most Efficient Organizations, the garrison is reorganizing and realigning, to deal with the possible loss of 75-100 employees. The Personnel Transition Team was developed to provide caring and compassionate support and services to all personnel affected by the studies. It gives hands-on assistance to all employees to help ensure successful transitions and career changes as required. Team members include the Civilian Personnel Advisory Center, Civilian Personnel Operations Center, Army Career Alumni Program, Office of Personnel Management–Atlanta, Department of Labor, Army Continuing Education Services, and liaison personnel from each of the six garrison Service Centers impacted by the studies.

A line of communication is open now for garrison employees, and favorable comments have been made on the availability of services and a sense that someone cares.

Garrison employees can take advantage of the Personnel Transition Team up to one year prior to possible transition. Since June 1999, employees have been participating in job fairs and training. Garrison official personnel folders have all been reviewed, and all the records have been transported to Fort McPherson. Some occupational areas have been identified for additional training or retraining. The Department of Labor is coordinating efforts to identify local colleges, universities, and technical institutions to provide funded training for affected employees.

A line of communication is open now for garrison employees, and favorable comments have been made on the availability of services and a sense that someone cares. These reviews have led to use of Personnel Transition Teams by

tenant organizations for activities affected by commercial activities studies.

Letterkenny Army Depot Career Center Launches "Special Request" Program

The Letterkenny Army Depot Community and Career Center provides a wealth of services to depot employees, former depot employees affected by a reduction in force, military members, and dependents of the military and civilian workforce. With enhanced computer and software technology and a dedicated staff, the Center has assisted more than 700 customers with job searches, resume writing, career planning, and retraining.

The Center improved service by implementing a "Special Request" program in which the Center sends job information to personal e-mail addresses of current and previous employees, ensuring that everyone keeps abreast of local employment opportunities. Also, the Center now provides 24-hour voice mail through which callers can inquire about the latest federal, state, and private sector employment opportunities, as well as events and seminars.

Center plans include improving employees' personal development through the use of computer-based training, job modeling to experience new career areas, and expanded use of the Internet to enhance learning and career skills.

19th TAACOM Builds Child Development Center at Yongsan

Until recently, the two child development centers at Yongsan, Blackhawk and Hannam Village, were not built to Army standards and did not meet inspection criteria. The child-to-staff ratio was higher than it should be, because the facilities were separate from each other and the floor plans were not suited to their purpose. Employee morale was affected by the inadequate facilities, and parents were hesitant to leave their children there.

A new consolidated facility, costing $4.1 million, provides standard space for 188 children. The facility includes such amenities as a commercial kitchen, spacious modules, large playground, isolation/sick child room, and staff training room. These features were either missing entirely or very limited in the two previous facilities.

Operating with only half of the staff previously required for the two facilities will result in savings of $255,000 in annual labor expenses.

The new facility, built to Department of the Army standards and certified by the Defense Department, has improved the chances for accreditation. New community programs can now be provided, such as drop-off care and food exportation to School Age Services. The Child Development Center customer satisfaction rating improved from 4.1 to 4.3 on a 5-point scale, and employee work satisfaction has also improved. Operating with only half of the staff previously required for the two facilities will result in savings of $255,000 in annual labor expenses.

AMCOM Legal Office Gives Tax Assistance and Ethics Guidance to Soldiers

The Redstone Arsenal Tax Center provides for increased quality of life for soldiers assigned to AMCOM and all tenant activities. The ability to use electronic filing has allowed soldiers to obtain their refunds in a matter of days rather than weeks or months. During the 1999 tax season, the tax center saved its clients an estimated $171,000—counting only the fees they would have paid a commercial tax preparer. The returns netted approximately $991,000 in refunds for clients.

The Legal Office is also helping the commander obtain a better workforce by increasing awareness of standards and values. The office publishes a monthly ethics advisory on topics of

The returns netted approximately $991,000 in refunds for clients.

current interest or scrutiny. Heightening people's awareness of such topics increases the quality of the workforce and hence the quality of the service provided.

Fort Gordon Opens Self-Storage Facilities for Post Residents

At Fort Gordon, many on-post residents have limited personal storage space within their housing units or barracks. Initiating a new service, the post's Community Activities directorate constructed several units of various sizes to offer convenient self-storage, with oversight provided by the manager of an adjacent Morale, Welfare, and Recreation facility. The largest storage building had 106 self-storage units. These facilities provide a needed service that costs patrons less than commercial storage. They also provide additional income to the Morale, Welfare, and Recreation Fund—about $46,000 annually.

Measures of Employee Satisfaction

Critical to employee well-being, satisfaction, and motivation are the methods used to measure these factors. What to consider and how to quantify it are key issues for the organization. Factors that may be looked at include effective employee problem resolution; safety considerations; employee views of management; employee training, development, and career opportunities; employee preparation for changes in technology or the work organization; work conditions and workload; cooperation and teamwork; communications; recognition; benefits and compensation; equal opportunity; and job security. Indicators—quantifiable in differing degrees—may include absenteeism; turnover; safety incidents; grievances and other job actions; insurance costs; workers compensation claims; and results of surveys.

Measures of Employee Satisfaction: Success Stories of 1999

Formal assessments of employee satisfaction included surveys asking for employees' opinions about the climate for quality, productivity improvement, and employee well-being. A less common measure was open-ended dialogue between employees and those who provide services to them.

CAA Surveys Employees for Quality and Productivity Improvement

For the past two years, all Center for Army Analysis (CAA) employees have been asked their opinions on the state of the Center's climate for quality and productivity improvement. Using a widely recognized survey on quality and productivity, originally developed for the Defense Department, the Center has been able to identify its relevant strengths and weaknesses from the perspective of both its management and its workers. The survey characterizes various aspects of an idealized quality/productivity-oriented organization, and respondents are asked the extent to which these characteristics are true of the Center. The aggregated replies of all Center employees have been compared with benchmark data from over 144,000 respondents in more than 1,000 government and industrial organizations. Employees regard the Center as significantly above the benchmark average in most survey categories.

To assess the strengths and weaknesses revealed by the climate survey, a focus group of volunteers from all areas of the Center has been formed. This group is charged with providing recommendations for capitalizing on Center strengths and remedying Center weaknesses. As appropriate, these recommendations will be incorporated into Center quality/productivity improvement plans. Progress will be ascertained based on comparison with future survey results and existing quality/productivity measures.

TACOM-ARDEC Uses Quarterly Climate Survey

The TACOM-ARDEC's quarterly Climate Survey gauges employee satisfaction, well-being, motivation, communication, and employee involvement in process improvement. TACOM-ARDEC also employs exit interviewing where indicators of systemic demotivators are identified. Through recent automation enhancements in surveying, organization-specific data and feedback to employees can be obtained. The Human Relations Subsystem Owner presents essential human resource data to the Evaluation Center. Through the Quality Management Board and the Motivation Process Action Team, quarterly human resource survey data is analyzed to determine the key factors that affect employee well-being, satisfaction, and motivation. The survey data was benchmarked with Army-wide data for identical survey questions.

Soldier Systems Center Has the Soldiers Meet with Those Who Make the Rations

Pursuing its commitment to its ultimate customer—the soldier—SBCCOM's Soldier Systems Center has arranged for soldiers to meet with those who produce their rations. This field learning concept was set up for the Combat Ration Integrated Product Team, which consists of Meal, Ready To Eat (MRE) manufacturer's representatives, food technologists from the Soldier System Center, and soldiers. The objective is to familiarize ration producers with the challenges and field conditions soldiers experience under realistic battlefield conditions. This innovative approach is intended to foster improvements in combat rations and to open a direct communication channel between the ration producers and their ultimate consumer. The face-to-face meetings allow manufacturers to obtain valuable real-time feedback directly from soldiers on a simulated battlefield as combat rations are being consumed.

This unique, open-ended dialogue gave the contractors feedback from the points of view of supply, distribution, and veterinary personnel as well as consumers. The team gained insight into the soldiers' total experience of the complete Army food service system—garrison feeding, group field feeding of A-Rations, Tray Rations, and MREs. The effort was a resounding success.

The desire for improved MRE quality and variety has given rise to the vegetarian meal pictured here, kosher meals, and a variety of newer meals. (Photo by Staff Sgt. Rick Sforza, 3rd Place Illustrative Category award winner of the 1999 MILPHOG Photographer of the Year Competition.)

Category 6: Process Management

Process management is directing a set of linked activities in order to create a product or a service. Usually, processes involve combinations of people, machines, tools, techniques, and materials in a systematic series of steps or actions. A process may or may not require adherence to a specific sequence of steps.

Effective management of a process involves many factors: process design; in-process checks to prevent or correct errors; linkage to suppliers and partners; cycle time; and evaluation, continuous improvement, and organizational learning. Flexibility, cost reduction, and cycle time reduction are increasingly important in all aspects of process management.

Process management can be considered in terms of three types of processes: product and service processes, support processes, and supplier and partnering processes.

Product and Service Processes

Product and service processes have a concrete end result: the product or service. They involve both design processes and production and delivery processes. Effective management of these processes is critical to trouble-free introduction of new products and services.

Design Processes

Designing a new product or service can involve a variety of design approaches, depending on the nature of the product or service—and on whether the product or service is wholly new or a variant, and on whether major or minor process changes are needed. Factors that might have to be considered include supplier capabilities, environmental impact, manufacturability, maintainability, safety in use, and long-term performance. Changing customer and marketplace requirements and evolving technology may also need to be incorporated into the design process. Effective design must also take into account factors like cycle time and the productivity of production and delivery processes. This might involve detailed mapping and redesign ("reengineering") of manufacturing or service processes.

Design Processes: Success Stories of 1999

Success stories about design processes ranged from far-reaching programs like the development of new products at major laboratories like TACOM-ARDEC, through mid-sized projects like designing medical sets for unit deployment, to smaller initiatives that enhanced the quality of life.

TACOM-ARDEC Uses Integrated Product Teams for Product Design

The Tank-automotive and Armaments Command—Armament Research, Development, and Engineering Center provides total technical support for products through their entire life cycle—from basic research through development, production, and fielding to ultimate disposal. TACOM-ARDEC aligns its processes directly with the product life cycle, to assure seamless process integration.

At the core of its products and services is Integrated Product Teaming. This is a key approach for effectively translating customer requirements into product designs. The Integrated Product Team methodology is thoroughly utilized to improve quality, increase operational performance, and exceed customer expectations as TACOM-ARDEC systematically researches, designs, develops, evaluates, produces, and delivers new or modified products.

TACOM-ARDEC's Tech Base System enables the Center to be proactive: to identify early and then mature the technology needed to meet changing customer and market requirements. TACOM-ARDEC leverages heavily off the state-of-the-art research of academia, its own supplier base, and other government laboratories to obtain technologies for its products. The Center manages its technological risk by rigorous Tech Base review and prioritization, in which its technology partners and customers participate.

TACOM-ARDEC often uses an "Alpha" contracting approach: an innovative method for solicitation and proposal preparation, in which an Integrated Product Team—consisting of key requirements developers plus contracting and contractor personnel—jointly develops the scope of work and other contract requirements. This team approach has consistently reduced cost and avoided requirements that add no value, while eliciting a high level of performance and quality from key suppliers.

The successful execution of the TACOM-ARDEC mission demands that the Center serve as an effective bridge between its supplier base and its real customer, the soldier in the field. TACOM-ARDEC remains fully committed to improving the quality processes of its suppliers through innovative partnering arrangements built on best value source selection, commercial best practices, and continuous improvement initiatives.

TRADOC's Army Distance Learning Program Is Designed To Deliver Training

The U.S. Army Training and Doctrine Command fields the Total Army Distance Learning Program, which delivers training to soldiers at deployed locations as well as home stations.

Eventually, over 95 percent of Army soldiers will have access to distance learning classrooms within 50 miles of their home stations or assigned units.

The program decentralizes traditional "schoolhouse" training by leveraging modern communications technologies to make training accessible. TRADOC plans to equip 383 distance learning classrooms--each with commercial off-the-shelf computers and video teletraining capabilities--at active Army and Army Reserve installations throughout the United States and overseas. The National Guard Bureau is fielding another 373 classrooms to states and territories. Eventually, over 95 percent of Army soldiers will have access to distance learning classrooms within 50 miles of their home stations or assigned units.

Classrooms will be linked through the Defense Information Systems Network to gain access to interactive Web-based training. Portions of some 525 Army courses are being redesigned for distance learning. At least 70 courses are already available. Early program successes included the delivery of readiness, professional development, and sustainment training to soldiers in Bosnia, Macedonia, the Sinai, and Germany, through a combination of video teletraining, CD-ROM, and the Internet.

The Total Army Distance Learning Program promises many benefits. Soldiers and Department of the Army civilians will have greater opportunities to participate in professional development and continuing education pro-

grams. Individual and unit readiness will improve, and quality of life will be enhanced because soldiers can remain at homestation for significant portions of training. "Schoolhouse" course hours, in the courses slated for distance learning redesign, will be 30 percent less, with an accompanying reduction in travel, per diem, and support costs associated with "schoolhouse" training. Soldiers subject to reclassification will receive new skills training directly, and people at geographically separate locations will be able to collaborate in training courses and simulation exercises.

INSCOM's Army Foreign Materiel Program Reaps the Benefits of Good Ideas Developed Elsewhere

The Intelligence and Security Command's Army Foreign Materiel Program exploits weapon systems produced by other countries. Recently the managers of the program have sought to extend its customer base beyond the intelligence community to the research and development communities. A partnering initiative with Program Executive Officers, Program Managers, and Defense laboratories has successfully leveraged the achievements of the Foreign Materiel Program for the benefit of soldiers. TACOM-ARDEC and AMCOM have been participants.

This partnership encourages U.S. weapons developers, program managers, and testers to become more intimately involved in the testing of foreign materiel. It can cut years of system development and improve the capabilities of U.S. systems by identifying thousands of candidate components for reverse engineering.

Improvements that have been reverse-engineered for U.S. systems include low acoustic-signature tracks and road wheels for armored vehicles and weapon sights equipped with filters and eye protection against foreign lasers. Other enhancements include a Heavy Equipment Transport mobility enhancement kit and a foreign-designed auxiliary power unit—now incorporated into the Abrams tank—that allows the vehicle to remain "combat ready" over extended periods without running the main engine and wasting fuel.

On tomorrow's battlefields, American soldiers can be confident in the knowledge that their combat systems have been specifically designed to counter threat capabilities, giving them a decisive edge against any adversary anywhere in the world.

The Foreign Materiel Program partnership not only enables U.S. soldiers to benefit from good ideas developed elsewhere; it also promotes the development of countermeasures that save lives and ensure victory on the battlefield. For instance, the evaluation of a foreign vehicle protection system not only advanced U.S. efforts to develop such a system, but also led to development of defeat mechanisms that enable soldiers to stop enemy combat vehicles immediately.

On tomorrow's battlefields, American soldiers can be confident in the knowledge that their combat systems have been specifically designed to counter threat capabilities, giving them a decisive edge against any adversary anywhere in the world.

Medical Materiel Agency Reengineers Process That Provides What Medics Take to the Field

The U.S. Army Medical Command's Medical Materiel Agency is leading an initiative to reengineer the process that identifies, fields, sustains, and modernizes the medical sets, kits, and outfits used by deployable medical units. The goal is to develop a process that provides deploying medical personnel with medical

supplies and equipment that meet current clinical practice standards and fit the unit's specific mission.

The initiative calls for the development of Mission Defined Unit Assemblages. An Assemblage has two components—a mandatory "core" component and a mission-defined "discretionary" component. Core items are items with long acquisition lead-times, such as X-ray ISO-Shelters; military-unique items, such as the wheeled litter carrier; and items required for training. These items are kept at the unit. Discretionary items are items readily available in the commercial sector; items more effectively managed by a single organization, such as dated materiel; and evolving medical technologies that rapidly become obsolete and non-sustainable. Discretionary items are determined on the basis of specific mission requirements and are not issued to the unit until the unit receives a mission. Thus, a unit can respond to the full range of military medical missions.

The level of fill in each unit can be scaled up or down. The Mission Defined Unit Assemblage concept allows the units most likely to deploy to keep the majority of their assemblages on hand. It also allows late-deploying units, and those least likely to be deployed, to be almost "virtual."

The Medical Materiel Agency is partnering with the Army Medical Department Center and School, the Defense Medical Logistics Standard Support Program Management Office, the Defense Supply Center Philadelphia, the Army Forces Command Surgeon's Office, the Joint Clinical Readiness Advisory Board, and the Medical Research and Materiel Command for this effort. They expect to get the best value for acquisition dollars; minimize sustainment costs; shorten the time required to identify and field medical materiel; implement best business practices for access to medical materiel; and provide deploying medical units with the flexibility they need to meet diverse mission requirements.

SBCCOM Redesigns Military Ration Procurement

SBCCOM and the Natick Soldier Center have redesigned the way military rations are bought, to obtain higher-quality components in less time.

The tool they have used is Performance-Based Contract Requirements, now an integral part of the procurement of combat rations. This streamlined acquisition practice ensures that higher-quality components are procured with a simplified document coordination process. This has considerably reduced the time required to award a contract and has provided significant savings in the procurement of Meals Ready To Eat and other ration items.

Performance-Based Contract Requirements offer great flexibility to the contractor, since the government requires the end product in performance terms without mandating how to achieve it. This process allows a company to use its unique processes, yet ensures the end product will meet the requirements of the Department of Defense Combat Feeding Program. The government no longer specifies particular product formulations which, in the past, had to be replicated in production by suppliers. Food products can and often do differ in formulation from vendor to vendor, but all the products must comply with the Nutritional Standards for Operational Rations set forth in Army Regulation 40-25. Nutritional analysis is critical to enabling the food technologists of

Acquisition reform has been used to resolve a challenge, "do things smarter," and make a difference for SBCCOM's ultimate customer—the soldier.

SBCCOM-Natick Soldier Center's Combat Feeding Program to design recommended menus and ensure rations provide adequate nutrition as mandated by the Office of the Surgeon General. As a result, contractors will now provide computer-generated nutritional analyses for all operational ration items, whether they are procured through military specification or performance contracts.

This highly successful change is a clear example of government and industry working together to provide the warfighter with a highly acceptable, nutritionally complete ration. Acquisition reform has been used to resolve a challenge, "do things smarter," and make a difference for SBCCOM's ultimate customer—the soldier.

Madigan Army Medical Center at Fort Lewis has developed an automated Contingency Stocks Database to provide fast, comprehensive medical supply support to rapid reaction medical forces.

Medical Center at Fort Lewis Designs Materiel Database for Rapid Reaction Medical Forces

Madigan Army Medical Center at Fort Lewis has developed an automated Contingency Stocks Database to provide fast, comprehensive medical supply support to rapid reaction medical forces.

Until now, units required to deploy within a short time (12-18 hours) had to purchase and maintain their deployment loads of perishable medical supplies in their own warehouses or go without. Prime vendors, by contract, have 24 hours to deliver supplies once they are ordered. Rapid reaction forces, such as Special Forces, Rangers, and Division Ready Brigades, often deploy within several hours of notification--without the luxury of 24 hours' advance notice.

Working with the supported units, the medical center's Installation Medical Supply Activity developed a "template,"or master list, of each rapid reaction force's medical supply needs. The Supply Activity could then compare each unit's template of medical supply requirements against the "best commercially available" items stocked in the medical center's Installation Medical Supply Activity warehouse. While the exact items requested on a unit's template might not be available, a generic, volume-based, or therapeutic substitute could be identified in every case. Each unit commander approved a final template; it was then stored in an Access database developed and managed by the Supply Activity and identified as the Contingency Stocks Database. With these improvements, the units no longer have to invest scarce unit Operations and Maintenance funds in large stockpiles of perishable medical supplies.

TRADOC and FORSCOM Reengineer Training Ammunition Use for the 21st Century

TRADOC and FORSCOM have teamed up to reengineer the use of training ammunition in the Army, for both the ammunition managers and the commander or trainer in the field. The new concept, known as Standards in Training Commission (STRAC) XXI, will allow commanders the flexibility to adapt resources—training ammunition and simulation—to the situation of a particular unit. Each weapon system will have a training "strategy" that establishes decision points and alternative training methods, which the commander can use to achieve the standards established by the weapon system proponents, such as Infantry,

Armor, and Artillery. This method of training will incorporate adaptability by constant field validation and feedback. Finally, the integration of live training and virtual, simulation training will utilize training resources to the fullest and allow commanders to design training based on individual, crew, squad, and multi-echelon standards.

Landstuhl Initiates Therapy Classes for Patients with Low Back Pain

At Landstuhl Regional Medical Center, the Occupational Therapy Clinic has developed therapy classes for patients with low back pain.

The Clinic staff realized that numerous patients with low back pain were not coming back for their scheduled one-on-one sessions with a therapist. Deciding it was best to treat this large cluster of patients in a group setting, to use the therapists' time better and decrease the wait between referral and treatment, they obtained teaching tools—including training on ergonomics—and publicized their class through the Wellness Center and Outlying Clinics.

The Occupational Therapy staff presented its first class on Workstation Ergonomics—assessing the patient's work environment—in December 1999. Landstuhl has also implemented a chronic pain management program, through the coordinated efforts of Occupational Therapy, Physical Therapy, and Behavior Psychology.

Production and Delivery Processes

Production and delivery processes are relatively easy to measure and set standards for. They are designed to meet customer, quality, and operational performance requirements; and these requirements and key performance measures (including in-process measures to detect emerging problems) will provide the basis for improvement. Interactions with customers also come into play.

The in-process measurements and customer interactions should take place at the earliest possible points in production and delivery, to minimize problems and costs that may result if performance is not as expected. Corrective action at the source of the problem may be required to restore the performance to its design specifications.

Improvement of the process is also a consideration—not only to achieve better quality from the customer's perspective, but also to attain better financial and operational performance from the organization's perspective. Approaches to process improvement include sharing successful strategies across an organization; process analysis and research, such as process mapping; research and development results; benchmarking; using alternative technology; and using information from customers. These approaches offer a wide range of possibilities, including complete "reengineering" of the process.

Production and Delivery Processes: Success Stories of 1999

Production and delivery successes in 1999 included one project that moved from design process to production and delivery very quickly—the development of INSCOM's first multispectral signals intelligence (SIGINT) collection, analysis, and reporting terminal.

Fort Gordon Military Intelligence Battalion Designs and Fields First Multispectral SIGINT Terminal

The 201st Military Intelligence Battalion, at Fort Gordon, Georgia, has designed, built, and deployed the first SIGINT system capable of collecting, analyzing, and reporting enemy signals from high frequency to super high frequency in a single-vehicle shelter.

Before 1999, the 201st—an element of the 513th Military Intelligence Brigade—was limited to high-frequency collection from heavy,

antiquated systems that could not be easily deployed and did not meet warfighters' intelligence needs. After seeking support from CECOM and INSCOM, soldiers of the 201st designed and built a lighter system that could be more easily deployed—in a single high-mobility, multipurpose wheeled vehicle (HMMWV)—and could better meet commanders' intelligence requirements across the radio frequency spectrum.

The first Collection, Analysis, and Reporting Terminal (CART) system was deployed to Kosovo in August 1999, providing SIGINT support to Commander, Task Force Falcon during Operation Joint Guardian. A second CART system was deployed to Kuwait in September 1999, where it significantly enhanced the intelligence collection efforts of the Commander, U.S. Army Forces, U.S. Central Command.

The 201st is working on a third CART system. Once the third system is completed, the unit will be able to provide commanders a direction finding capability as well. Each CART was built in less than six months for less than one million dollars, an unusually low cost for a valuable innovation.

Other production and delivery successes took place in such areas as analysis, training, developmental testing, logistics, and health care.

CAA Streamlines Its Critical Processes for Better Delivery of Analysis

The Center for Army Analysis, as part of its Total Army Quality approach, has identified twelve critical processes encompassing the Center's major functions. The processes surround the Center's key activities: simulation modeling of force mobilization and deployment and tactical and campaign combat; processes and models to determine requirements for support forces, ammunition, major end items, and casualty replacement; and a political-military gaming process.

Process Action Teams—consisting of representatives of internal and external process suppliers and customers, as well as process experts—monitor each process during the course of executing normal work, to identify potential problem areas and opportunities for process improvement. The Center's Leadership Team—including the Director and all supervisory and advisory personnel—reviews progress annually.

Process Action Team activities have greatly streamlined the twelve processes and improved the purity, fidelity, and timeliness of data inputs. They have added features enabling analysts to see relationships and gain insights not previously discerned and made it possible for the Center to provide real-time, quick response analysis to support Army decision makers. Center analytic output has increased dramatically.

One factor influencing CAA's increased productivity is the use of its local area computer network to simplify and modernize its briefing preparation and report documentation process.

Leveraging the capabilities of standard vendor software packages in a major Document Improvement Project, CAA compiled various formats of Center briefings and reports into standardized templates. Through the computer network, any Center analyst can access the briefing templates and create a briefing simply by filling in the chart templates and adding appropriate annotations. With a simple menu selection, these charts and their annotations can be automatically transformed into a formatted basic report, including cover page, table of contents, lists of figures, tables, and sectioned chapters that include headings and pagination. Unique aspects can be easily incorporated, using standard software menu options.

Once completed, the report is in electronic form for editing, review, and e-mail distribution, both internally and externally. Because it is centrally accessed and controlled, any changes to the standards need to be made only once. The Center currently publishes more than one hundred reports a year and an even greater number of briefings.

Fort Benning Speeds Up Notification of Adverse Training Conditions

Fort Benning routinely conducts more high-risk training than any other installation in the Army. Rapid notification to commanders and directors of adverse conditions that can affect this training—and ultimately the safety of the soldiers being trained—is therefore critical.

Historically, when weather conditions on the installation caused concern about the safe conduct of training, individuals had to call all units and activities. If key commanders and their staff were not in their offices, someone had to try to find them. Because of Fort Benning's size, it could take hours to get the critical information to the appropriate commanders and staff.

Using this system, the notification time for adverse weather has gone from hours to minutes.

The new process for rapid notification is a triad approach, tailored to the specific needs of the situation. The first prong of the triad is a telephone tree that accesses a database of telephone numbers, dials the numbers 23 at a time and plays a specified message when someone answers. The second prong is an alphanumeric paging group that pages specified pagers with an alpha message outlining the reason for the page. The third is a trunked radio net with specific radios set to scan a specific channel to allow two-way communications. The first two prongs of this triad often work in tandem; for example, if the installation weather station issues a weather advisory, the net control station is notified. While the weather station is putting out the advisory on the telephone tree (first prong), the net control station is sending a group page, which notifies key individuals of the weather alert via their pagers. With this system, the notification time for adverse weather has gone from hours to minutes.

Redstone Technical Test Center Develops Paperless Cost Estimating

The Redstone Technical Test Center (RTTC) has developed a paperless cost estimating system for projects coming into the test center. The cost estimates, available to local area network users, enable a better information flow and tracking system.

Earlier, RTTC used the pencil-and-paper method of cost estimating, with each planner having access only to the projects he managed. The new system enables project planners to obtain cost estimates from all cost centers over RTTC's local area network. The system database includes all previous estimations of projects, so the current estimate can be compared to the cost of similar projects. The estimation system includes the estimated cost and all scope changes that required a revision to the cost estimate. This system saves time and enables the estimate to be more accurate.

RTTC Uses Oral Proposals in Test and Evaluation Support Contracts

Redstone Technical Test Center has adopted the use of oral proposals instead of written proposals for the management portion—and in some cases the technical portion—of its acquisition of test and evaluation support services.

Historically, the proposal process has historically taken 12 to 24 months from the time of submission of the package to procurement until point of award. In contrast, RTTC's first Request for Proposal using oral presentations for management and technical aspects went from submission to point of award in less than 6 months. Two actions currently in the procurement process are running on par with the first oral proposal, and point of award should be achieved in less than 6 months. Oral presentations have streamlined the procurement process and significantly reduced the man-hours required.

Another contributor to efficiency has been providing the offerors a listing of anticipated personnel categories and a composite rate, to which offerors add management, labor, other personnel the offeror deems necessary, and applicable overhead and general and administrative costs. This practice, which puts players on a more level playing field, has reduced pricing efforts for both the offerors and the government. One contract has been awarded using the composite rate method, which has been successful in controlling costs.

RTTC Automates Expendable/Durable Register

The Redstone Technical Test Center has developed a database to manage its own register of expendable and durable items. Requested to assume responsibility for this process, the Center has automated the generation of document numbers, and of the register itself for audit and tracking. The database, constructed with off-the-shelf software, is available to people requiring document numbers for the acquisition of expendable or durable items. The system has streamlined the process of getting document numbers and reduced the cycle time, thus reducing procurement lead-time. Personnel no longer need to wait for a faxed response for normal priority requirements, or travel 8-15 miles to process an urgent requirement. Receipt of items is entered into the same database,

Aerial view of Redstone Technical Test Center.

providing complete information for generation of the Expendable/Durable Register for reports and audits.

Aberdeen Test Center Focuses on Certification to International Standards

Aberdeen Test Center has embarked on a focused and vigorous campaign to ensure that its laboratories and facilities will all be certified in accordance with ISO 9000/Guide 25.

ISO 9000 is rapidly becoming the most popular quality standard in the world. ISO is the International Organization for Standardization, established in 1947 to develop common international standards in many areas. Its quality standards are referred to as the "ISO 9000 Standards," applicable to all kinds of organizations in all kinds of areas, from forestry to aerospace. The Guides—like Guide 25—provide additional guidelines that supplement the basic standards. Adopted by thousands of companies in over 100 countries, ISO 9000 seeks to provide a single set of standards that people everywhere will recognize and respect. To ensure these standards, ATC established a Quality Assurance Team and assigned personnel trained in ISO 9000/Guide 25 requirements and procedures for certification. These people had also taken part in certification inspections as part of their learning experience.

In FY 1999, Aberdeen's Gauge Shop was certified to Guide 25 standards. Additional

laboratories are in various stages of preparing for ISO 9000/Guide 25 certification.

Letterkenny Army Depot Improves Sidewinder Missile Repair

Letterkenny Army Depot has improved both the product and the production process for repairing the Guidance and Control Section (GCS) of the Sidewinder missile, part of the Sidewinder's seeker/gyro assembly. The new process greatly reduces the time each Guidance and Control Section spends at the depot, as well as streamlining the flow of work. These improvements make missile handling more efficient and eliminate needless repeated testing.

Under the old method, testing began when the missile arrived at the depot. Letterkenny used the TS-4044 tester, a customer-required "go/no go" tester mandated for Air Force GCS assemblies, as a screening process for incoming and outgoing GCSs. Letterkenny has now revised this process, not only to verify field failures, but also to speed up the repair process by identifying, at induction and screening, what repair the GCS should have. This weeding out has streamlined the flow of GCSs within the shop and reduced unnecessary handling and waiting time.

By using the fast-curing agent, a technician can send the GCS on its way to the next station within 30-45 minutes instead of 24 hours.

A component of the GCS is the piston and servo assembly. The first step of the old method involving this component was to test the unit. Cleaning and lubrication were not completed unless dictated after testing. The majority of the items were tested and then disassembled, cleaned, lubricated, and tested again—so that the GCS was being tested twice for the same condition, once to find the problem and again to verify the problem was fixed. Each of the two tests required 45 minutes per item. Letterkenny requested and received approval from the appropriate project offices to disassemble, clean, and lubricate the items before testing. This initiative resulted in the elimination of needless repeated testing.

Testing a Sidewinder (AIM-9) guidance and control section after overhaul .

When the umbilical base or power supply assembly of the GCS requires a repair, a portion of compound is removed to gain access to the faulty component. After the repair, a silicone potting compound is applied to fill the area where the old potting was removed. The previous repair method used a hardening agent that had to cure for 24 hours. By contacting the manufacturer of these products, employees found that a "fast curing agent" is available that has the basic characteristics of the original compound. By using the fast-curing agent, a technician can send the GCS on its way to the next station within 30-45 minutes instead of 24 hours.

The GCS contains a special housing—called a flask—that needs replacement periodically. A specified type of silicone (room-temperature vulcanized) holds the new flask in place. The fast cure agent has significantly shortened this process too. Within 30-45 minutes, this compound is cured enough to allow removal of the flask from the alignment fixture, so that another batch of flasks can be processed within the hour. Before the depot learned of the new compound, flasks had to cure overnight. This product

improvement has greatly increased the number of flasks replaced.

SBCCOM Redesigns Chemical Agent Detector for Faster Start Time, Greater Reliability

SBCCOM's Chemical Agent Monitor Team has found a way to improve the startup time, reliability, and maintainability of the Chemical Agent Monitor Drift Tube Module.

Startup time for the Chemical Agent Monitor is one of SBCCOM's biggest customer concerns. A design modification that allows repair at the Direct Support maintenance level is expected to improve startup time, as well as making the system more reliable and easier to fix. Currently, the Direct Support maintainer—just above unit-level repair—must remove the Drift Tube Module from the Chemical Agent Monitor and send it to depot-level maintenance—two levels higher—for further repair. This process is costly and time consuming. The new design will allow Direct Support to repair the module while it is still in the monitor.

The redesign is being accomplished through an Operating and Support Cost Reduction program. The module contains a molecular sieve package that is currently replaced at the depot. Through the substitution of a metal sieve package for the current plastic one, the new design allows Direct Support to refill the sieve package in place. After the initial investment to replace the plastic sieve packages with metal ones, the cost of repairing a Chemical Agent Monitor Drift Tube Module will drop from over $500 to less than $50 per repair. The Joint Services have over 14,000 Chemical Agent Monitors in the field.

Fort Lewis Deploys Installation Maintenance Personnel To Support 3rd Brigade

Fort Lewis's Directorate of Logistics Installation Maintenance Division includes a Special Purpose Equipment Section that provides direct support and general support for all combat and construction equipment on Fort Lewis. The Section's Fuel and Electric, Engine Overhaul, and Direct Support Plus shops train and assist soldiers to overhaul the M-1 tank 1500 turbine engine and its modules. They also repair and overhaul alternators, generators, regulators, starters, heaters, fuel pumps, and fuel injectors and repair and overhaul diesel engines varying in size from the 6.2-liter M998 to the 1790-cubic inch, 12-cylinder, air-cooled M88.

Their objective was to diagnose and repair equipment while in the field, rather than send the items to the rear for repairs and operate without them.

From 23 July through 29 August 1999, the Installation Maintenance Division deployed three civilian employees to Yakima Training Center to support the 3rd Brigade. Once at Yakima, these employees worked side by side with the 3rd Brigade while training in a field environment. Their objective was to diagnose and repair equipment while in the field, rather than send the items to the rear for repairs and operate without them.

During this training cycle, the three employees repaired 29 turbine gas engines and 66 other components and end items. Having the employees on site meant that equipment down time was minimal. The equipment was available for training for longer periods; the soldiers received invaluable hands-on training, and evacuation transportation costs were almost nonexistent. The 3rd Brigade absorbed the temporary duty cost, parts cost, and employee overtime costs. Because of the success of this mission, the 3rd Brigade requested four more civilian employees deploy to the National Training Center with them to perform the same mission and training.

MEDDAC at Fort Leonard Wood Reengineers Family Practice Clinic

When patient access, continuity, and enrollment became high priorities with the advent of

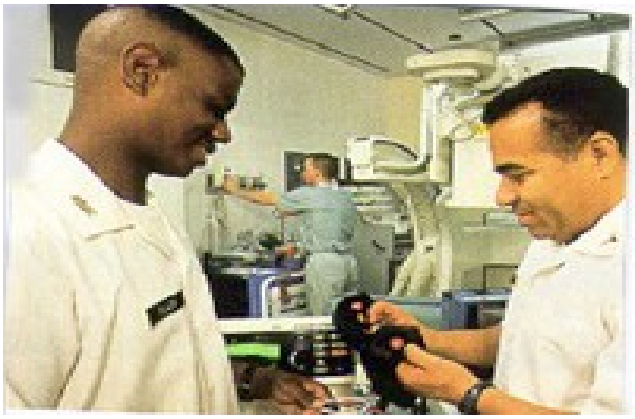
TRICARE, the environment at the Fort Leonard Wood Medical Department Activity's Family Practice Clinic was not conducive to any of these. Bottlenecks formed at vital signs stations; patients had no continuity when their assigned providers were absent; and many providers had to search for chaperones for patients. Providers were struggling to accommodate 19 patients a day.

The staff undertook a thorough reengineering. They began with reviews of the primary care management literature and visits to successful local clinics. This research led to an intensive computer-modeling analysis of the clinic. The study confirmed several issues: that time was wasted when a provider did anything but see patients; that physicians must focus on continuity rather than acute care; and that every provider needed at least one dedicated clinical assistant.

The MEDDAC's Family Practice Clinic reengineering efforts have enabled the clinic to increase the total number of appointments by 26 percent, even though the number of providers has decreased by 4 percent.

MEDDAC at Fort Hood Provides "One-Stop Healthcare Shop"

At Fort Hood, too many patients were going to the Emergency Room when they were not in true emergency situations. The MEDDAC staff realized that, in many cases, this was happening because there was no other alternative for after-hours care.



To improve this process, the MEDDAC reorganized its Ambulatory Care Reception Center into a "One-Stop Healthcare Shop." Professional nursing staff now evaluate healthcare beneficiaries to determine the urgency of their medical needs, then facilitate access to the most appropriate healthcare service, whether it is the Emergency Department, a routine healthcare visit, a preventive healthcare service, or a same-day urgent healthcare appointment. Those patients who truly need emergency care now experience a reduced wait time.

Professional nursing staff now evaluate healthcare beneficiaries to determine the urgency of their medical needs, then facilitate access to the most appropriate healthcare service…

MEDDAC at Fort Hood Improves Patient Outcomes Through Heparin Study

Heparin is a substance, used in surgery and medicine, which slows the clotting of blood. The physicians and nursing staff at the Fort Hood MEDDAC's Critical Care Unit were concerned about a policy that stopped heparin infusion for one hour for patients whose tests seemed to show that blood coagulation was taking a long time. The concern was that the one-hour gap was preventing patients from reaching therapeutic levels of heparin in a timely manner.

The Critical Care Unit nursing staff conducted a study, using a retrospective chart review of 29 patients who had heparin held for one hour versus those who had not. During this review, two questions were asked: what was the average number of laboratory blood draws until the patient reached therapeutic levels, and what was the average length of time required.

The results of the study show that when heparin is stopped for one hour, the average number

of laboratory blood draws taken before the patient reached therapeutic levels was 7.2, and the average length of time before the patient reached these levels was 52 hours. When the heparin infusion was continued, the average number of laboratory blood draws decreased to 4.2, and the average length of time before the patient reached therapeutic levels was reduced to 23.9 hours.

Because of this study, the practice of stopping heparin for one hour was abolished. Patients now experience shortened hospital stays and—more importantly—an improvement in their outcomes.

Support Processes

Support processes are the processes that sustain an organization's design processes, production and delivery processes, and operations. Their characteristics usually are not tailored to the organization's products and services. Many support processes are relatively generic: processes like accounting and finance, facilities management, administration, information management, and public affairs. Some, however, are unique to an organization, and their design requirements depend significantly on the organization's internal requirements.

These essential support processes must be coordinated and integrated to ensure effective linkage and performance. Organizations evaluate them and work to improve performance. Four approaches often used are process analysis and research, benchmarking, use of alternative technologies, and use of information from customers.

In one sense, the difference between a product and service process and a support process is a matter of viewpoint. To medical personnel, for instance, health care is the service they deliver; but to operations personnel, health care is part of the support system.

Support Processes: Success Stories of 1999

Support process successes in 1999 tended to cluster in four areas— innovative use of technology, restructuring for greater effectiveness, adaptive use of existing resources, and more perceptive business practices.

Innovative Use of Technology

Many initiatives involved the application of computers and other technical devices to make processes faster, easier, or otherwise better. Some invoked the concept of the "paperless office"; others improved or bypassed older, more manual processes.

High-Speed Network Gives CAA Greater Productivity—and Less Paper

Information technology advances sustain virtually all the quality and productivity initiatives the Center for Army Analysis has introduced as a reinvention laboratory. The modernization of CAA's computers—from a centralized mainframe environment to a fully distributed client-server system—has been in progress since 1993. Today's system is a comprehensive, high-speed network with linking multicapable desktop workstations having large storage capacity. Standard software gives uniform, compatible support to all CAA personnel for both administration and analysis. Central databases and standard application packages, accessible to all personnel through high-speed communication links, are not only versatile but relatively easy to control and maintain. This system has been the foundation for capabilities that have multiplied quality and productivity severalfold since 1993.

Using standard vendor software and CAA's local area network, technologists developed CAA's information systems to streamline and automate management and administrative tasks that were once manually intensive. Templates for most common forms are stored for easy access. Standardized forms for time use, leave

requests, training requests, employee biographies, and other personnel functions can be electronically accessed, processed, distributed, and stored. Management reports—such as status and progress of the work, weekly activities, and budget—are gathered and accumulated electronically. CAA administrative policies and analysis guidelines are centrally available for access by all personnel.

SBCCOM Develops Innovative Information System To Support Logistics Decisions

Logistics managers at SBCCOM's Integrated Materiel Management Center must make sound decisions on supply management, inventory control, overhaul maintenance, and procurement actions—and until recently, the available information systems were more hindrance than help. Delayed access to the information needed for demand analysis and requirements determination led to increased operating costs.

To resolve this problem, SBCCOM needed to develop a complementary system that could extract data from Army legacy systems and organize it into a comprehensive supply status report. The answer was the Innovative Logistics Decision Support Solution (ILDSS), which incorporates a General Requirements Determination Analysis tool, a Lead Time Analysis tool, a Line of Balance tool, and Command Metrics into an integrated data model. This allows logistics managers to formulate specific, customized queries and gain near-real time supply status.

The Innovative Logistics Decision Support Solution was developed on a compressed schedule and delivered to SBCCOM's Natick Soldier Systems Center in March 1999. Through its integrated data environment, ILDSS enables authorized logistics managers to prioritize programs, conduct online "what if" drills, optimize supply quantities, and define "critical" and "expedite" actions for managed commodities, using any personal computer with Internet access.

While the current version of ILDSS is specifically tailored to the needs of the SBCCOM Integrated Materiel Management Center, the solution is readily modifiable for use at other Army Materiel Command major subordinate commands. The development and implementation of ILDSS offer SBCCOM logistics managers significant access improvements for retrieval of key supply data from Defense Logistics Agency and Department of the Army legacy systems. The pre-formatted supply posture templates and the query capability eliminate the need for resource-intensive Supply Control Studies and the associated licensing, programming, and support requirements. The Command Metrics embedded in ILDSS provide the capability and information to assess SBCCOM Integrated Materiel Management Center demand processing efficiency, timeliness, and budget execution to successfully meet supplied commodity mission needs.

NVESD Becomes "Paperless" Using Multiple Databases

CERDEC's Night Vision/Electronic Sensors Directorate uses many databases in its increased efforts to become "paperless." NVESD has created its own integrated business database system, and users also link to external databases like the Standard Operation and Maintenance Army Research and Development System (Accounting) and the Defense Civilian Payroll System. Users perform all their own data entry and can easily ask questions of the system, thus

avoiding the generation of printed reports and transmission of paper documents and saving the users much time. These databases hold all personnel data (including training data), financial data (including travel data), program data, and security data. Most of these systems also allow users to mail information electronically.

NVESD also uses electronic forms as much as possible—approximately 230 of them. These forms are easily transmitted electronically to anywhere within the organization. All NVESD data is shared within the organization to avoid duplication of effort.

Fort Hood Moves Toward "Paperless" Operation

Ford Hood is moving toward "paperless" operation in several areas: recordkeeping, education services, information management, and contracting.

The Phantom CLERK. Fort Hood now has an electronic library and repository—the Phantom Corps Library of Electronic Recordkeeping, or Phantom CLERK—that contains some 946 Fort Hood and III Corps administrative numbered publications and forms. Phantom CLERK is a reality because Fort Hood partnered with the Defense Automated Printing Service and Xerox. Xerox identified and built a networked platform to store, manage, and distribute Fort Hood documents, using Fort Hood standards and the existing network infrastructure. The Defense Automated Printing Service procured the hardware, software, and related services from Xerox and digitized the forms and publications libraries. Forms are available in a format enabling people to fill them in online and route them electronically or print to a local printer for small quantities.

Phantom CLERK is a reality because Fort Hood partnered with the Defense Automated Printing Service and Xerox.

Phantom CLERK provides Fort Hood soldiers with forms and publications when they need them and where they need them. Additionally it allows Fort Hood to leverage existing network architecture; increase responsiveness to customer requirements; reduce stockroom costs; increase efficiency of forms and publications management; and distribute and print rather than print and distribute.

Education Records on a Floppy. The Education Services Division is also moving toward "paperless" operation. Instead of dozens of filing cabinets packed with thousands of soldier records, a new imaging system allows better record keeping and faster service at the counselor's desktop. Education Services now scans in degree plans, grade slips, and Veterans Administration counseling forms—all the records of a soldier's education while in the Army. The folder and its contents, once they are scanned into the indexed database, are returned to the soldier for his own safekeeping. The new system allows units deployed to Bosnia, for example, to take education records on a floppy instead of inside boxes and boxes and boxes.

Paperless Information Management. Fort Hood's Directorate of Information Management has developed a way to format its high-speed printer output into a user-friendly form and provide user access. Previously, numerous reports had to be printed and the customer would have to come to the directorate to retrieve them. Now customers can see the current monthly reports on their own computers, over the network, and decide if they need to print them at all. Microfiche copies used to be made for storage, but now the information can be saved to compact disk, allowing the customers to view and print historical information easily.

With the proliferation of a local area network, Fort Hood Information Management looked for a way to provide printer output to the

customer's desktop electronically. The major restriction was cost. Fort Hood found a way to reduce the amount of hardcopy print while keeping costs down by using existing software and hardware. The user benefits from the timely "delivery" of data to the desktop, the search capability, and the ability to reduce or eliminate a courier service. The direct savings are approximately $80,000 per year from paper reduction and microfiche elimination. The indirect savings such as power consumption, air conditioning, space reuse, and courier reduction or elimination have not been calculated.

Electronic Contracting. All competitive acquisitions at Fort Hood are now being solicited via Web site. Most have been simplified acquisitions. An exception was the Request for Proposal for Military Skills Enhancement Instruction. One day before its closing date, a firm learned of the solicitation and successfully submitted a proposal on time because of the simplicity of the Web site proposal process. Competition was obtained on a major project that otherwise would have required delay or resulted in lack of competition.

To assist customers, a process action team developed a user-friendly contracting guide. The overall response to the *RX [Prescription] for Contracting* has been overwhelming. It has been made available to customers electronically via the Fort Hood local area network and the acquisition Web site.

Fort Campbell Helps Pioneer "Paperless Contracting"

Fort Campbell—one of FORSCOM's leaders in automation—is one of three Army activities chosen as test sites for "paperless contracting." Requests for proposals and invitations for bids have been available for download off the Fort Campbell Web site for almost 3 years. The site has reduced acquisition lead times as well as contracting labor and material costs.

Based upon "paperless contracting" initiatives and past successes, Fort Campbell was asked to team with Army Materiel Command in FORSCOM's first "single face to industry" interface. This arrangement allows all of Fort Campbell's Electronic Data Interchange requests for quotation to be posted to the AMC Web site. Among the newly fielded Submission Processing Sites, Fort Campbell was the second FORSCOM site to reach initial operating capability. Savings are mostly intangible, but significant to both Fort Campbell and the Army contracting communities and their customers and contractors.

Letterkenny Army Depot Streamlines Customer-Direct Procurements Under $25,000

The Directorate of Contracting at Letterkenny Army Depot streamlined the procurement process to allow the customer to receive products and services faster than by the traditional Local Purchase process. Procedures were put into place that afforded customers the opportunity to submit their requirements under $25,000 (except Property Book items, hazardous material, or Interservice Support Agreement stock) through a paperless system.

Fort Benning Puts Supply Records Online

Employees at Fort Benning's Directorate of Logistics have automated the scanning of supply documents to allow retrieval by any authorized network user.

The new scanning system eliminates the need to retain paper copies of supply documents or to store historical supply actions on microfiche. Also gone is the use of toxic chemicals for developing microfiche. The manpower requirements for document entry remain the same, but now managers and customers can search and find supply records at their own desktops using Adobe Acrobat Reader.

The system currently scans approximately 160,000 documents yearly.

AMCOM Implements Webdesk To Make Internet Administration Easier

The growing number of Web-accessible applications and locally created Web sites has brought its own variety of administrative headaches to AMCOM: the system administration associated with governing local sites, the password burden for functional managers and security officers, the multiplicity of access points for various Web applications. AMCOM has found a way to cut down on the system administration, reduce the password burden, and host all the Web applications within one access point. The environment is called Webdesk, and it has brought to reality the vision of a single logon and password for accessing multiple Web-accessible applications.

Webdesk provides a number of benefits. One involves access and security: a functional user's browser must support certain domestic encryption levels to access the preferred levels of the World Wide Web. Webdesk supports both Netscape and Microsoft Explorer (versions 4.0 or higher). In addition, the single logon lessens the user's burden of having to know a plethora of passwords to access various Web applications.

Webdesk can also be personalized and tailored. A functional user can access pertinent data and tasks via any Web browser, anywhere. The boundaries of what the functional user can access are restricted only by what the individual's "profile" determines. Access layers can be tailored for individual applications, so that a subject matter expert can define various levels of access based on the person's requirements and security level.

Webdesk also provides a Web Library housing several hundred Department of Defense Web links, which can be viewed by category or in alphabetical order.

The reduction in administration means that fewer people are required to support the Webdesk environment. The Webdesk structure allows a subject matter expert to administer a portion of an application; this keeps the expert aware of the demands for the application, which in turn fosters application enhancements.

Medical Center at Fort Lewis Speeds Up Patient Care Transcription

The staff of Madigan Army Medical Center at Fort Lewis realized the task of dictating records of patient care was making heavy demands on their physicians' time. The Patient Administration Division's Transcription Service analyzed the situation and identified specific high-volume procedures, such as cataract extractions and Caesarean sections, that took time to transcribe but varied little in content from physician to physician. The Transcription Service developed a standardized template that is individualized for each procedure.

This increase of 80 percent in productivity within the Patient Administration Division saved the equivalent of one full-time person per year.

This template saved doctors' dictation time and transcribers' transcription time. The doctors' dictating time went from 10-15 minutes to 2 minutes per patient. Transcription went from 110-120 to 660 lines per hour. This increase of 80 percent in productivity within the Patient Administration Division saved the equivalent of one full-time person per year. The Medical Center currently has 57 templates, and they are consistently used. Books of templates are available in the chart room, operating room areas, and each surgical department for convenient reference by the staff.

Yuma Proving Ground Updates Technology for Range Passes

Yuma Proving Ground's Law Enforcement Security Division provides range passes—a

customers, and contractors who access Yuma's range areas. In the past the division used an antiquated and costly system of Polaroid photographs and commercially obtained card stock. Polaroid film, ordered by the case, cost approximately $425 and required refrigeration. Often the film got old and went bad. Even when the film was good, Law Enforcement employees required an average of 7 minutes to make up each pass.

The Law Enforcement Security Division is currently testing commercial off-the-shelf software to produce the passes. This software includes a robust database, which provides an easy-to-use and much less cumbersome way to collect and process data. The completion time for each pass drops to less than a minute.

Fort Gordon Inaugurates Army Courtroom of the Future with Video Teleconferencing

The Staff Judge Advocate's Office at Fort Gordon has installed video teleconferencing capability in its courtroom facility, to provide a timely and effective legal resource that meets the needs of commanders and lawyers.

The installation of computer monitors in the courtroom will allow personnel to view case records, access legal research databases, and view depositions, videotaped crime scenes, and other types of evidence. Through interactive telecommunications, arraignments and pretrial proceedings will be cheaper, safer, less time-consuming, and easier to schedule. Trip expenses for judges and escorts will be eliminated, along with lost production time due to travel. The capability reduces costs, supports mission requirements, and provides a more efficient legal process for all concerned.

CAA Provides Near-Real Time, In-the-Field Decision Support Analysis

The Center for Army Analysis has initiated two separate efforts to provide near real-time analysis support to commanders in the field. The first effort established an analysis augmentation detachment, functioning as an element of the supported command, which provided onsite, real-time warfighting analytical support to the Third U.S. Army at Fort McPherson, Georgia. The detachment was a deployable support cell attached to Third Army headquarters. Consisting of a small contingent of military analysts, it was designed to have stand-alone analysis capability as well as communication access to CAA's extensive analysis, modeling, and simulation capabilities. The team has provided Third Army with a rigorous, near-real time analytical capability to examine issues relating to deployment, warfighting, course of action analysis and comparisons, and air defense and tactical missile simulations. It also performed sustainment modeling, with sufficient analysis to derive support structure and materiel sustainment requirements.

The team has provided Third Army with a rigorous, near-real time analytical capability to examine issues relating to deployment, warfighting, course of action analysis and comparisons, and air defense and tactical missile simulations.

The second effort provides a similar analytic capability to U.S. Forces, Korea. Using laptop computers linked to a portable local area network, visiting CAA analysts have performed deskside, large-scale theater campaign simulations and analyses with 24-hour turnaround time in support of joint warfighting decision makers and theater campaign planners.

SBCCOM Buys Chemical Defense Equipment for "Go to War" Readiness

SBCCOM carries out the "Go to War" readiness program for the Chief of Staff, Army (CSA). As part of the program, it has bought enough chemical defense equipment for 25,000 soldiers.

The "Go to War" program grew out of the 1997 CSA Readiness Review, which identified several problems in Army policies, stockage, and readiness matters associated with individual soldier chemical defense equipment. The program establishes a standardized chemical defense equipment basic load for the individual soldier, providing basic chemical protection needed for initial deployment. "Go to War" also directs SBCCOM to stock, store, issue, and report the basic load items for Continental United States (CONUS) Force Package 2 units—those who must deploy within weeks rather than hours—and many CONUS units who deploy later. The central stockpile concept has the potential to save the Army money by allowing for stock rotation of chemical defense assets.

In 1999, the program's first full year, SBCCOM purchased six full brigade sets of chemical defense equipment, sufficient to equip roughly 25,000 soldiers. Equipment from this stockpile has been used to help equip the 4th Infantry Division and the 10th Mountain Division for deployments. The overall program goal is to provide chemical defense equipment for 173,000 soldiers within seven years. The first year's stockage and reporting goals have been met, and the program has provided materiel for timely deployments.

General Support Center—Europe Introduces Virtual Measuring Technique

The General Support Center–Europe is developing a concept for introducing new technology in the measurement and fitting of U.S. Army Europe soldiers for organizational clothing and individual equipment during their initial processing.

The Body Scanner gathers information about the body surface through a combination of lasers and cameras, displays the scan as a three-dimensional model on a computer…

The new technology is a three-dimensional Body Scanner—an automatic, touchless body measurement and clothing size determiner. The Body Scanner gathers information about the body surface through a combination of lasers and cameras, displays the scan as a three-dimensional model on a computer, and associates the anthropometrical measurements to predetermined Army sizes. This accurate measurement occurs in less than a minute. The data goes to a central warehouse that selects the right sizes and ships the package to a customer issue point for issue directly to the soldier. The objective is to reduce the soldiers' processing time and the cost of inventories and to improve customer satisfaction during first-time fittings.

Restructuring for Greater Effectiveness

Several initiatives required the restructuring of activities to adapt to new circumstances or improve customer service.

Fort Campbell Army Airfield Operation Moves to Readiness Business Center

As part of the Fort Campbell Garrison Reengineering Initiative, the Campbell Army Airfield operation moved from the G3 building to the Readiness Business Center. With the alignment of the airfield operations office and the Installation Transportation Division in the same business center, there has been an improvement in communication, response time, and customer service. Support planning for exercises is now completed 24 hours earlier than before, and support planning for deployment is shorter by approximately four days, because information can be coordinated with all transportation activities at the same time.

AMCOM Gains Letterkenny and Corpus Christi Army Depots in Successful Transition

At the beginning of FY 1999, Corpus Christi and Letterkenny Army Depots transitioned

from the U.S. Army Industrial Operations Command, Rock Island, Illinois, to the operational control of the U.S. Army Aviation and Missile Command (AMCOM), Redstone Arsenal, Alabama.

Early in the transition process, the need became obvious for a centrally located, operationally effective core group to assist the depots. AMCOM's Integrated Material Management Center (IMMC), through its Depot Management Division, designated a Depot Maintenance Army Team to execute fiscal planning and expensing requirements and track total depot performance from a headquarters perspective.

Throughout FY 1999 the team aggressively pursued realignment of the depot budgeting process from Industrial Operations Command to AMCOM and, during the effort, developed a highly successful partnership with both depots.

The Depot Maintenance Army Team developed and implemented effective forecasting and budgeting processes, drawing from established fiscal practices and applying them to the unique financial requirements of the depots. In concert with a similar team at Industrial Operations Command, the team worked diligently to achieve all milestones associated with the transition process. The active outreach of the team members resulted in significant cooperation between the headquarters and the local installations. The transition of the financial process was smooth, with no disruption to depot fiscal requirements or depot reporting to higher headquarters. As systems and practices were refined, the effectiveness of the team increased, resulting in more effective forecasting, fiscal management, and ability to address sudden changes in workload funding and labor hour management. In essence, the team was partnering with the depots.

By July 1999, 168 of the 186 activities involved in the transition had been successfully assimilated into the overall AMCOM community, without obligating additional resources or experiencing program degradation or loss of continuity with the depots. The final 18 transition activities were formally transferred on 1 October 1999, with AMCOM assuming full command and control over Corpus Christi and Letterkenny Army Depots.

Completing the transition ahead of schedule, while making the change transparent to the depot and headquarters customer, was a noteworthy accomplishment. The IMMC has institutionalized the Depot Maintenance Army Team as an integral part of the Business Management Directorate to carry the depots forward into FY 2000.

Fort Campbell Restructures Contracting To Present "One Face to the Customer"

At Fort Campbell, several years of acquisition reform—plus several innovative contracting methods deployed at the Fort—had left the old Standard Installation organizational structure of the Contracting directorate outdated. It could no longer be fully efficient and optimally supportive of the customer. After extensive research and feedback from its workforce and others on the installation, the Directorate of Contracting reorganized into two primary divisions: Construction and Engineering Support and Garrison and Tenant Support.

Construction and Engineering Support serves the Public Works Center and carries over 50 percent of the workload. Garrison and Tenant Support serves the remaining customers and includes Commercial Activity actions and Contingency Contracting. Each division owns its own major processes and has its own procurement clerical support. Teams, with a mix of acquisition and administrative personnel, are responsible for cradle to grave management of acquisitions. The Office of the Director provides analysts, computers, and credit card support to both divisions.

Restructuring had several immediate benefits.

Presenting "one face to the customer"—a dedicated team of individuals handling all of their contracting needs—greatly pleased the directorate's customers. The new structure allowed acquisition and administrative personnel to communicate clearly on a project and enhanced their learning from one another. A single manager or supervisor became responsible for the life cycle of an acquisition. Teams could set and focus on common goals. Annual workload peaks became more level. Customer satisfaction--along with new acquisition tools like master agreements--minimized outsourcing and saved installation dollars.

Fort Benning Decentralizes Heating To Save Energy and Dollars

At Fort Benning the hot water and heating, as well as steam for cooking, used to come from central energy plants that supplied facilities postwide. But in a review of energy consumption and maintenance costs, Fort Benning planners concluded that providing these services through a large distribution system was inefficient. The standby and distribution energy losses approached the amount of energy actually used within the facilities.

With the decentralization 60 percent complete, the post has already seen a 25 percent drop in natural gas consumption.

The Fort Benning leadership chose to install new, high-efficiency low nitrous oxide boilers in each of some 120 buildings, at a cost of $13.6 million. Eight of the ten personnel who manned the older boiler plants stayed on to maintain the new systems; the other two moved to vacant positions elsewhere.

With the decentralization 60 percent complete, the post has already seen a 25 percent drop in natural gas consumption. Fort Benning expects to trim $2.2 million annually from its gas bill; maintenance costs will also substantially decrease. Furthermore, the post will realize a reduction of almost 50 percent in carbon dioxide emissions and over 75 percent in nitrous oxide emissions.

Fort Sam Houston Realigns Key Activities for Greater Efficiency

At Fort Sam Houston, the leadership knew that resource reductions were coming. In June 1998 a Garrison Restructure Tiger Team formed to study the Garrison; its goal was to find the best organizational framework to meet current and future customer requirements and accommodate known and anticipated reductions. The following month, the team assured Congress that Fort Sam Houston would undertake a review of all base operations activities, under the provisions of Office of Management and Budget Circular A-76, to determine the cost effectiveness of the in-house work force.

The review focused on the question of competitiveness: in areas where garrison activities were similar to commercial activities, was it better to perform the activities in-house or outsource them? The team needed to devise the best possible organizational structure for the work that needed to be done—a management plan describing a Most Efficient Organization and how it would operate. The alternatives were to achieve a "lean and mean" Most Effective Organization or "go contract."

The Tiger Team used an affinity diagram technique to capture all core functions and then aligned them with the Garrison's key processes. The structure they put in place had five Key Business Centers: Readiness and Logistics, Public Works, Information Technology, Human Resource, and Community Activities.

This new structure will provide the Fort Sam Houston Garrison the greatest flexibility in managing continued resource constraints while meeting its customer requirements. It will also posture the organization well in the

development of the Most Efficient Organization as required in the A-76 process. The Most Efficient Organization must be implemented or a service contract in place not later than October 2002. The key measure of success is the cost savings realized from this competition.

Adaptive Use of Existing Resources

The use of existing resources to perform new tasks was another avenue for improving support processes.

Letterkenny Finds New Ways To Repair Tactical Missiles and Salvage Parts

Letterkenny Army Depot's Tactical Missiles Division performs depot-level repair on 19 missile systems for all four services. In 1999, it developed new methods for repairing and salvaging unit parts.

The Inertial Sensor Assembly unit of the Phoenix long-range air-to air missile, which Letterkenny repairs for the Navy, passed all functional tests of the Inertial Sensor Assembly Applications Program except the heater test of the Guidance Section Application Program. Letterkenny salvaged heaters from otherwise non-functional Inertial Sensor Assembly units and used them to replace the defective heaters. Previously these units, which cost $48,605 each, could not be repaired. They cost $4,800 to repair. First-year savings from this new repair method are $243,025.

Mechanics now reconfigure the obsolete 9L parts to use in production of the current AIM-9M missile.

Letterkenny also salvaged obsolete parts from AIM-9L Sidewinder air-to-air missiles. The AIM-9L is now obsolete, and the assets were scheduled for destruction in the AIM-9L Demilitarization Program. Mechanics now reconfigure the obsolete 9L parts to use in production of the current AIM-9M missile. This creative use of obsolete parts returned first-year validated savings of $342,824.

Fort Hood Now Repairs Printed Circuits for Range Targets

At Fort Hood, the silhouette targets on the training ranges "pop up" because of some 9,600 target mechanisms. Until recently, the printed circuit cards that make the target mechanisms work were classified as non-repairable by the wholesale supply system. Fort Hood's Range Division and Directorate of Logistics set up a pilot program to repair the circuit cards so they would not have to purchase replacements. The savings to Fort Hood in FY 1998 alone were over $240,000.

More Perceptive Business Practices

Implementation of more perceptive business practices also characterized successful initiatives in support process improvement. Some actually involved new methods; others were the result of seeing past what had "always been done" to cut through outdated bureaucracy.

Fort Lewis Implements Master Agreements To Purchase Construction Services

Fort Lewis adopted and improved upon a process for establishing Master Agreements to purchase construction services and use the International Merchant Purchase Authority Card (IMPAC) for payment.

A Master Agreement is a structured contract agreement that takes in a number of mid-size projects, providing many benefits of "traditional" contracting but requiring less time. The International Merchant Purchase Authority Card is a debit card used in government purchasing.

The use of Master Agreements gives customers yet another tool to use in expeditious and cost-effective contracts for actions between $2,000

and $20,000 (less than $25,000 to allow some flexibility if the contract needed to be modified).

The benefits are numerous: accelerated solicitation time; price advantage gained by competitive bidding; and structured agreements that include insurance protection and liquidated damages not available for micropurchases done with IMPAC. The customer's temptation to "split" requirements into micropurchases to avoid lengthy traditional contracting methods is lessened, while opportunities for small business are enhanced.

Fort Lewis continues to streamline the process and to expand the database of contractors to increase competition. Savings are primarily in terms of timeliness of contract award and customer satisfaction.

FORSCOM Awards Task Order Contracts for Construction at Fort Campbell

At Fort Campbell, contractors had been asking for a contracting vehicle that would reduce both their preparation and design time and contracting acquisition leadtime. To meet their needs, FORSCOM awarded three Task Order Contracts for construction, greatly reducing the lead time compared to traditional solicitation methods.

In a Task Order Contract, the award can take place quickly because the project is structured in increments, and the money is paid out in increments. The vision in Task Order Contracting is that contractor and government personnel work together to ensure the installation receives required construction and engineering services that are better, faster, and cheaper.

Since the contracts are already awarded, competition between the three awardees can be quickly accomplished and delivery orders placed. The primary benefits are timeliness and customer satisfaction. Customers are pleased with the Task Order Contract as a vehicle. Significant cost savings for Fort Campbell and FORSCOM are also realized.

19th TAACOM Streamlines Building Materials Purchasing

At Yongsan, the 19th TAACOM Directorate of Public Works had customarily bought large quantities of building materials and supplies and stored them in warehouses until they were needed. The Directorate purchased these supplies through the Standard Army Retail Supply System, Supply Points, and the Stock Fund at the 6th Support Center—a process that slowed delivery time.

To speed delivery, the Directorate of Public Works set up an IMPAC Blanket Purchase Agreement to purchase smaller quantities and recurring items from local vendors for "just in time" delivery. For items not locally available, the Directorate gained approval to test a direct purchase system. Operations and Maintenance-funded requisitions now go to a wholesale supply source. This initiative saved $600,000 in costs of supplies and unnecessary warehouse storage. Delivery time was cut by one-half, and vendors are paid in a timelier manner.

Fort Sam Houston Revitalizes Its Management of Interservice Support

The U.S. Army Garrison at Fort Sam Houston provides products and services to a number of installation tenants and off-post activities. Recently Fort Sam Houston contracted with the consulting firm KPMG to study the existing process by which it was reimbursed for this support. The goal was to improve the management of the process in order to meet customers' requirements and comply with Army reimbursement policy.

Out of this study emerged a five-step process for managing reimbursements documented in Interservice Support Agreements with Fort Sam Houston's customers. The first step is to establish standard levels of service. Then the incremental costs must be developed. The

agreements are then negotiated and finalized. After the support is provided, the final step is invoicing and collection.

All customer support requirements are documented in the Support Agreement Management System database, which produces the agreement complete with a funding annex detailing costs for services. All customers desiring services that are above the established standard levels will reimburse the U.S. Army Garrison based on established incremental costs. The costs will be reviewed annually and adjusted to reflect increases or decreases. Customers will be invoiced monthly or quarterly, as appropriate, for the services received. This initiative will ensure the equitable distribution of base operations dollars among Fort Sam Houston's customer organizations. In addition, it provides an incentive for customers to cut costs by revalidating their requirements and eliminating any support they no longer require.

Fort McPherson Seizes Opportunity To Create "One Stop" In- and Outprocessing

Until recently, soldiers assigned to Fort McPherson or Fort Gillem took an average of ten days to either in- or outprocess, spending much of that time on the road between the two installations. Customer service activities were spread over both posts, which are approximately 20 miles apart.

Construction of new barracks at Fort McPherson provided a perfect opportunity to renovate the old barracks into administrative space. The facilities were centrally located and ideally suited for consolidating all in- and outprocessing activities within a 150-foot radius.

A Process Action Team reviewed the processes involved during in- and outprocessing. The team consisted of members from all the agencies traditionally involved in military and civilian personnel processing, as well as suppliers and customers. Space for several of the primary activities was available, but staffing was a major concern: creation of a "one stop" processing facility must not increase staffing requirements. The team reviewed individual job descriptions, with consideration towards redesign.

By diagramming the workflow, they recognized redundancies within the various processing activities. Actions were being processed serially, with time lapses. By collocating major activities and redesigning the workflow, they could eliminate 3-5 days from the process. The Installation Management Office found that with the same number of staff, they could facilitate the personnel processing—both military and civilian—through electronic techniques. A contract has been awarded to develop the necessary software, such as electronic folders that can be processed simultaneously.

Processing is expected to take one day rather than ten. Fort McPherson and Fort Gillem tenants and activities will gain approximately $2.5 million dollars in deferred labor costs and productivity time through the process improvement.

Landstuhl Regional Medical Center Uses "Concierge" Service To Reduce Lost Duty Time

Military patients airlifted from Landstuhl Regional Medical Center—either to another hospital within Germany or back to the United States—were experiencing an average of six days lost duty time. LRMC established a team to find out why this was happening and reduce the time loss.

The team flowcharted the processes involved in first referring patients for aeromedical evacuation and then airlifting them out of the community or country. The primary goals were to connect these processes linking LRMC, the Europe Regional Medical Command, Deployed Operating Posts, and Walter Reed Army

Medical Center and to benchmark with the Referral Coordination Service at Walter Reed. The LRMC team made recommendations to implement a "concierge" service, in which someone other than the patient was responsible for attending to all the details of connectivity, both practical and administrative. A 90-day study indicated that the "concierge" service reduced time lost per patient from six to four days. The team also published standard operating procedures, developed a trifold explaining the new service, and established a Referral Coordination Service link on the LRMC website.

19th TAACOM Reinvents Housing Referral Process at Yongsan

Until recently, when a service member or civilian employee arrived at Yongsan and went to the Housing Office for information about off-post quarters, he or she received a list of six preferred real estate offices. Few referrals were maintained in the Housing Office, and there were no open listings for review. The limited number of realtors meant there was little competition among realtors and no market competition to keep rents down.

Service members had to find housing within 30 days, so the situation had some urgency. They could not assume full-time duties until they found housing, and the search took an average of 23 days. Also, they were being cheated. The realtors knew the Overseas Housing Allowance amounts for each grade level and colluded with the landlords to charge rent accordingly—based on ability to pay rather than fair market value. Junior personnel were discriminated against because their allowances were not large, and military personnel were charged about twice what a Korean national would pay. The average rent was $1,962.

Another complication was that existing contracts required the service member to pay advance rent for the entire period of the rental contract. This meant the U.S. government had to pay the advance rent through the Overseas Housing Allowance—as well as Temporary Lodging Allowance expenses while the search was in progress. In many instances, service members had to depart before the lease expired, and obtaining refunds was difficult in the worsening Korean economy. This caused both hardship to service members if they did not apply for forgiveness of the debt and a monetary loss to the U.S. government.

The 19th TAACOM Housing Division decided this had to change, and a new process went into effect. Now service members must visit the Housing Office within 48 hours of arrival to be briefed on housing options. They view a bulletin board with about 200 listings of housing from 25 real estate offices, including information on size and prices in Korean *won*. Service members must aggressively seek housing and cease receiving a Temporary Lodging Allowance if they turn down housing for reasons other than health or safety. The average search time has been reduced from 23 days to 11 days.

The Housing Division now requires fair pricing. Advanced rental payment contracts are no longer allowed, so contracts provide for monthly rent. The housing office also reviews all rental contracts and approves them only if they reflect fair market value. About 960 contracts a year are approved, and typical monthly rent is $1,469. With temporary lodging costs about $150 a day, locating housing in a more timely fashion (with 12 days saved) equates to 31.5 man-years times $41,680, the average cost of maintaining an E-6 service member. Total savings are $8,720,280.

Yuma Proving Ground Manages Hazardous Materials "Cradle to Grave"

Yuma Proving Ground has opened an installation Hazardous Materials facility incorporating the business practices of a self-service store while retaining all the capabilities of the Hazardous Substance Management System. This store provides for "cradle to grave" tracking of

hazardous materials in conjunction with centralized purchasing, distribution, and disposal. This initiative removes from individual users the burden of purchasing, reporting, and tracking hazardous materials. It also centralizes these processes at a single point. The benefits include cost savings, reduced quantities of hazardous materials on hand, and reduction of waste through free-issue reutilization. When fully implemented, this store will also greatly reduce the labor involved in meeting environmental reporting requirements.

19th TAACOM Improves Supply and Maintenance Operations

The 19th Theater Army Area Command improved its supply and maintenance operations in several ways.

Outsourcing Self-Service Supply. The 19th TAACOM has been operating five retail stores and a General Support-level Supply Support Activity to provide Self-Service Supply Center supplies to customers in Korea. Other major commands have discontinued Self-Service Supply operations and rely upon General Services Administration marts or commercial vendors to obtain office supplies and other common expendable items. The 19th TAACOM is negotiating a reinvention partnership with the Army-Air Force Exchange Service (AAFES) to provide Self-Service Supply items in Korea. This initiative offers potential savings of 53 personnel spaces, $1.5 million in payroll cost, $900,000 in Operations and Maintenance inventory investment, and $2.2 million in other inventory. It also frees up General Support warehouse space that can be used to store other critical items. Self-Service Supply operations will be transitioned to AAFES management.

Buying Food Commercially. Subsistence Prime Vendor (SPV), a better business practice mandated by the Office of the Secretary of Defense, commercializes subsistence operations in the Department of Defense. Implemented in Korea in late 1999, it provides direct vendor delivery of rations to the dining facilities. SPV offers potential savings of 61 personnel spaces, $2.1 million in payroll cost, and $11 million in inventory investment. More importantly, SPV provides the troops a wide selection of brand name items and fresher products.

Reduced Shipping Time by Air. Shipping time by air from the continental United States averaged 15.8 days in late 1998, much less than the Army objective of 28 days or less. Through the first 11 months of 1999, shipping time averaged 13.9 days. Over the past four years the 19th TAACOM has achieved a 40 percent reduction in shipping time for repair parts and other air-eligible items of supply. Shortened resupply times allow the Command to stock less product, thus reducing its inventory investment. More significantly, it means that customers are receiving their supplies faster, which means improved support and enhanced readiness.

Over the past four years the 19th TAACOM has achieved a 40 percent reduction in shipping time for repair parts and other air-eligible items of supply.

Reduced Shipping Time In-Country. The 19th TAACOM Standard Army Retail Supply System shipping time average for October 1998 was 16 days. The Command steadily improved its shipping and receiving processes throughout the year, and its average shipping time for the month of August 1999 was 10.7 days. This represents a 33 percent reduction in in-country shipping time during the year. Certain changes to the organization's contract delivery service, implemented in January 2000, will produce even greater transit time savings in the coming year. Reduced shipping time means the 19th TAACOM's customers are receiving needed and

available in-country supplies in a shorter time—and that equates to improved readiness.

Local Repair. Local repair of major assemblies and components is cheaper than buying replacement items from the wholesale system. Because the labor rate in Korea is lower than in the United States, the 19th TAACOM can offer customers more credit for unserviceable returns and thus pass the savings down to the user. Also, local repair enables the Command to avoid the surcharges associated with wholesale repaired items. Depending on the commodity, the 19th TAACOM saves 12-34 percent of the acquisition price through local repair. During FY 1999, aggressive repair programs garnered cost avoidance savings of over $31 million. The savings accrued to customers' Operating Tempo training accounts. Local repair programs directly contribute to maintaining high equipment readiness and provide a critical capability to support contingency operations.

Faster Repair for Major End Items. The Materiel Support Center-Korea has achieved great success in implementing Velocity Management process improvements to drive down repair cycle time for scheduled and unscheduled General Support-level maintenance of major end items of equipment. Since FY 1997, the Center has reduced average repair time for scheduled repairs by 44 percent, and unscheduled maintenance time by 39 percent. Reduced repair time means that critical equipment is being put back in service faster—and that contributes directly to improved combat readiness of theater forces.

Supplier and Partnering Processes

Supplier and partnering processes are the processes through which an organization obtains products or services from other organizations—public or private—or from other units of its parent organization. Materials and components of all kinds, as well as services such as transportation, health care, and warranty repairs, may come from suppliers and partners.

Suppliers' and partners' goods and services may be used at any stage in the design, production, delivery, and use of the organization's own products and services, and they may be critical to mission success. Consequently, the organization must manage these processes—design, implement, operate, evaluate, and improve them. Performance requirements and associated measures are the principal factors the organization uses in making purchases. It also provides its suppliers and partners with assistance and incentives, which contribute to improvements in their performance and its own.

As organizations recognize the potential of strategic use of suppliers and the establishment of partnering relationships, they are using electronic data and information exchange to foster new modes of communication and new relationships that can support high performance. Actions that can improve the performance of both parties may include using feedback from suppliers and internal customers to improve procurement and supplier management; joint planning; rapid information and data exchanges; use of benchmarking and comparisons; customer-supplier teams; training; long-term agreements; and incentives and recognition.

Supplier and Partnering Processes: Success Stories of 1999

Successes in supplier and partnering processes included research and development relationships with the private sector, joint projects, and relationships with local government and communities.

CERDEC Encourages Research Participation

CERDEC believes that Cooperative Research and Development Agreements can be used to empower employees by letting them participate

in research and development without going through the normal lengthy channels of procurement, as well as to provide a service to the non-federal partner in an uncommon relationship. This mechanism saves time and money and can be approved with little effort. It forms a legal binding agreement between partners based on mutual trust and interest in research areas. The Night Vision/Electronic Sensors Directorate currently has 13 Cooperative Research and Development Agreements in progress and another five in negotiation.

NVESD Encourages Joint Research in the Public and Private Sectors

CERDEC's Night Vision/Electronic Sensors Directorate has implemented several initiatives to encourage private and public industry to participate in NVESD's research.

Cooperative Research and Development Agreements allow private and public sectors to contribute funds, personnel, and equipment; in return, the government is able to contribute facilities, personnel, and expertise to conduct specific research that is consistent with the mission.

Another such initiative is Independent Research and Development, a sponsored program that encourages contractors to pursue independent research and development projects that are of potential interest to the Defense Department.

The Small Business Innovative Research program is designed to stimulate technological innovation among small businesses while providing new, cost-effective technical solutions to challenging problems.

The Small Business Technology Transfer program is different from Small Business Innovative Research in that small businesses team up with research institutions to find solutions.

The Dual-Use Science and Technology program is designed to transfer technology that has both military utility and sufficient potential to support a viable commercial industrial base.

Patent Licensing Agreements allow a license by the patent owner to be granted to a licensee to practice the patent invention in return for some valuable consideration.

The Test Services Agreement allows the private sector to use government test facilities, ranges, and labs by reimbursing the government for lab use.

NVESD has also implemented a cost-shared, flexible agreement called Other Transaction, which is not a contract but serves various legal purposes.

CERDEC's Space and Terrestrial Communications Leverages from Commercial Products

A major initiative of CERDEC's Space and Terrestrial Communications Directorate (S&TCD) has been to evaluate and leverage from many commercial products that can potentially be integrated into the military communications environment.

S&TCD has been able to capitalize on industry's commitment through the Dual-Use Science and Technology Program, leveraging millions of dollars in funding from private industry toward key programs. This support represents approximately 10 percent additional funding for the directorate's Technology Base programs.

S&TCD also partnered with Sarnoff Research, Bellcore, and Lucent Technologies on the Wireless Internetworking Testbed (WIT). The WIT is a unique industry/government digital wireless communication and video testbed, that provides an interoperable environment for the validation of new technologies, services, products, and standards that impact global communications. Through its partnership with industry in the WIT effort, S&TCD is able to evaluate many commercial products for potential inte-

gration into the military communications environment.

S&TCD has also been given the lead to develop the communications architecture for the Army of the future—the Army After Next. Toward that end, S&TCD has sought the involvement of key leaders in the telecommunications industry through periodic "think tank" sessions. Industry representatives present their personal and corporate visions of the future and their estimate of the capabilities that might be available to the Army in 2025. All of the individuals continue to be involved directly or as "virtual" panelists.

S&TCD continually monitors the commercial market and participates (directly or indirectly) in selected commercial standards-setting bodies. The Army's approach is to adopt whatever commercial technology it can, adapt commercial technology when it cannot use it directly, and develop technology in concert with other services and government agencies when there is no commercial technology that can be cost-effectively adopted or adapted to meet military operational needs.

Redstone Benchmarks with Daimler-Chrysler

Redstone Technical Test Center (RTTC) conducted benchmarking sessions with personnel of the Daimler-Chrysler Scientific Labs and Proving Grounds, located in Auburn Hills, Michigan. Redstone observers saw that automotive design, development, and testing has been concentrated at the Daimler-Chrysler Tech Center and that this had resulted in a significant reduction in cycle time. Daimler-Chrysler had reduced a concept's "time to market" from five to three years.

The advantage RTTC would have if it co-located with the Project Managers, its customers, is reinforced by this time reduction and by the fact that Daimler-Chrysler is now introducing two new products a year, instead of one every two years. Daimler-Chrysler is exploring the benefits of implementing RTTC's test manager concept as a means of providing comprehensive, timely, and complete development information to the decision makers. Continuity of oversight through all phases of testing--made possible by employing a test manager--reduces the time required to complete a test program.

ARL Develops a Virtual Laboratory

The Army Research Laboratory is now in the fourth year of a revolutionary process for collaborating with the private sector to do more with less. The Federated Laboratory—or FedLab—is a virtual, geographically distributed organization one-third again as large as the actual ARL. It was formed using cooperative agreements with consortia of industrial and academic research organizations. The requirement from the Chief of Staff, Army was for ARL to develop certain technologies in which the private sector had an unquestioned lead and competence, but for which the Army had a strong requirement. Rather than just putting the work out on contract and thereby losing touch with the technologies, ARL used cooperative agreements to form partnerships with three consortia comprising thirty organizations.

Through these arrangements, ARL is able to work intimately with its partners to jointly plan, execute, and report on the work accomplished. This enables ARL to remain current on the technology developed, thus easing the transition of knowledge from research into development.

Work done under the FedLab concept is not a separate program, but an integral part of ARL in-house work, planned for and reviewed as such. To enhance the spirit of oneness, a requirement placed on ARL's partners is to enter into long-term personnel exchanges with ARL, so that the partners have members of their technical staff located in ARL facilities, while some ARL staff members are assigned to work in the partners' labs.

As the program approaches its fifth and final year, it has been judged to be immensely successful, a "win-win" for all concerned. Based on lessons learned with this first five-year program, ARL is planning to improve and expand the FedLab concept by creating the Collaborative Alliances in Technology program. Five new alliances will be established, which will comprise consortia of private sector organizations similar to those under FedLab, partnered with ARL and other government organizations. This inclusion of other service and federal R&D organizations will enlarge the scientific resources to be leveraged by all partners, as well as facilitate the transitioning of the technology generated into systems development programs within both the Army and any other participating agencies. Another new feature will be the coupling of a task order contract to the cooperative agreement instrument upon which the consortia are based. These contracts will also enhance the capability to transition the research products of the cooperative agreements. The five new alliances will be Advanced Sensors, Advanced Decision Architectures, Robotics, Communications and Networks, and Power and Energy.

AFMIC, USACHPPM, and Johns Hopkins University Will Build Environmental Health Risks Database

A partnership among three agencies—the Armed Forces Medical Intelligence Center (AFMIC), the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), and Johns Hopkins University—aims at developing a three-tiered approach to assessing the environmental health risks faced by deploying U.S. forces.

The methodology will evaluate physical as well as toxicological hazards. The first tier will identify and characterize potentially catastrophic or acutely hazardous risks that may jeopardize operational success. The second tier will describe delayed health risks, environmental transport pathways and fate, and persistent pollutants. The third tier will explore the complex relationships along the continuum from source of hazard to potential health outcome.

This information, when coupled with data on levels of pollutants or contaminants in environmental media, can help to better define exposure risks and deployment medicine priorities.

Medical Command Implements New E-Mail System

In late 1997 the U.S. Army Medical Department (AMEDD) undertook a difficult and demanding effort to convert the AMEDD corporate, world-

wide e-mail system from an overstressed Lotus cc:Mail system to a new infrastructure based on Windows NT and Microsoft Exchange. Headed by a Project Director from the U.S. Army Medical Information Systems and Services Agency (USAMISSA), this multidisciplinary team of government and contractor personnel accomplished this task under budget and ahead of schedule. Using a tiered implementation

approach in consonance with the ultimate support structure, technical team leads took on regions of responsibility and oversaw all technical activities within their regions. Reporting to the technical control center at USAMISSA in San Antonio, these team leads were able to ensure standardized implementations across AMEDD. Managed as an enterprise system, the new AMEDD e-mail network functions well under centralized management and is providing an effective backbone for new collaborative capabilities, which are increasing the productivity of personnel across the enterprise.

Madigan Army Medical Center at Fort Lewis Converts to Net-Driven Office Supply Process

The Madigan Army Medical Center at Fort Lewis has converted from a manual, document-driven system of acquiring, storing, and distributing office supplies to an Internet-driven system.

Previously, most of the Center's office supplies were centrally acquired through local purchase contracting and credit card buys, stocked in a warehouse area, and provided to customers upon request by a small staff of materiel handlers. The rest of the supplies were obtained directly by customer activities, using their offices' government credit cards. Purchases were often made after hours of catalog research and frequent trips to off-post office supply stores. Both processes needlessly diverted personnel from their primary missions of patient treatment and healthcare support.

To improve this process, Madigan Army Medical Center selected Corporate Express as its office supply vendor from a multi-line General Services Administration (GSA) contract. Corporate Express operates an Internet-based system with a comprehensive electronic catalog, electronic order and verification procedures, and next-day delivery of supplies. The prices offered by Corporate Express are at or below GSA pricing and nearly always beat local vendor prices. Providing this electronic office supply service relieves hospital personnel of the need to research manual catalogs, make multiple telephone calls, and visit off-post supply sources. Additionally, the Medical Center Logistics Division was able to entirely eliminate its office supply storage and distribution operation.

This Internet-driven system has been in place for four months; however, data is not yet available to document raw product savings from the purchase of office supplies through the Internet-based system. A savings of 5-10 percent is anticipated (approximately $30,000 annually). Personnel who previously acquired, stored, and distributed these supplies have been diverted to other, more cost-effective duties.

Fort Bragg Implements Energy Savings Performance Contract with Honeywell

Fort Bragg and its Energy Savings Performance Contract partner Honeywell began implementing a comprehensive energy-efficiency program in mid-1997. At the time, Fort Bragg's energy costs were more than $32 million a year. The partners developed a long-term energy plan that incorporates both supply side—"before the meter"—and demand side—"after the meter"—opportunities. The Energy Savings Performance Contract became the vehicle Fort Bragg would use to achieve the energy savings mandated by the Energy Policy and Conservation Act.

Initially, there was some skepticism at Fort Bragg on the viability of the Energy Savings Performance Contract. But since beginning the program, Fort Bragg has awarded ten projects with a value over $16 million. When completed, they will generate energy worth over $2.6 million annually. Another beneficial aspect is that Fort Bragg is converting many oil-fired

systems to natural gas, which reduces the post's impact on the environment.

Forty-nine potential projects have been identified, and ten more are in the final stages of development. The results achieved and the positive reactions from the people involved and those who are benefiting have created a situation in which Fort Bragg personnel are now competing to see whose area will show results. Honeywell's approach is enabling the post to act like a commercial venture. Projects are completed quickly, and the equipment being installed is the best available. Honeywell is responsible for the equipment for the period of the program, so it is more cost-effective for them to utilize the best equipment available, along with an aggressive preventive maintenance program. As a result, Fort Bragg is extending each project to the maximum time and reinvesting as much of the savings as possible into the program. As more and more efficiencies become a reality, the post should attain flexibility in funds to address other pressing issues in the infrastructure.

Another benefit of the contract—and part of the long-term strategy for Fort Bragg—is the development of a Postwide Energy Center. This Center will make it possible to operate, monitor, and troubleshoot the performance of the major energy centers and 6,000 buildings throughout Fort Bragg from a central location.

The results demonstrate that Federal installations like Fort Bragg can implement aggressive cost and energy savings strategies through partnerships with providers.

Fort Benning Uses Energy Savings Performance Contract To Reduce Consumption

When Fort Benning reviewed the process of energy goal reduction and the funding for energy projects, the installation found that to meet the presidentially mandated energy goal reductions, a funding source outside the normal Army programs had to be found. An Energy Savings Performance Contract would allow Fort Benning to work with a pre-approved energy service company to reduce energy consumption on post. The company, DukeSolutions, provides the capital investment, design, construction, and maintenance for new energy-efficient products and services. The generated savings are used to pay back DukeSolutions over a period of years.

Fort Benning has completed two task orders in which DukeSolutions replaced inefficient lighting with $7.7 million worth of new, energy-efficient T-8 lighting. The project will save approximately $770,000 per year, to be verified by actual electric usage readings. DukeSolutions invested its money, and the installation will pay for the new lighting with the interest over a period of 13 years.

Fort Benning and DukeSolutions are looking at additional projects: lighting, chiller replacement, an anaerobic digester, and ground-source heat pumps.

Fort Riley Partners with Kansas Gas Service and Others for Clean Air

When the Department of Defense received one million dollars to participate in the Clean Air Program, it gave funds to the General Services Administration to purchase modified bi-fuel vehicles that use both gasoline and compressed natural gas (CNG) to operate. Fort Riley was earmarked to receive 30 bi-fuel vehicles.

To receive these vehicles, Fort Riley needed to establish a CNG refueling station on the installation. At this point, a partnership was developed with Fort Riley, the Kansas Corporation Commission, the Kansas Gas Service, and GSA. The goal was to ensure that Fort Riley became a member of the Kansas Clean Air Coalition—and the membership depended on the delivery of the bi-fuel vehicles to Fort Riley. The partners formed a working group to develop a plan. The group found there were no funds available for pumping equipment or the installation of

support equipment—the pad, pumps, and lighting. No funds were available either for daily maintenance, operation of the facility, or unique military billing procedures.

The working group developed solutions. Kansas Gas Service would provide a recently refurbished pumping station, cost-free as long as the post used its gas. The Kansas Corporation Commission would give Kansas Gas Service $15,000 for equipment installation. A civilian subcontractor would be hired for daily maintenance, and the cost would be rolled into items billed to GSA. The facility would be credit card-operated, and billing for the gas would be controlled through a credit card company via a third party and monitored by meters.

The partnership proved highly successful. Not only did the 30 original bi-fuel vehicles arrive, but the fleet later increased to over 40 bi-fuel vehicles. A CNG refueling station opened in April 1999 and continues to operate successfully. FORSCOM has indicated it will use Fort Riley as the model for placing bi-fuel vehicles at other FORSCOM installations and as an example of the benefits of effective partnerships.

The tangible savings are $100,000 for pumping equipment, $15,000 for equipment installation, $25,000 annually for manpower (the station attendants), $10,000 annually for equipment maintenance, and$16,500 annually for actual fuel usage. The intangible benefits are more environmentally friendly vehicles and increased vehicular service life. Another significant benefit is that being a member of the Kansas Clean Air Coalition enhances Fort Riley's reputation as a good steward of the environment and promotes Fort Riley's involvement with environmental initiatives.

Fort Campbell Works To "Become Virtual" with Army Corps of Engineers

The Public Works Business Center at Fort Campbell is working to leverage the expertise and assets of the Army Corps of Engineers to serve its customers better. The Corps of Engineers' role within Public Works is that of a service provider. The installation commander retains managerial responsibilities for the Business Center mission and has direct control of all planning, programming, budgeting, funding prioritization, and ownership of property. The Corps of Engineers personnel have become integrated within the Business Center staff to provide these services. This process is widely known as "becoming virtual." By "becoming virtual" with the Corps of Engineers, the Public Works Business Center can meet customer requirements better. The result has been improved time efficiencies and an ability to provide higher quality at a reasonable cost. When projects are identified, an acquisition strategy is developed, defining the responsibility for design, contracting, and inspection. Decisions are based on the mix of installation and Corps assets that will provide the appropriate timeliness, cost, and quality. For example, the Corps of Engineers may create a design for contracting by the installation and inspection by the Public Works inspectors.

The agencies also have an annual two-day partnering session. The result is that the two agencies see their mission as one, and trust and confidence increase within the "virtual" team.

The Corps of Engineers has truly become an arm of the Public Works Business Center. The two work together on developing plans. The Corps sends engineers to backfill vacancies on a temporary basis. It has collocated employees at Fort Campbell to work side by side with the Fort Campbell employees: a project manager, a master planning team member, and an environmental team member. Plans are under way for a real estate expert. By locating these personnel at the installation, the Corps of Engineers becomes more aware of installation issues and a more effective partner. The agencies also have

an annual two-day partnering session. The result is that the two agencies see their mission as one, and trust and confidence increase within the "virtual" team.

Letterkenny Reaches an Agreement with Manufacturer To Provide Storage and Maintenance

At Letterkenny Army Depot, the Paladin (M109A6 Howitzer) Project Manager faced a potentially huge cost and logistics dilemma because of the Base Realignment and Closure Act of 1995, which transferred the depot-level artillery support mission from Letterkenny to Anniston Army Depot. In July 1999, when the transfer was to become final, 180 Paladins were in storage at Letterkenny in an area designated for transfer to the local reuse authority. The howitzers were scheduled for fielding over the next three years, during which time they needed proper storage and maintenance.

Rather than move the howitzers to Anniston, all parties agreed that the Paladins could be stored and maintained by the original manufacturer at a new site on Letterkenny. This agreement avoided a $375,000 cost for shipping them to Anniston and ensured the most qualified personnel would maintain the howitzers.

The decision to keep residual production howitzers at Letterkenny and not move them to an Office of Emergency Management site or Anniston was a "win-win" situation for the Project Management Office, for Letterkenny, and of course for the Army.

SBCCOM Partners with Defense Supply Center-Philadelphia To Support Maintenance Shelters

Large Area Maintenance Shelters are used worldwide for helicopter and track vehicle repair missions. But no Defense Department source of supply exists to support the 150-plus maintenance shelters procured since Operation Desert Shield, and units have had to fend for themselves or obtain parts from contractors in the Logistics Civil Augmentation Program. This increases life cycle costs by impacting the users' ability to maintain and repair the shelters in a cost-effective, expedient fashion.

To correct the problem, SBCCOM and Defense Supply Center-Philadelphia teamed to set up a Defense Department logistics focal point to support the Large Area Maintenance Shelters. In October 1999, SBCCOM transferred $1 million to Defense Supply Center-Philadelphia to set up and stock a central supply operation. Initial parts procured will be used for the War Reserve program.

Presidio of Monterey Collaborates with City of Monterey for Public Services Demo

Because the Defense Language Institute Foreign Language Center—and the Presidio of Monterey, where it is located—are close to

Aeriel view of the Presidio of Monterey and the City of Monterey.

municipal service providers and public utilities, substantial opportunity existed to take advantage of economies of scale by collaborating with the public organizations for service delivery. Although the Language Center and the Presidio could have contracted with another federal agency for service delivery, special legislation was required to allow them to pursue these opportunities with nearby municipalities. Since the Language Center and the Presidio—as well as the Naval Postgraduate School, also nearby—are relatively small installations,

considerable military funds could be saved by doing this. The City of Monterey operated a multimillion-dollar public works agency delivering a variety of services to the neighborhoods surrounding the Presidio and the Naval Postgraduate School, while the military installations maintained their own stand-alone operations. The opportunities for coordination and collaboration were plentiful. Unfortunately, current federal law and regulation make this kind of cooperation prohibitively difficult and, in some cases, illegal.

Recognizing this problem, the City of Monterey worked with Congressman Sam Farr and the Department of Defense to secure legislative language that would permit these opportunities on a demonstration project basis. The legislation allowed the commanders of the three military organizations to purchase firefighting, security guard, police, public works, utility, and other municipal services from government agencies within Monterey County.

This legislation (PL 103-337, Sec 816) became effective on October 1, 1994, and required the Secretary of Defense to submit a progress report to Congress no later than December 31, 1996. This date was extended to December 1998 and may be extended through the year 2000 to allow appropriate time to measure the success of the project.

Fort McPherson Barters Services and Resources with Nearby Cities

The U.S. Army Garrison at Fort McPherson has formed a partnership with the cities of Forest Park and East Point, Georgia. Through form of photo identification—to all employees, the mutual exchange of services and resources, the installation and neighboring cities are working to improve the quality of life for customers and citizens and achieve a strong bond among all communities.

In March 1998, to keep units and agencies from committing garrison resources without coordination, the Installation Partnership Advisory Council was established. The Council was initially organized as a clearinghouse for partnerships between Forts McPherson and Gillem and external community organizations. However, the Garrison Commander's vision is to expand the focus of the Council to include reviewing partnership initiatives with installation tenants and other government entities.

Since the implementation of the Installation Partnership Advisory Council, the process for establishing and maintaining partnerships has provided assurance of a quid pro quo arrangement that has dramatically reduced duplication of effort. Initiatives that promote community awareness and involvement in partnering programs have brought about positive commitments toward building successful coalitions among the forts' surrounding communities, tenants and government agencies. The garrison has engages in four mutually beneficial agreements that continue to thrive — East Point, Forest Park, Clayton County Public Schools Partners In Education, and West End Rotary. Executing positive, long-term partnership agreements is one successful way to effectively serve customers and accomplish missions.

Category 7: Business Results

Business results are the results an organization obtains through the full spectrum of its operations, as seen from the perspective of its customers—a form of the proverbial "bottom line." This evaluation encompasses the organization's performance and improvement in key business areas: customer satisfaction, financial performance, use of human resources, supplier and partnering processes, and overall organizational effectiveness. It has a dual focus—superior value of products and services as viewed by customers and the marketplace, and superior organizational performance as reflected in operational and financial indicators. "Real-time" information—measurement of progress—forms the basis for evaluation and improvement of processes, products, and services, aligned with the organization's overall mission and business strategy.

Business results can be said to have five aspects: customer-focused results, financial performance results, human resource results, supplier and partner results, and organizational effectiveness results.

Customer-Focused Results

Customer-focused results are the results most significant to the assessment of customer-related performance: customer satisfaction or dissatisfaction, customer satisfaction relative to competitors, and real-world quality of the product or service. This type of result is measured in terms of current levels, trends, and appropriate comparisons for the key indicators, such as customer retention, positive referral, and customer-perceived value, which flow from product and service performance.

Customer-Focused Results: Success Stories of 1999

Several successful initiatives of 1999 involved customer-focused results. Two in particular illustrate the close relationship an organization must have with its customers.

CERDEC's Night Vision/Electronic Sensors Directorate Has Strong Commitment to Customers

CERDEC's Night Vision/Electronic Sensors Directorate (NVESD) has a strong commitment to its customers. During the process for approval of science and technology objectives or advanced technology demonstrations, NVESD coordinates with Training and Doctrine Command to develop science and technology programs that address warfighter needs. For each objective, NVESD coordinates with the user on what technologies will be investigated, and later efforts emphasize the need to obtain concurrence on transitioning these technologies to the next level. For each technology demonstration, the transition opportunities are laid out in advance and coordinated with the acquiring program manager (PM) or program executive officer (PEO), making the user well aware of the technologies available. The Science and Technology Objective/Advanced Technology Demonstration process, along with customer surveys and other avenues of feedback, provides

valuable information on customer satisfaction and user acceptance of the Science and Technology program.

NVESD also provides the technical and engineering matrix support to implement technology transition and support the program manager in product development and initial production and fielding. Recent examples of successfully transitioned programs include the 2nd Generation Forward Looking Infrared "B" Kit, Thermal Weapon Sight, and Driver's Vision Enhancer with PM-Night Vision/Reconnaissance, Surveillance and Target Acquisition (RSTA). Through NVESD's combined efforts with PM-NV/RSTA, the directorate has reduced the time from initiation of technology demonstration to first production contract award from an average of 15 years to 6-7 years.

AMRDEC and Redstone Technical Test Center Pioneer "Hardware-in-the-Loop" Simulation for Weapon System Acquisition

The Systems Simulation and Development Directorate of AMCOM's Aviation and Missile Research, Development, and Engineering Center (AMRDEC) has joined with the U.S. Army Test and Evaluation Command's Redstone Technical Test Center (RTTC) to implement a new concept in the application of hardware-in-the-loop (HWIL) simulation to weapon system acquisition.

The concept is to use HWIL simulation in the production phase of missile system acquisition to reduce lot acceptance and "fly-to-buy" live fire tests by substituting closed-loop guidance simulations in a specially configured facility. The simulation facility can accommodate production rounds (including motor, warheads, squibs, and batteries) in tests and simulations that fully exercise the system electronics, guidance system, software, and on-board processors without destroying the missile. After successful testing, the rounds can then be accepted into inventory.

This concept has been applied to the acquisition of the Longbow missile, developed for the Longbow Apache attack helicopter. After an initial investment of $7 million in the Longbow Simulation/Test Acceptance Facility, HWIL has demonstrated cost avoidance of the order of $12 million a year over a fully developed "fly-to-buy" lot acceptance program. Synergies from this approach have included the identification of potential production problems at a far earlier stage in the production process than would normally have been achieved with a live-fire program.

AMRDEC and RTTC are in the process of implementing a similar approach to support acquisition of the Brilliant Antiarmor--"BAT"--submunition and its derivatives. HWIL not only gives the customers all the missiles they pay for, without destroying any in testing; it also catches problems early and may thus reduce the long-term life cycle costs of the weapon.

Army Research Lab Interacts with Customers for Better Knowledge of Needs

The Army Research Lab (ARL) conducts an extensive process of interaction to ensure a thorough understanding of its customers' needs. This process, known as the Performance Evaluation Construct, includes peer review, internal assessment, and feedback from customers and stakeholders.

Peer Review. ARL contracted with the National Research Council to provide and administer a Technical Assessment Board composed of about 15 distinguished scientists and engineers and six ten-person panels, one in each of ARL's business areas. The panels visit their assigned part of ARL for several days each year to assess the technical quality of ARL's programs, staff, and facilities. The panels then forward reports of their findings to the Board, which compiles an overall assessment of ARL and publishes it as a public document. The direct interaction of the panels and the recommendations in the Technical Assessment

Board's report provide action items by which ARL can improve the technical quality of its work.

This process, known as the Performance Evaluation Construct, includes peer review, internal assessment, and feedback from customers and stakeholders.

Customer/Stakeholder Feedback. ARL divides its customers and stakeholders into three groups. The first group includes the direct recipients of the research products. These are the development centers and other reimbursable customers. Work for them is evaluated using an annual survey instrument, which is specifically targeted at the first-line supervisors in the customers' organizations with whom ARL's first-line supervisors have negotiated scopes of work. When the surveys are received from the customers, the results are tabulated and presented to the ARL Director. Any low scores or negative comments require the senior manager of the directorate in which the work was done to contact the customer within five working days about how to fix the problem. In addition, each year the directors of ARL's principal customers meet at ARL in the form of a Board of Directors to further review the overall results of ARL's product delivery program.

The other two stakeholder segments are the end item users and the Army's senior leadership. To gather feedback from these two groups, ARL formed a Stakeholders' Advisory Board chaired by the Commanding General of Army Materiel Command and comprising ten three-star (or civilian equivalent) members of the senior Army leadership. This Board meets annually at ARL and takes briefings on the state of the lab. It also pulls together the other parts of the Construct by hearing from the chairs of both the Board of Directors and the Technical Assessment Board. The Stakeholders' Advisory Board then issues guidance and opinions on ARL's performance at the strategic level.

Internal Assessment. To ascertain how well the lab is functioning and to provide a tool for making adjustments in the research environment, the Director uses a short list of metrics. The metrics include such things as papers published and percentage of the technical staff that hold doctoral level degrees. Such numbers, while not indicative of the quality of the research per se, do provide an indication as to whether the "soil" in which the research is to be done is sufficiently fertile to allow the highest quality work to occur. Goals for the dozen or so metrics are determined partly by benchmarking other world-class research organizations and partly by the Director's own experience and intuition. Directorate heads are held responsible for attaining these goals as well as fulfilling the commitments incurred through the other facets of the Construct. This coupling of organizational performance to personal performance was the subject of a recent GAO report that highlighted ARL's Construct.

Financial Performance Results

Financial performance results are related to key financial, market, and business indicators—results that reflect an organization's financial and marketplace success and challenges. Measures of financial performance might include return on investment, fiscal stewardship, cost/benefit and cost/effectiveness measures, and similar indicators of liquidity and financial activity. Measures of marketplace performance—of concern mainly to organizations that operate in a marketplace environment—could include success in managing new products or services, business growth, new products, new geographical areas entered, and other market-related indicators.

Financial Performance Results: Success Stories of 1999

Several successful initiatives of 1999 produced financial performance results. They ranged from large, broad-based programs to single, apparently small acts of stewardship that resulted in significant savings.

TRADOC's Base Operations Support Leads the Way with BOLD Grants

Since 1995 the Army's Training and Doctrine Command (TRADOC) Deputy Chief of Staff for Base Operations Support (DCSBOS) has operated a capital venture funding program called Base Operations Leveraging and Development (BOLD) Grants. Its whole purpose is to fund reinvention-related initiatives.

BOLD Grants exist to encourage TRADOC installations' commanders to enhance productivity—with a focus towards responsiveness to customers—without taxing limited installation resources.

In 1995 the TRADOC commander, recognizing a need to invest in the future, set aside several million from routine operational dollars to fund the grants. BOLD Grants exist to encourage TRADOC installation commanders to enhance productivity—with a focus towards responsiveness to customers—without taxing limited installation resources.

The key feature of BOLD Grants is that installations ***are not taxed on their successes***. Resulting returns on investment are to be used at the garrison commander's discretion. A commander makes grants based on a prioritized list of recommendations that offer significant return on investment and a high potential for export to other TRADOC installations. TRADOC installation commanders are instructed to involve all employees and staff in the process of formulating and submitting recommendations. All initiatives must focus on improved products and services for the customer.

The BOLD Grants program is a profound success. In FY 1999, the money invested in the 1996 program had experienced a $5.8 million return on investment, which more than repaid the original amount. All projects have been audited and successes documented.

Programs of succeeding years showed similar results. The 59 projects funded for $7.25 million in 1997 have returned $3.7 million on the investment as of September 1999. The 52 projects funded in 1998 returned $1.9 million by September 1999. The program continued in FY 1999, with 24 projects funded for $1.03 million.

Fort Lewis Takes Giant Step in Reducing Energy Use

Fort Lewis has taken a giant step towards reducing energy use. By employing energy efficiency measures, incentive programs, and better operations and maintenance procedures, the installation reduced energy use by 8.2 percent in FY 1998, compared to the previous year. The associated cost saving was $939,781. To reach the federally mandated goal of a 35 percent reduction by 2010, Fort Lewis has reduced energy consumption 16 percent since 1985. For these results, the installation received a 2nd Place Secretary of the Army Energy Conservation and Water Management Award in the Active Army category for FY 1998.

Joint Task Force Reduces Telecommunication Costs

The Army's Deputy Chief of Staff for Command, Control, Communications, and Computers has chartered a Joint Telecommunications Task Force to find ways to reduce telecommunications costs at Army installations. The members of the task force include U.S. Army Signal Command (USASC) Internal Review; USASC

Telecommunications Directorate; USASC Logistics Operations Division, Acquisition Cell; the U.S. Army Audit Agency; FORSCOM Telecommunications Division; and local Director of Information Management personnel. The areas reviewed include leased equipment, lines and circuits, tariff rates, Defense Switched Network (DSN) service, and DSN precedence lines. Any savings will revert to the installation.

To date, the cost of providing this review has been $30,000. The savings to three installations visited so far came to almost $1 million. Besides the monetary savings, the installations gained awareness of issues that will make them more alert to possibilities for improving their business practices in the future. This will result in continued savings and improved management of telecommunications facilities.

Additional installations are being reviewed. Army leaders anticipate that better business practices will result, with continued savings to the installations and the United States Army.

INSCOM Saves Time and Money with Omnibus Contracts

During a business practices review, the U.S. Army Intelligence and Security Command (INSCOM) realized it relied excessively on the use of individual Military Interdepartmental Purchase Requests to satisfy contractual requirements. INSCOM decided to try a more broadly based type of contracting vehicle, an omnibus contract, which would allow the purchase of an array of products and services.

INSCOM managers developed an omnibus performance-based work statement, issued a solicitation, and awarded three contracts, meeting the broad requirements of INSCOM worldwide. Use of the omnibus contract significantly reduces the overhead costs of multiple contracting vehicles, contract awards, and contract administration costs and manpower. It also decreases response time for divergent mission requirements and eliminates duplication of effort. When dollars are executed through the Headquarters omnibus contract, the instrument provides for better oversight on expenditures and ensures good stewardship of resources. Finally, it provides senior management the opportunity to review the total level of effort provided to various activities, to ensure that the Command is receiving the best value for acquisitions and that priorities are properly assigned.

AMCOM's Missile Logistics Directorate Finds Better Price for Item Needed in Kosovo

In May 1999 the Multiple Launch Rocket System (MLRS) was required in support of operations in Kosovo, and a specific component—National Stock Number 6110-01-416-0159—was needed to make it work.

No contractor manufactured it, however. To meet previous needs, the Army had fabricated the item at Anniston Army Depot. But this capability was no longer available at the depot, because of Army-wide consolidation of depot activities and decisions to cease performing some functions.

AMCOM's Missile Logistics Directorate contacted the prime contractor for MLRS to get an estimated price for the manufacture of this item. The estimate was approximately $32,000—each—for the required quantity of 23.

The MLRS project engineers reviewed this information and concluded they could do better. By utilizing market research procedures and with the support of the project engineering office, the MLRS planners determined that with a developed drawing, a small business that had

produced similar items in the past could manufacture this item. The small business gave them a quote of $6,500 a unit for the 23.

This was more in line with the depot fabrication cost. Streamlined contracting initiatives and use of historical pricing techniques enabled the contract specialist and the contracting officer to expedite an award to the small business contractor, at estimated savings to the government of $586,500.

SBCCOM Cuts Costs for Decontamination Training

SBCCOM's Detection/Decontamination Core Team is working on two programs to reduce costs for decontamination training by creating training kits.

The M295 Individual Equipment Decontamination Kit is the real thing—the soldier's primary means for immediate decontamination of his personal equipment after exposure to chemical agents. The filler in the kit is XE555, an adsorbent resin: the opposite of absorbent, it collects gas or liquid in a condensed form on a surface. The resin, which is proprietary and has limited availability, accounts for 50 percent of the kit's cost. Because no separate training kit was ever developed, the soldier has had to requisition two M295 kits to support both the wartime contingency and nuclear, biological, and chemical defense training.

By replacing the expensive XE555 resin used in the M295 kit with a cheaper, inert, and nonhazardous powder, SBCCOM technologists have created the M295 Equipment Decontamination Training Kit. This kit, used only for training, costs over 50 percent less than the operational kit.

A similar effort was undertaken to create the M291 Skin, Decontamination Training Kit. By replacing the expensive resin used in the operational kit with one of many certified "non-allergenic," commercially available powders, the technologists were able to reduce the cost of the training-only kit by 25 percent.

At SBCCOM, Service Representatives Achieve Cost Reduction Through Partnering

At SBCCOM, the Service representatives planning the Joint Service Lightweight Standoff Chemical Agent Detector, through partnering, achieved a major reduction of the cost associated with research, development, and production. They recognized the benefits that partnering early, among themselves and with the contractor, could contribute in cost savings. In a partnering relationship with the contractor and using cost an independent variable, they accepted a proposal to use a liquid crystal display in the detector instead of a plasma display. They embraced the concept that by trading off a limited amount of capability, they could save the program a significant amount of funding and still meet the basic needs of the warfighter. This cost awareness will save the program $1,800,000 in research and development and $47 million in production.

19th TAACOM Strengthens Management Stewardship for Cost Savings

The 19th Theater Army Area Command (TAACOM), in Taegu, Korea, strengthened its management practices in several areas ranging from housing costs to inventory control, with significant cost savings.

Yongsan's Increased Barracks Occupancy Initiative. One such initiative was increasing the occupancy rate of the Yongsan barracks, to decrease the need to rent housing off post.

Until July 1998, there was no timely or standardized format for military organizations to report barracks utilization. Consequently, many service members in the ranks of E1-E6 were allowed to reside off the installation because the availability of barracks space was hard to track.

The housing division was spending money both to maintain the barracks and to rent housing off post.

In July 1998, the housing division began to conduct a validation of all the barracks space to determine the capacity of each building in accordance with Department of the Army criteria. A computer program was developed to better determine the barracks' occupancy and require military organizations to report barracks utilization via a simplified monthly format. In addition, to increase barracks occupancy, the housing division required newly reporting junior personnel to live on post. As of August 1999, 3,884 service members resided in the barracks, a 49 percent increase from the previous year. Since the average monthly rent for an off-post residence was $1,400, and the number of service members living in barracks increased by 1,286, accumulated savings over the past year totaled $16,511,600.

Temporary Duty Lodging Costs for the Seoul Area. For Taegu area personnel, the majority of temporary duty trips are to Seoul. Historically, lodging costs alone exceeded $265,000 annually. The Office of the Assistant Chief of Staff, Resource Management successfully pursued a blanket purchase agreement with several Seoul area hotels to provide special rates for temporary duty lodging. This initiative reduced lodging costs by 62 percent from $284,000 to $108,000, for annual savings of $176,000.

Use of Republic of Korea Logistics Cost Sharing Funds. The 6th Support Center was successful in obtaining U.S. Forces Korea support to use Republic of Korea Logistics Cost Sharing funds to pay for the contract repairs of a variety of items such as mattresses, tentage, camouflage screens, wood furniture, steam cleaners, and materiel handling equipment. Use of these funds precludes Eighth Army units from having to use their Operating Tempo (OPTEMPO) budget to pay for the repair or replacement of those items. This initiative provides a twofold cost avoidance—the difference between the cost of local repair versus buying a replacement item and the Logistics Cost Sharing offset to the Operations and Maintenance budget. Anticipated cost avoidance for 1999 is $9.6 million. This program significantly contributes to unit readiness and improved quality of life for soldiers throughout Korea.

General Support Level Ground Component Repair. The Materiel Support Center-Korea (MSC-K) is aggressively pursuing maintenance strategies to increase its capability to repair more items. Maintenance initiatives in 1999 included:

High Mobility Multipurpose Wheeled Vehicle (HMMWV) Engine Conversion. Converting pre-1990 engines to clean air standards will save approximately $3,500 per engine. Projected cost avoidance this fiscal year is $500,000.
HMMWV Wheel Alignment. MSC-K acquired a new wheel alignment machine to more precisely align front and rear axles. Savings will result from reduced maintenance man-hours and component and tire life extension. Minimum savings of $25,000 are expected in FY 1999.

Vehicle Frame Straightener. MSC-K acquired a new frame straightening machine, which will reduce maintenance man-hours required per job. Efficiency savings of $75,000 are projected this year.

Lead Acid Battery Repair Program. MSC-K repaired or reclaimed over 2,000 batteries for a cost avoidance of $150,000.

Maintenance, Repair, and Environmental Program. The Maintenance, Repair, and Environmental Program is a Defense Logistics Agency (DLA) initiative that provides funding to upgrade and maintain bulk petroleum facilities that are used to store DLA-owned fuel. Since FY 1996, 19th TAACOM has successfully competed for funding to improve its aging bulk Petroleum, Oil, and Lubricants logistics infrastructure.

In FY 1996 three projects were approved, with a value of $2.0 million; in FY 1997, nine projects, with a value of $1.3 million; in FY 1998, nineteen projects, with a value of $7.5 million; and in FY 1999, ten projects, with a value of $6.3 million.

Participation in the Maintenance, Repair, and Environmental Program produces a significant cost avoidance for the Eighth Army Real Property Maintenance Activity account, helps reduce the 19th TAACOM's environmental risk and potential liability, and provides its soldiers better and safer work facilities.

OMA Inventory Redistribution. During FY 1999, the 19th TAACOM continued to fully utilize Standard Army Retail Supply System inventory management processes to maximize redistribution of available stocks to satisfy customer demands. Redistribution of Operations and Maintenance, Army (OMA)-owned inventory avoids new purchases from Army Working Capital Fund-Supply Management, Army, thus conserving training dollars. During this fiscal year, the organization satisfied approximately $30 million worth of supply requirements through inventory redistribution. Of the $30 million total, $26 million was supplied by the command's Theater Redistribution Activity in Seoul. The Theater Redistribution Activity continued to provide higher than average material return credit for turn-ins and produced a $9.1 million net profit that the Commanding General, Eighth U.S. Army, used to satisfy other unfinanced requirements.

Authorized Stockage List Reduction. During FY 1999, the 19th TAACOM Supply Support Activities continued to refine their Authorized Stockage Lists in accordance with Army policy and Standard Army Retail Supply System management processes. In FY 1998, only 79 percent of the Authorized Stockage List lines met Army minimum demand criteria. However, by January 1999, over 96 percent of the stocked lines were demand supported, and the demand support rate further improved to 98 percent by the end of the fiscal year. The command's Authorized Stockage List requisitioning objective value averaged $19.7 million in FY 1998. Through selective stockage practices, this value was reduced to $13.2 million by June 1999, a 33 percent reduction in inventory investment during this fiscal year. These reductions were achieved without impacting customer support, as measured by demand satisfaction metrics and equipment readiness rates. Thus, by eliminating infrequently demanded items from stockage, the 19th TAACOM has reduced its inventory cost while maintaining effective and efficient customer support.

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Special Operations Command Streamlines and Innovates for Savings

U.S. Army Special Operations Command (USASOC) has streamlined procedures and introduced a new way to prolong equipment life.

Temporary Duty Travel Initiative. USASOC headquarters has streamlined its internal temporary duty (TDY) travel program with a new initiative that is steadily reducing the command's travel costs through the use of military air for troop movements, best airline commercial tickets, and expanded use of General Service Administration vehicles. During the first nine months, 120 military aircraft have been used instead of commercial flights, and 1,710 passengers have been moved to and from their TDY locations. Thus far, total savings are $498,068. This program has also been added to the USASOC Web Network, so that travelers can access military air and General Service Administration vehicle request forms, commercial air rate comparisons, and Operational Support Command Aircraft schedules. The program is continuing to expand into other areas, such as the centraliza-tion of lodging, rental cars, and DA Form 1610 processing. This initiative's future remains bright, with the probability of $1 million savings per year.

Money-Saving SINCGARS Modification. A member of USASOC proposed a very inexpensive modification to the antenna subsystem base of the Single Channel Ground and Airborne Radio System (SINCGARS). The modification involved the use of a 3/4-inch Permanent Virtual Circuit pipe glued to the antenna base where the breakage was occurring. The suggestion was adopted with substantial savings, as well as an increase in the readiness rating for this communications item. The suggestion was passed to CECOM for evaluation and adoption.

USASOC member proposes an inexpensive modification to the Single Channel Ground & Airborne Radio System (SINCGARS).

Human Resource Results

Human resource results are results related to an organization's focus on human resources—results that involve work systems; employee education, training, and development; and employee well-being and satisfaction. These results show how well an organization has done in creating and maintaining a positive, productive, learning, and caring work environment. Indicators may include such measures as job simplification and rotation, work layout, and changing supervisory ratios; diversity, job safety, and on-the-job performance improvements; turnover, absenteeism, and grievances; and results of employee surveys.

Human Resource Results: Success Stories of 1999

USASOC Empowers Employees Through Command Climate Survey

The U.S. Army Special Operations Command recently conducted a Command Climate Survey to learn what its workforce thought about the work environment. In a partnering program with the North Carolina State University Psychology Department, USASOC chose two distinguished psychologists to assist the command in working its survey issues. This decision was made to gain the benefit of proven experts on compensation, leadership competencies, and workforce diversity and training techniques. The two professors chosen were invaluable to the command because of their vast experience gained from years of work with government and civilian agencies.

The survey provided an excellent opportunity for the workforce to initiate change within the

command. Four major issues emanating from the survey results have been internally worked and analyzed by guidance groups, focus groups, and supervisors working together, with external support from the two consultants from North Carolina State University. All of the 27 approved action plan recommendations are now being implemented to better the lives of the military and civilian workforce.

Fort Hood Works To Identify and Reduce High-Risk Behaviors

The Fort Hood Risk Reduction Program, implemented in May 1996, is a commander's management tool designed to assist in identifying and intervening in "high risk" behaviors that can have a detrimental impact on soldiers and unit readiness. Based on a data collection/analysis process, the program begins with the Family Advocacy Program Risk Reduction staff consolidating incident data collected from seven on-post agencies. Data is broken down by battalion or reporting unit and forwarded to the U.S. Army Center for Substance Abuse Program for processing. A series of graphics and information reports is generated by the Center for Substance Abuse and returned to the installation. On receipt of the information, Risk Reduction Program data is provided to commanders via a unit-specific Command Information Summary. In addition, a quarterly summary rollup is provided to Major Subordinate Commands and Brigade Commanders. The Risk Reduction Program and the Installation Prevention Team are currently in the process of developing an installation-wide standard, the Fort Hood Acceptable Level of Risk for each of the 14 risk factors. The Acceptable Level of Risk will be the benchmark for the command to measure unit risk and readiness.

Since implementation of the Risk Reduction Program, Fort Hood has seen a decrease in the total risk rate. As a direct result of the program's reporting of sexually transmitted disease incidents to commanders, requests for sexually transmitted disease education and training has increased dramatically. Since FY 1997 participation in this training has increased 1,130 percent, and drug and alcohol training has increased 795 percent.

Supplier and Partner Results

Supplier and partner results are the results associated with an organization's management of interaction with suppliers and partners—how well an organization ensures the quality, delivery, and price of externally provided goods and services and how the suppliers and partners contribute to the organization's improved performance. Results of this kind may involve improvements by existing suppliers and partners or selection of new, better-performing suppliers and partners. Indicators may include quality levels, cost savings, reductions in waste, reductions in cycle time, better connection and communication, and increases in productivity.

Supplier and Partner Results: Success Stories of 1999

Supplier and partner results in 1999 involved teaming between Army organizations and a variety of partners: other federal agencies, state and local governments, industry, and academia.

Fort Lewis Teams Up with Forest Service

The Forestry Management Program—an element of the U.S. Department of Agriculture Forest Service—is recognized as a world-class program and a model by other federal and state agencies such as the U.S. Fish and Wildlife Service. Fort Lewis is working with the Forest Service to conduct a forest ecosystem study using various harvesting methods. The post has a viable and active

timber-harvesting program that uses selective cutting to work near areas inhabited by endangered species. Over the last five years, Fort Lewis's Forestry Program has consistently generated money for the Army, averaging $2,500,000 more than the cost of running the program. In 1995, Fort Lewis received the Nature Conservancy's Public Service Award for the installation's efforts to conserve natural resources. Forty percent of these annual timber sales revenues are provided to the state of Washington for use in its public education program.

The post has a viable and active timber-harvesting program that uses selective cutting to work near areas inhabited by endangered species.

CERDEC Partners with New Jersey To Sponsor Innovation Center

The U.S. Army Communications-Electronics Command Research, Development, and Engineering Center has joined with the New Jersey Commission on Science and Technology to sponsor the Information Technology Innovation Center.

This initiative is part of CERDEC's strategy, started in 1998, to influence technology to enable the Army to buy information technology products, with custom features, at consumer prices. As a co-sponsor of the Information Technology Innovation Center, CERDEC hopes to identify collaborative opportunities and effective conversion of those opportunities into research and commercial and military products.

The Information Technology Innovation Center partnership includes New Jersey universities — Princeton, New Jersey Institute of Technology, Monmouth, Rutgers, and Stevens—and industry partners—Telcordia, Lucent, and Sarnoff Corporation. The Center builds on, and extends, the Defense Advanced Research Projects Agency-sponsored Wireless Interworking Testbed Consortium that electronically links CERDEC, Telcordia, Lucent, and Sarnoff Corporation to conduct collaborative development and testing of dual-use digital wireless and video technology products. Electronic linkages provide opportunities to expand collaboration to regional partnerships and beyond. The approach is to adopt whatever commercial technology is suitable, adapt commercial technology when it cannot be directly used, and develop technology in concert with industry and academia when there is no commercial technology that can cost-effectively be adopted or adapted to meet military operational needs.

CERDEC continues to stimulate, accelerate, and support the growth and utilization of innovative information technology, products, and services that will benefit both military and commercial applications.

Fort Sam Houston Privatizes Natural Gas Distribution System

Fort Sam Houston recently negotiated the transfer of the Harris Heights gas distribution system to the City Public Service of San Antonio. In return, City Public Service has agreed to reduce Fort Sam Houston's natural gas bills by nearly $700 per month over a period of five years, for total savings of approximately $40,000. City Public Service will also be responsible for operation and maintenance costs associated with the gas distribution system.

The natural gas distribution system is the first of several utilities scheduled for privatization. Also planned for conversion in upcoming years are the electric, water, and sewer systems.

Cold Regions Research and Engineering Lab Partners with Industry

The U.S. Army Corps of Engineers' Cold Regions Research and Engineering Laboratory (CRREL) has participated since 1990 in Cooperative Research and Development Agreements with industry. The range of technologies represented includes low temperature impact on

system performance, environmental cleanup, advanced materials, structural designs, pavement design, and icing and anti-icing technologies. The tremendous response shown by CRREL's industry partners has demonstrated that companies are confident of the benefits they can gain in the marketplace by working with CRREL's facilities and talented people.

January 1998: CRREL Helps as Severe Ice Storm Hits the Northeast. In January 1998, as a severe ice storm impacted the northeast United States and Canada, CRREL partnered with the Electric Power Research Institute in a study of weather conditions and ice loads. The sequence of the storm was documented, and maps were provided to show the intrusion of the cold and warm air masses into the region as the storm progressed. Ice accretion models developed by CRREL were used to determine daily incremental and cumulative ice loads on wires 33 feet above the ground. Results were displayed in a map format with explanatory text. At the Electric Power Research Institute's request, the cooperative agreement is being modified to provide additional ice load information on wires running parallel to the wind direction.

CRREL's research and engineering program supports 5 major components. Clockwise from lower-left: Battlespace Environments, Infrastructure, Military Engineering, Civil Works, and (in the center) Environmental Quality.

CRREL Supplies Probes for Winter Research Cruise in the Antarctic. CRREL has supplied 20 temperature-and-depth probes for use, test, and evaluation during an Antarctic winter research cruise.

CRREL developed the thin, stiff, fairly low-conductivity probe to be inserted through snow to the ground surface, to obtain ground surface temperatures without the need to excavate snow. It offers an inherently more accurate method than measuring temperatures in a snow pit.

CRREL supplied Antarctic Support Associates with 20 of these devices for testing in the Arctic and Antarctica. They will be used on the research vessel *Nathaniel B. Palmer* during a winter cruise. The probes are valuable for scientifically investigating energy fluxes across snow cover, because they provide a quick and efficient way of procuring flux estimates over a wide area. CRREL will be able to compare the results from this evaluation with similar measurements made as part of the Surface Heat Energy Budget of the Arctic--or SHEBA--field experiment on the Arctic sea ice. The results will also be used to help determine the commercial potential of this patented device.

CRREL Helps Develop Coatings To Keep Ice from Sticking. CRREL is working with S&A Fernandina, Inc. to develop various protective coatings that can readily be applied to a surface such as aluminum or steel to reduce the strength needed to remove ice bonded to it. S&A Fernandina, Inc. will develop coating that will lower a surface's adhesive strength for ice, then apply it to metal pilings and deliver the coated pilings to CRREL. To evaluate the coating's performance, CRREL will measure its bond strength to ice using the Zero Degree Cone Test, which allows measurement of the

ice force necessary to push the coated pile out of the ice in which it was frozen. The change in adhesion strength over repeated testing on a sample provides a measure of the coating's durability. The test also provides quantitative ice adhesion values for coating developers, commercial vendors, structural designers, and engineers.

Bridges, Potholes, and Composites: CRREL Partners with State Agencies

The Cold Regions Research and Engineering Laboratory participates in Intergovernmental Cooperative Agreements with state and local governments. The technologies represented include the impact of low temperatures on system performance, environmental cleanup, advanced materials, structural designs, pavement design, and icing and anti-icing technologies. Recent cooperative undertakings have involved bridge monitoring, reduction of tire damage to thawing roads, and behavior of composite materials at low temperatures.

CRREL Monitors Ice Scour of Missouri River Bridge. CRREL partnered with the Montana Department of Transportation to document the impact of river ice on the erosion and deposit of material from the Missouri River's bed and banks. CRREL fabricated four Time-Domain-Reflectometry scour monitoring probes and installed them in the immediate vicinity of the Missouri River bridge in Culbertson, Montana, to monitor progression of scour around the bridge piers during river freeze-up and break-up. Throughout the winter, periodic measurements of ice thickness and flow measurements were made at the site, especially following freeze-up (January 1999) and prior to anticipated break-up (March-April 1999). CRREL also installed a fixed-position digital video camera at the bridge to document ice conditions visually.

Does Lower Tire Pressure Reduce Potholes? CRREL Helps with the Answer. As part of a multi-partner, cooperative demonstration project, CRREL partnered with the North Dakota Department of Transportation on a study of the effects of lower tire pressure on asphalt-surfaced low-volume roads.

CRREL computer simulations indicated that using lower tire pressure for trucks could significantly reduce road damage during spring thaw and increase pavement life. To validate this, CRREL constructed eight instrumented pavement test sections in its Frost Effects Research Facility. Four were surfaced with chip-seal paving and four with hot-mix asphalt. These sections were frozen, and traffic was applied during thawing, using CRREL's Heavy Vehicle Simulator, which resembles a mammoth truck, with tire pressures set at high, medium, and low. For model validation, the upper two to three feet of the pavement will be reconstructed, and the procedure repeated using a different technique. For the second test cycle, traffic will be applied to each section until failure occurs, using high, medium, and low tire pressure but holding the thaw constant. Then the process will be repeated at continually increased thaw depths, until failure occurs on several sections.

The information gained from this project will help any agency that moves heavy vehicles—military transport, school buses, logging trucks, construction vehicles, and the like—to reduce damage to roads with a thin, bituminous surface.

What Happens When Composites Freeze and Thaw? CRREL Collaborates with a University. North Dakota State University and CRREL are engaging in a cooperative investigation to study the mechanical behavior and durability of composite materials—high-strength, lightweight engineering materials consisting of various combinations of alloys, plastics, and ceramics—at low temperatures.

The investigation will examine the effects of low temperatures on static and dynamic strength of composite materials, their response

under cyclic loading, and their resistance to impact. The study also shows the effects of freeze-thaw cycling on a material's mechanical behavior under static, fatigue, and impact loading; the strain-rate sensitivity of composites at low temperatures; and the effects of low temperatures and low-temperature thermal cycling on the use of these materials in engineering applications. This collaborative work will advance current knowledge in low-temperature mechanical behavior of composite materials.

Organizational Effectiveness Results

Organizational effectiveness results are key results that significantly contribute to the organization's goals but do not quite fit into the other four categories of business results. They may involve performance measures that are unique to the organization. Or they may simply fall into areas of interest outside the other four—areas like design, production, delivery, and support processes; legal or regulatory compliance and corporate citizenship; and intermediate measures of progress toward accomplishment of organizational strategy. Indicators could include environmental improvements; by-product use and recycling; responsiveness indicators like cycle time, lead times, and setup times; customer assessment or third-party assessment; or business-specific indicators like innovation rates, innovation effectiveness, time to market, and indicators of strategic goal achievement.

Organizational Effectiveness Results: Success Stories of 1999

Organizational effectiveness results in 1999 ranged from new approaches to planning, through leveraging of technologies, to significant studies supporting environmental stewardship.

CERDEC Integrates Multiple Systems for Comprehensive C4I2WS Planning

CERDEC has implemented a fully integrated, concurrent "system of systems" approach to Army Command, Control, Communications, Computers, Information, Intelligence, Warfare, and Sensors (C4I2WS) planning.

This initiative gives the Army a comprehensive, distributed capability—known as System of Systems Integration (SoSI)—that facilitates the design, development, and evolution of C4I2WS systems. SoSI will make it easier for systems to evolve from today's battlefield, which centers on platforms, to the battlefield of the future, which will center on knowledge.

The "System of Systems" integrates existing systems and facilities. It capitalizes on the Defense Department's Simulation Based Acquisition and institutionalizes the Army's Simulation and Modeling for Acquisition, Requirements, and Training (SMART). It builds on current facilities and expertise such as the Digital Integration Lab, Virtual Prototyping Simulation, communications labs, command and control labs, sensors labs, and intelligence/electronic warfare labs. Electronically, SoSI can extend and link local facilities and capabilities to and from remote sites. It integrates real systems (fielded and evolving) and new technology with modeling and simulation. It encourages partnerships with customers and industry through non-proprietary collaborative environments. SoSI also allows a more comprehensive "total C4I2WS systems approach," extending from modeling and simulation, to component/prototype/system design, to system of systems engineering, to total "system of systems" integration.

CERDEC Employs Horizontal Power Integration To Meet Warfighting Needs

CERDEC is leveraging energy-efficient technologies across all elements of Army power—sources, storage, distribution, and consumption—to address the growing power demands

of warfighters. Horizontal Technology Integration (HTI) is a new Army approach that has been leveraged from the massive power reduction efforts in the personal computer and mobile phone markets. It addresses power consumption and generation at all levels of a system's design. HTI will revolutionize power on the battlefield to support a highly mobile and agile force for Army 2010 and beyond.

CERDEC is applying physical sciences related to power generation, energy conversion, materials, electronics, signature suppression, and thermal management to improve existing power generation, storage, and distribution systems. This enables leap-ahead technology advances in three areas:

Hybrids and alternative power sources for high energy density—small, reliable, lightweight power sources and energy conversion devices from batteries and battery hybrids, fuel cells, and thermophotovoltaic and kinetic energy devices.

Electromechanical sources for reliable, smaller, lighter, and more efficient power generation, on-the-move capability, and support of mobile command and control functions.

Power management tools for obtaining low power system-level designs, particularly for the Land Warrior, the high-tech soldier-system designed to enable infantrymen to win on the 21st–century battlefield.

In terms of power consumption and management, commercial design tools currently focus on digital layout, with optimization for speed and size. The HTI effort leverages commercial efforts and brings them higher in the design framework to the architectural and system levels, with optimization for power.

Fort Huachuca Dental Activity Reinvents Itself for Better Service at Less Cost

The Fort Huachuca Dental Activity has implemented, unit-wide, the Army Dental Care System's corporate Dental Care Reengineering Initiative. This 20-month effort was not marginal change; instead it was a total organizational reengineering that incorporated all seven categories of the Army Performance Improvement Criteria. Significant aspects of the reinvention included creation of a working strategic plan, process reengineering, focus on customer expectations, organizational culture and information change management, performance measurement, and investment in facilities and staff expertise. The basic strategy was to reduce the number of more costly providers—the dentists—to the standard support staff ratio and to use the savings to reinvest in additional ancillary staff and infrastructure, in order to provide improved customer service at less cost.

Key performance metrics include improvement in service member dental health and deployability ratios, reduction in cost per beneficiary, and improved survey results for customer and staff satisfaction. Measurement trends to date point to a total organizational cost reduction of at least 50 percent, with major improvements in all four corporate, quality-focused goals and their associated objectives.

Wuerzburg Dental Activity Lines Up Rewards Program with Corporate Objectives

The Wuerzburg Dental Activity recently completed the first year of an incentive program aimed at fulfillment of core requirements for the organization's 12 subordinate, geographically separated dental clinics. The program capitalized on a unique source of revenue—collections from patients who pay—to reward subordinate units that excelled in the performance measurement categories of pay patient collections, budget execution, monthly reporting, mandatory training, physical conditioning, soldier training, and education.

For FY 1999, the Wuerzburg Dental Activity returned $10,000 in collectibles to two clinics in a 60/40 split. The clinics are empowered to

allocate the funds in ways that drive further quality improvements, including workforce rewards and improvements to the work environment. The program encourages managers to focus on best business practices, such as maintaining accountability for accounts receivable. In addition, the program aligns the interests of the subordinate units with the overall command objectives to ensure military and civilian staff have the skills to meet the requirements of the Army's healthcare mission in Europe.

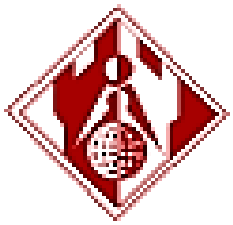
Computers To Restore Ecosystems: The Corps of Engineers Uses Environmental Quality Modeling To Support the Environment

The U.S. Army Corps of Engineers (USACE) has a new technology to support its environmental stewardship: a high-performance computing application called Environmental Quality Modeling.

The Environmental Quality Modeling computational technology area is part of a billion-dollar Department of Defense investment in high performance computing, intended to provide advanced hardware, computing tools, and training to Defense researchers.

Environmental Quality Modeling involves an efficient solution of equations of mass, momentum, energy, and transport of constituent elements, in support of environmental restoration and stewardship on Department of Defense-managed lands.

The Department of Defense manages significant natural and cultural resources for which it has stewardship responsibilities, such as maintaining habitat for endangered species. It also has on its active installations within the United States more than 10,000 contaminated sites that may require some level of subsurface environmental restoration. Failure to steward these resources properly directly affects training and, hence, readiness and environmental security. Environmental Quality Modeling provides Defense with state-of-the-art modeling systems in support of environmental risk management, optimal site cleanup, and environmentally sustainable training activities.



Four recent successes show the use of high-performance computing technology in environmental quality research, development, and site-specific application. The stories—all involving Environmental Quality Modeling related to pollution prevention and ecosystem restoration—provide a sense of the vital role this technology plays in enabling the Defense Department to implement technically proficient, cost-effective environmental management.

How Contaminants Behave in Surface Water. In the study Three-Dimensional Contaminant Transport and Fate for Surface Water, a team at the USACE Waterways Experiment Station in Vicksburg, Mississippi, developed a three-dimensional (3-D) modeling system showing how contaminants are transported in surface water and what happens to them. This modeling system can be applied on parallel computer systems and adjusted to different scales.

The focus was on modeling this phenomenon for bodies of surface water such as lakes, rivers, bays, and estuaries. The 3-D modeling system involves three linked components: the movement of water, the carrying of fine-grained sediment, and the transport and fate of contaminants. Software implementation was based on high-level programming languages, with explicit interfaces for distributing simultaneous computational tasks. Additional considerations included the human-computer interface, cross-platform portability, and scalability.

This project was undertaken in the second year of a four-year study. The three linked compo-

nents—water movement, sediment transport, and contaminant transport and fate—have been applied to the model for polychlorinated biphenyls (PCBs)—toxic chemical compounds formerly used in electrical equipment—as they might occur at the apex of a harbor. The modeling system yields accurate results for tides, currents, suspended solids, concentrations, and PCB distributions.

Dynamic 3-D simulations like this are an essential part of the Defense Department's environmental quality management in the areas of legal compliance, conservation, and cleanup. The new modeling technology (in concert with effective monitoring) is used for cost-effective pollution prevention and ecosystem restoration in estuaries, harbors, and other strategic waterways. The scalable parallel capabilities being fielded by this project represent the leap needed to meet Defense's present and future environmental quality management needs.

Modeling Contaminant Behavior Below the Ground. But not all contaminants affect only water. Defense scientists also need to model the behavior of contaminants in the highly diverse substances below the surface of the ground.

In the study *Modeling Flow and Transport in Heterogeneous Media*, the objective was to develop a highly resolved continuum model—a model with tens of millions of computational nodes—for subsurface flow and transport of particles. The statistical results from this model will form the basis of a new class of more economical subsurface particle models with memory.

The primary tool for this high-resolution modeling was PARFLOW, a three-dimensional model that statistically represents a variety of substances under the surface. A particle model, based on correlated random-motion transport techniques, is also being executed in concert with PARFLOW.

The first correlated calculations of random motion showed that dispersivity—a primary process whose specific characterization is key to accurate subsurface modeling—might be simulated more efficiently with the products of this project than with highly resolved continuum models. The PARFLOW model was implemented on the Cray T3E and IBM SP computers, to allow expanded investigation of whether this was true. Rigorous verification of this hypothesis would not be computationally possible without the Defense Department's scalable high-performance computing resources.

These results advance the state of the art for modeling flow and transport in heterogeneous media. This improvement of modeling capability will result in better, more economical cleanups—thus giving the warfighter improved facilities and more resources for direct support.

Simulating Free-Surface Flow in the Aquatic-Terrestrial Environment. Certain Department of Defense activities, such as moving aircraft carriers in and out of port or training on the landscape, almost overtax current techniques for computer simulation of their effects on the aquatic-terrestrial environment. The objective of the project Coupled Structured-Unstructured Flow Simulation was to combine numerical solution techniques for structured and unstructured grids to solve three-dimensional equations and multi-constituent transport equations for solving free-surface flow problems that arise from environmental concerns associated with military activities.

The two types of grids have different characteristics. Structured—sequentially ordered—grids facilitate rapid calculation at the expense of geometric flexibility, while unstructured—nonsequential—grids offer unlimited geometric flexibility with lesser speed. The best of both worlds can be achieved by using both types of grids simultaneously for different regions of the same flow problem.

Unstructured grids can be used selectively near irregular boundaries, with structured grids covering the rest of the computational domain.

The project team has successfully developed structured and unstructured flow solvers and tested them separately for scalability and closeness to reality. Static and dynamic grid interfaces are being developed to couple both flow-solvers in a single parallel framework. Unstructured components will reside on one set of computers, and structured components will occupy another, with messages passing information back and forth between the two.

The effects of Defense Department activities on the ecosystems within and adjacent to military installations are a prime concern. Advanced environmental quality modeling and simulation technologies—like the simulation of coupled processes involving water science and the motion of water—will allow the Defense Department to implement sound management strategies for these ecosystems. The grid-coupling project will provide an expedient, economical technique to predict the effects of military operations in the aquatic-terrestrial environment.

Better Modeling of How Contaminants Disperse. Defining the way a contaminant disperses through a variety of substances has generally been done through highly resolved numerical simulations that describe random permeability fields explicitly. But highly resolved flow models severely tax high-performance computing resources and limit the number of processes that can be included in the model. The project History-Dependent Random-Walk Simulation of Transport Through Porous Media undertook to make fundamental improvements in the process by replacing highly resolved numerical simulations with an equivalent statistical flow field.

The project team obtained statistics for speed of flow from highly resolved simulations for porous substances. They used these statistics to establish general relationships between random components of velocity and dispersion. Once the statistical laws for dispersion are established, future simulations can be performed without recourse to highly resolved flow fields. The mean velocity component can be obtained from a flow simulation with minimal resolution. The random velocity component is generated as a sequence of correlated random numbers.

Velocity statistics for flow through porous media proved to display effects that could be expressed as a dependence on history. A particle-tracking analysis, derived from a standard random-motion model, was endowed with the history-dependent statistical representation of velocity. The procedure is ideally suited for parallel calculations of transport. Computer simulations showed that the mean flow fields do not require highly resolved media. Because dispersion is driven by deviations from the mean flow, a more economical computation for dispersion may be possible, provided the statistics for flow velocity deviations can be developed.

This method could save the DoD a considerable amount of money. The department is responsible for nearly 10,000 active military installations and over 6,200 formerly used installations that require environmental cleanup. The cost of cleaning up these sites is estimated to range between $35 and $100 billion. Savings on the order of 10 to 20 percent of the costs of cleanup may be possible through implementation of these improved subsurface modeling techniques that more accurately account for the effects of subsurface differences.

III Corps Upgrades Circuitry for Enhanced Communication

Until recently, III U.S. Army Corps had been servicing its Tactical Exploitation of National Capabilities (TENCAP) with four Automatic Digital Network (AUTODIN) circuits. It has replaced this older equipment with a single T1 leased line having more than a thousand times

the capacity. This new circuit connects the Intelligence Contingency Readiness Center at Fort Hood, Texas, and the Ground Intelligence Support Activity-Continental United States at Fort Bragg, North Carolina.

The circuit provides expanded digital networking service to the Corps TENCAP systems. It also has enough extra capacity to provide a Joint Worldwide Intelligence Communications System circuit, as well as a backup Secret Internet Protocol Router Network circuit that can be used to route traffic if Fort Hood circuits should fail. This method of doing business, which originated at III Corps, has proved so successful that it has been adopted by I, V, and XVIII Corps.

The new circuit costs approximately $36,000 a year, with savings of $364,000 a year from the cost of the old system. Total savings to the Army are estimated at over $1,000,000 a year.

USASOC Personnel Innovate for Better Management

Personnel from USASOC recently took the initiative to make significant innovations for better management, extending the life of a critical supply item and greatly streamlining a repair process.

A USASOC logistician earned a Special Act Award for a long-lasting, broad-reaching contribution to the MC-4 RAM Air Parachute System program. Until recently, the mandated service life of parachutes was five years, and the shelf life was seven years—prudent lengths of time for the parachutes of fifty years ago, which were equipped solely with cotton components. When nylon and polyester components were introduced, the turn-in procedures were never adjusted for the change. The logistician who pointed this out gained acceptance for the extension of both shelf and service life for this critical item of supply. The service life has been extended to twelve years and the shelf life to fifteen years. The new procedures have been adopted across the board at USASOC and other airborne units. The estimated savings to USASOC alone per year are $281,200.

Another USASOC member proposed a change in procedures for the removal and replacement of the Family of Medium Tactical Vehicles transmission assembly for tactical vehicles. The old procedure called for removing the transmission through the top of the vehicle—a process requiring three or four people and approximately six man-hours to complete. The new procedure, requiring only two people,

removes the transmission from underneath the vehicle, using a transmission jack. The procedure was adopted throughout the Army, with TACOM publishing a change to the Family of Medium Tactical Vehicles technical manual in the fourth quarter of FY 1999.

Chapter 3. Beyond the Initiatives: Awards for Quality and Innovation

Though the Army as a whole continues to reinvent itself through a myriad of initiatives as diverse as the people who create them, there is a level beyond day-to-day reinvention—the level where outstanding achievements are recognized through major awards. Several organizations and teams of individuals within the Army stand out because of their spectacular successes. National and Service awards—sponsored by the President and Vice President of the United States, the Secretary of Defense, the Secretary of the Army, and the Chief of Staff, Army--exist to honor those who have produced excellence through innovative change. Universities and public foundations have contributed several more awards.

Major award programs within which Army people, teams, and organizations compete—and in which they have received recognition for stellar success—include the President's Quality Award Program, the Vice President's Hammer Award for Reinvention, the Secretary of Defense Productivity Excellence Award, Department of Defense Value Engineering Awards, and the Army Communities of Excellence Program. The Army Ideas for Excellence Program--for both soldiers and civilians within the Department of the Army--and the Government Technology Leadership Award for teams also encourage people to make innovative contributions.

The President's Quality Award Program

The President's Quality Award (PQA) is the highest recognition the Federal government gives to organizations that implement best business and performance practices and quality management strategies. Each year the program recognizes up to ten federal organizations that have improved their overall performance and demonstrated a sustained trend in providing high-quality products and services to customers. The PQA Program relies on a Baldrige-based organizational assessment system to evaluate competing organizations.

The program offers awards on two levels. The higher honor, the Presidential Award for Quality, is the federal government's equivalent of the Malcolm Baldrige National Quality Award. Winners demonstrate mature approaches to performance excellence that are well deployed throughout their organizations; they have documented world-class results and sustained performance over several years. The Presidential Award for Quality is not always given every year.

The other distinction, the President's Award for Quality Improvement, goes to organizations that demonstrate early positive approaches to performance excellence that are deployed throughout most of the organization. They have attained early preliminary positive results in important areas of their business.

Both these awards recognize organizations for performance excellence in all seven of the Baldrige-based categories. Conspicuous excellence in a specific category can earn the President's Quality Award for Merit.

The Army's own Baldrige-derived assessment tool, the Army Performance Improvement Criteria (APIC), strengthens the Army's organizational commitment both to its "customers," the American people, and to its "employees," the soldiers and civilians of the Total Army. The success of organizations that consistently use the APIC is illustrated by the fact that two Army organizations have earned high honors in the President's Quality Award Program for 2000.

In August 1999 the Director of Management, Office of the Chief of Staff, Army, hosted a 47-member Board of Examiners to evaluate applications from 16 Army organizations. Each military service may nominate six organizations for the next level of competition, which is federal government-wide. The six the Army selected to compete for the 2000 President's Quality Award Program were the 7th Infantry Division and Fort Carson, Colorado; Fort Riley, Kansas; Rock Island Arsenal, Illinois; Tobyhanna Army Depot, Pennsylvania; the U.S. Army Armament Research, Development, and Engineering Center (ARDEC), Picatinny Arsenal, New Jersey; and White Sands Missile Range, New Mexico.

The Office of Personnel Management (OPM)—which administers the President's Quality Award Program—reviewed the applications of 18 federal government agencies and selected eight "site visit winners": the finalists. Two of these were Army organizations: the Tank-automotive and Armaments Command (TACOM) ARDEC at Picatinny Arsenal, New Jersey, and the 7th Infantry Division and Fort Carson, Colorado.

During the site visit phase of the competition, OPM examiners reviewed records and interviewed key personnel to clarify, verify, and supplement the information in the award applications. In March 2000 OPM announced the winners. The Award for Quality Improvement—the highest award that the PQA Program would give for that year—went to TACOM-ARDEC for significant achievement in quality management across all categories. The 7th Infantry Division and Fort Carson, Colorado, won the President's Quality Award for Merit for significant accomplishments and excellence in the Leadership category—the second highest award presented this year.

The Vice President's Hammer Award for Reinvention

The Vice President's Hammer Award recognizes teams of federal employees and their partners who have made extraordinary progress in reinventing government. The award presented is literally a hammer—a $6 hammer, with a ribbon and a note from the Vice President—all in an aluminum frame. It symbolizes achievement in the process of building a government that works better and costs less—and does not buy $400 hammers.

Hammer Awards go to teams of federal employees—and their local public and private partners—who have made significant contributions in support of reinventing government. They must have created an innovative process or program to make government work better, or have made large impacts on government service, achieving bottom-line results, streamlining government, saving money, and solving problems.

The Army has nominated many teams who are improving the way business is done throughout the Army. The National Partnership for Reinventing Government gave Hammer Awards to 21 Army teams this past year.

Hammer Awards: Success Stories of Reinvention

All Hammer Awards had to show real innovation in at least one of the areas of reinvention. At first there were four areas: putting customers first, empowering employees to get results, cutting red tape, and getting back to basics. Later a fifth was added—achieving results

Americans care about—but it was not usually the sole criterion. A nomination was stronger if it also showed bottom-line savings, cost avoidance, or other resource impact and if it demonstrated strong partnership—interagency, intergovernmental, private, or nonprofit.

The Army's Hammer Awards for 1999 all demonstrated innovation in at least one of the original areas of reinvention—often in two or more.

Putting Customers First

Army Energy Program Team Reduces Air Pollution, Saves Over $2 Billion

The Army Energy Program Team, led by the Army Logistics Integration Agency, includes members from the Pentagon's Army Logistics and Installation Management staff and the Army Corps of Engineers Installation Support Center. Its mission is to reduce Army utility bills and environmental air pollution.

Its approach is direct assistance to Army installations. The team conducts on-site energy technical analysis, evaluation, and training, culminating in an energy awareness seminar tailored for the base it is visiting. The seminar tells the commander how to conserve energy and raise energy use awareness among employees and residents, focusing on energy conservation opportunities that require little or no spending. The seminars also promote a sense of team effort towards energy conservation. The team does about 20 energy seminars a year.

Over the years it has operated, the Army Energy Program Team has directly contributed to reducing energy consumption in Army buildings by more than 21 percent. This has led to a cost avoidance of nearly $2.1 billion.

The team's efforts are also directly responsible for the Army's reduction of environmental air pollution. In 1997 alone, Army facilities reduced emissions of carbon dioxide, sulfuric oxide, and nitrogen oxide by over 300,000 metric tons.

The Army Energy Program Team has ensured the longevity of the Army's conservation effort by providing training to some 276 installations worldwide and instilling command emphasis.

USAREUR Acquisition Development Assistance Team Reinvents Contracting Methods To Accommodate European Drawdown

The Acquisition Development Assistance Team at the U.S. Army Contracting Command Europe's Regional Contracting Office in Seckenheim, Germany, was created to reinvent the way construction, repair, and non-personal services are purchased for the U.S. Army in Europe.

The team was Contracting Command's response to a dramatic drawdown, since 1991, of Army force structure in Europe, along with an unprecedented increase in operations tempo. Many support activities were having a difficult time meeting their mission responsibilities. Custom-

ers, pressed for time, felt contracting procedures were bureaucratic, cumbersome, and inflexible. To remedy this situation, the Acquisition Development Assistance Team built on existing acquisition reform initiatives to develop a modified contracting method that would establish a true partnership among all those involved: customer, contracting, and commerce. To draw on the experience of the private sector, the team brought in industry representatives to tell the government the best way to get the job done. The result was the Customer, Contracting, and Commerce Process, called C3, which established a customers-first environment in installation contracting.

The procedure begins with a meeting of customer, contracting staff, and commercial representatives at the proposed work site to define the work requirement. This site visit allows for a free flow of ideas and recommendations from both government and private sectors. Competing firms then submit statements of work in the form of unpriced technical proposals. The customer evaluates these, then requests the firms with technically acceptable proposals to submit priced proposals for further evaluation. The award goes to the firm whose proposal represents the best value to the U.S. government.

The C3 process has been adopted by all U.S. Army Contracting Command Europe contracting offices. Savings in contracting time, manpower, and dollars have been substantial--and post-award changes and disagreements are almost nonexistent, since the government is getting what it wants the first time.

SBCCOM Integrated Product Team Improves Smoke Generator, Cuts Maintenance Cost

After Operation Desert Storm, the U.S. Army Office of the Product Manager for Smoke and Obscurants, at Aberdeen Proving Ground, Maryland, set out to make material changes to the M157 Smoke Generator Set, to incorporate critical improvements in safety and reliability. The Product Manager put together a dedicated Integrated Product Team (IPT) that included outstanding engineers and technicians from various government agencies. It became known as the M157/VEESS (for Vehicle Engine Exhaust Smoke System) Integrated Product Team.

The IPT asked the customer—the soldier in the field, after Operation Desert Storm—to assess the existing system and suggest improvements. The team also examined the existing sustainment data in terms of spare and repair parts and learned that many were high demand or sole source. They decided to accelerate the introduction of new spare and repair parts, selecting parts that combined lower procurement costs with operational improvements. The joint IPT and partners in industry introduced several improved and less expensive spare/repair parts, that saving $10.2 million in operation and sustainment costs, with an investment cost of only $400,000. Early introduction of these parts helped build up the inventory for the future system and improved the current fleet readiness from 60-70 percent to over 95 percent.

The team's "modernization through spares" success and the readiness improvements, combined with a technical breakthrough, led to funding for a new and upgraded smoke system. The new M157A2 could use any mid-viscosity fuel to generate smoke to obscure large areas (instead of relying on unleaded gasoline, like the old system) and eliminated the old system's operational and safety deficiencies. The IPT awarded a best value production contract based on a performance specification for both the system itself and the spare and repair parts. Off-the-shelf replacements for such components as electrical relays and light assemblies resulted in significant savings.

Corpus Christi Army Depot Material Management Process Improvement Team Streamlines Repair Parts Management

Corpus Christi Army Depot is the Army's only organic facility for helicopter repair and overhaul. It provides these services for several different types of aircraft from all branches of the Department of Defense. The process is complex and requires the coordination of numerous artisans, materials, equipment, and facilities.

One of the greatest challenges was getting the right part to the right person, at the right place and at the right time to meet production schedules and satisfy the depot's customers. The existing process of managing material was expensive—costing the depot over $19 million annually—and inefficient. The estimated average time to perform every step in the material management procedure was 365 days.

A core Material Management Process Improvement Team set out to review the process and find ways to shorten the turnaround time, which would ultimately reduce costs. The core team—seven people representing the various organizations involved in the process—first mapped out the process in general terms, then realized the real expertise was with the artisans who actually performed the specific tasks. The team solicited information from over 250 artisans for the development of a detailed flow diagram of the entire existing process. The dialogue required by this task helped identify many inefficiencies and innovative opportunities for improvement.

Having established the "as-is" dimension of the process, the team began the next phase: developing the "to-be" process. As the team formulated preliminary recommendations, the people who would be most affected by the proposed changes reviewed them and offered their opinions. Consensus was reached on 34 recommendations that, if implemented, were expected to reduce the turnaround time to 99 days and save the depot some $8 million.

Implementation is in progress. But the initiative has already achieved one important result: increased communication within the depot. Employees realized that the process was their process and that they did have a say in what would be done. The initiative was a partnering of management and workforce to foster creative thinking and bring about significant and positive change.

III Corps and Fort Hood Army Community Services Naturalization Team Smoothes Path for Non-Citizen Soldiers

Fort Hood is the Army's largest installation, with approximately 42,000 soldiers assigned. A significant number of the soldiers—over 700 as of August 1998—are not U.S. citizens. Non-citizen soldiers must obtain citizenship to stay in the Army for more than eight years. To help them and their families, the III Corps and Fort Hood Army Community Services established an installation Naturalization Program.

Applying for citizenship is a time-consuming process that usually takes 15-16 months. The Army Community Services Naturalization Team established a partnership with the San Antonio office of the Immigration and Naturalization Service (INS) to expedite the processing of citizenship applications for Fort Hood soldiers.

Fort Hood Army Community Services employees do more than provide information and assistance; they also function as reviewers for application packets, in place of the INS reviewers 150 miles away in San Antonio. Soldiers no longer have to spend time and money on travel and long-distance phone calls to the INS office.

The INS realized the importance of this pro-

gram and granted Army Community Services the right to mail naturalization applications directly to the San Antonio office. The applications from Fort Hood are processed separately from the hundreds of others the INS receives each month. Among other benefits, the partnership allows the Naturalization Team to prioritize time-sensitive cases, such as those of soldiers nearing reenlistment.

By providing assistance and local review and even hosting naturalization ceremonies on post —the ceremonies used to be in Waco, 60 miles away—the Naturalization Team has been able to reduce the length of the naturalization process from 15-16 months to 4-6 months.

Fort Hood Financial Program Team Helps Soldiers Work Out Financial Problems

Recognizing that personal financial readiness is a necessary component in mission readiness and productivity, Fort Hood has organized a coalition of military and civilian professionals to provide comprehensive financial education and counseling services for the Fort Hood community.

Financial problems and household debt are among the top sources of soldier and family stress. They can also make the soldier a liability to the unit, forcing the leadership to contend with creditor phone calls and letters, administrative actions such as Uniform Code of Military Justice procedures, or actual non-deployability because of financially related incidents. The sheer size of the Fort Hood population made for a situation too large for the Army Community Services' small Consumer Affairs and Financial Assistance Program (CAFAP).

So the Fort Hood Army Community Services entered into partnership with the local Consumer Credit Counseling Service, a non-profit agency, and the Texas Agricultural Extension Service of Texas A&M University. The CAFAP would act as the "umbrella" entity for the whole enterprise, overseeing all administrative details, dealing with commanders and community leaders, and providing technical oversight. CAFAP also undertook to train 80 soldiers as unit financial counselors, called Command Financial Specialists.

Each battalion-sized unit now has a Command Financial Specialist to whom commanders refer financially troubled personnel. The Specialist encourages the client to help himself or herself with "informal" debt management and serves as the screening point for sending the soldier on to formal debt management through the Consumer Credit Counseling Service, financial education through the Texas Agricultural Extension Service, or direct financial aid through Army Emergency Relief.

The Consumer Credit Counseling Service maintains a full-time office on post and manages formal debt-liquidation cases for military clients who need in-depth assistance. The Texas Agricultural Extension Service provides three education experts who plan, develop, and conduct preventive education classes in personal finance and regular "on the job" training for all Command Financial Specialists.

Synergistic cooperation among all the partners and the Command Financial Specialists has made the program a major success. During the first year of operation, Fort Hood soldiers were able to pay down approximately $657,700 of $2.3 million owed to their creditors. About $721,000 was saved through soldiers being released from contracts, and soldiers saved about $1.1 million directly through budget counseling, education, and negotiated reductions in payments and interest. Commanders cite the program as a "combat multiplier," meaning that soldiers are mission ready once their financial affairs are in order.

Landstuhl's "Project K" Team Develops Paperless Clinical Record, Reinvents Family Advocacy Case Management

"Project K"—a reinvention initiative pioneered by the U.S. Army Family Advocacy Program in Europe—was originally a junior officer's idea for increasing efficiency, decreasing costs, and improving the quality of patient care available to military families. The idea caught the attention of Brigadier General Kevin Kiley, Headquarters USAREUR Regional Medical Commander; he championed it, and eventually it was nicknamed from his initials.

The mission of the Family Advocacy Program is to provide assessment, treatment, and case management services to military families experiencing domestic violence. But at Landstuhl Regional Medical Center, the staff realized that their clinicians were not seeing many patients. They worked hard, but paperwork seemed to take up an inordinate amount of their time—especially a 13-part medical record and the procedures of a committee that investigated allegations of child and spouse maltreatment. As one of the supervisors said, "We weren't asking 'How is the patient?' We were asking, 'Did you finish the paperwork?'"

An idea began to take shape: design and build an automation system—a paperless clinical record—that would capture and maximize the utilization of data; streamline the administrative work flow; remove the paperwork burden from clinicians so they could focus on patient care; and produce reliable data on how services are used, to help in planning. Later an additional goal emerged: to arm commanders at all levels with high-quality data to prevent domestic violence and contain its impact on military readiness, family health, and the community.

The staff at Landstuhl set out to build a prototype for local use. But as the idea became widely known, "Project K" became the model for a larger effort by the Army Family Advocacy and Social Work Service, which badly needed a case management database. Case management was one target of the "Project K" reengineering strategy—especially the time-devouring Case Review Committee procedure that had been one of the staff's original problems. The Family Advocacy Program needed not only automation, but a better approach to case management. The largest problem with the Case Review process was that it treated every allegation the same way: whether a child had been injured or merely left unattended for a short time, policy required a full medical examination, a 10-13 page written report, and a Committee decision on whether the allegation was substantiated. A Process Action Team at Landstuhl devised a way of dealing with each case on its merits, instead of applying a "one size fits all" policy. The cost savings were estimated at $58-130,000 per year at a single military hospital.

Meanwhile the new Social Work Service Management Information System was being built, drawing on the efforts of the Landstuhl staff as well as a technical team. One of the first successful automation endeavors of its kind, it has been adopted Army-wide and is expected to cut paperwork in social services by 90 percent.

Empowering Employees To Get Results

SBCCOM Technology Transition Team Develops New Textile Technology for Inflatable Shelters

A four-person team at SBCCOM's Soldier Systems Command (SSCOM) has developed a strategy for getting technology fielded as soon as possible, eliminating a lengthy engineering cycle.

Developing new technology and inserting it into a usable Army item usually takes four to eight years, following a linear path. The first phase, technology development, lasts two to four years. Once feasibility has been demonstrated, the technology enters the engineering

development phase, where it is tailored for a specific application. This takes two to four more years; only then does the item enter production. Items may be technologically obsolescent before they are manufactured.

The Technology Transition Team at SSCOM did something different. They ran both phases at the same time.

Working closely, they were able to identify an emerging textile technology that could be the solution to a production issue. Rapid insertion of the new technology into the production contract introduced risk—but the benefits to the soldier and the potential cost savings outweighed the risk.

The technology was to be used for rapidly deployable inflatable structures, supported by high-pressure inflatable arches—called "airbeams"—instead of metal frames. They tailored it for insertion into a newly awarded production contract for chemically and biologically protected shelters. This allowed immediate incorporation of performance-enhancing and cost-reducing technology and eliminated two to four years of engineering development. The team was empowered to go immediately to production, which resulted in savings of $5 million.

The airbeam-supported shelter is being fielded as a Large Area Night Maintenance Shelter, which will provide enhanced maintenance capability for vehicles and aircraft during extreme environmental and blackout conditions. Compared to traditional metal-frame structures, it is lighter, lasts longer, and can be erected faster by fewer personnel. It also provides chemical warfare protection to soldiers.

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USACE's Alaska District Strategic Planning Project Team Improves Environmental Cleanup Planning

USACE's Alaska District Strategic Planning Project Team has pioneered a program—long talked about but never tried—to consolidate sites requiring environmental cleanup and save millions of dollars in the process.

The earlier cleanup process for Formerly Used Defense Sites and other federal sites requiring environmental restoration was to prioritize them on the basis of risk to people or the environment. A high-risk site might be located close to a lower-risk site, but when cleanup teams went into the region, only the high-risk site would be cleaned up. The lower-risk site would have to wait its turn. This approach was inefficient and prohibitively expensive. The remoteness of the sites, extreme weather conditions, and a short construction season complicated the cleanup effort, so that mobilization and demobilization could cost $250,000-500,000 per event.

For years USACE's Alaska District had been debating a way they thought might be better: to consolidate all federal sites into geographical zones and to plan cleanups by zone. But red tape in contracting and funding stopped them from doing this.

Finally in 1997 the senior management at the Corps of Engineers Alaska District, through partnering with the USACE leadership and outside regulatory agencies, was empowered to develop and implement this initiative. They titled it Coordinated Comprehensive Cleanup, or C3, and established a Strategic Planning Project Team to define the geographic zones and plan the cleanup. The zoning divided Alaska into 24 areas, some of which contained up to 21 federal sites.

District employees were empowered to test the new process on three geographic zones to see how much could be saved in a year. Taking advantage of strategic planning, shared management and resources, coordinated mobilization, and joint community relations for multiple sites, they addressed all priority sites within a zone. They replaced the one site/one contractor approach with a multi-contractor Total Envi-

ronmental Restoration Contract (TERC), a contracting mechanism that allowed continuity across all sites and through all phases of cleanup. They proved the new process could work. Over the first year they saved almost $3 million.

Since Alaska has 24 zones, the savings associated with the C3 process will be substantial. USACE Alaska District predicts that over a five-year period, savings could be $7-9 million in a single zone.

USACE's Akutan Naval Station Team Does Environmental Cleanup Faster for Less

USACE's Alaska District strategic planners, embarking on their new Coordinated Comprehensive Cleanup initiative, selected the formerly used Defense site Akutan Naval Station for their first test project. They entrusted it to a team that included not only Alaska District Corps members, but partners from the Alaska Department of Environmental Conservation, the Aleutians East Borough, the City of Akutan, and the Jacobs Engineering Group.

The abandoned Akutan Naval Station typified the difficulties of environmental cleanup in Alaska. It was on Akutan Island in the Aleutian chain, 750 miles from Anchorage—a very remote site, accessible only by boat or float plane. Because of extreme weather, it could be visited only 60 percent of the year. The City of Akutan was a village with 85 local residents, nearly 100 percent Aleut. Its main infrastructure consisted of a small boat dock and a seafood processing facility.

The traditional cleanup approach would have involved multiple investigations and studies—strung out over a period of eight years—that would eventually have led to a cleanup action. Instead, the Akutan Naval Station Team chose a modified process which began with a cleanup and compressed the multiple investigations into one year. The Alaska District entered into a turnkey Total Environmental Restoration Contract with Jacobs Engineering Group, with the same cleanup objectives as in the traditional process, to end in the same degree of risk reduction for people and environment.

Partnering with all the stakeholders—especially the Aleut community, who had the most at stake—the team initiated a process that compressed cleanup and investigations into one field season. They achieved site closure faster and at better value than could ever have been done under the old process, trimming five years off the traditional schedule and saving the government $6.25 million.

The project was so successful that it has set a precedent for cleanup of other sites in Alaska.

Charles George Superfund Project Team Solves Groundwater Contamination Problems

USACE was the Army partner on the Charles George Superfund Project Team, which consisted of federal, state, and local employees and private contractors working to solve groundwater contamination problems at the Charles George Superfund Site.

The site was a 70-acre municipal and hazardous waste landfill in Tyngsborough, Massachusetts. The landfill was closed in 1983 when contaminated groundwater from it was found in nearby drinking water wells. At the time, the landfill site was capped; its gas was collected and burned; and a water line was constructed to carry groundwater from it to a lagoon. The lagoon contents were treated, as often as every four months, at an interim groundwater treatment plant and discharged to a nearby body of surface water.

The interim solution had its own problems. Water treatment prior to discharge was complicated and expensive. Iron deposits and organic buildup affected the transfer lines and pump stations. The permanent remedy originally

planned for the site was to build a large groundwater treatment facility and operate it for the next 30 years.

But by the late 1990s, everyone involved wanted a better solution. The Charles George Superfund Project Team—for which USACE managed all major design and construction at the site—undertook investigations to find a less costly alternative.

They discovered that a sanitary sewer was to be constructed less than two miles from the Superfund site. This new information sparked a solution better than anyone could have predicted. The team determined that if they could get the contaminated water to the sewer, they could save the government about $5.6 million in construction and operating costs. Equally important, this solution would better protect the environment. Further, a new sewer line extension would help nearby property owners, since there were serious septic problems in the area.

To end the existing treatment costs sooner, design and construction of the new sewer line were placed on a fast-track schedule. The Charles George team was able to cut through bureaucratic red tape to get all the permits needed. Construction of 7,600 feet of sewer line and two pump stations was complete in about three months. The contaminated groundwater began being discharged through the sewer line for final treatment at an existing, publicly operated treatment facility.

The team's efforts resulted not only in major cost savings, but in greater protection to human health and the environment and long-term benefit to the community.

Fort Carson's Mountain Post BASOPS Team Empowers Itself for Better Service

Fort Carson, the "Mountain Post," relies on one group for all aspects of infrastructure operations and maintenance: its BASOPS Team. These people—comprising the Directorate of Public Works (with its BASOPS contractor) and the Directorate of Contracting—are responsible for utilities, heating and cooling, roads, landfill, sewage treatment, and the upkeep of over 7.6 million square feet of facilities.

There was a time, several years ago, when the two directorates were not a single team. Their leadership observed that the two sets of employees, while technically perhaps the best in the business, did not see themselves as stakeholders in the practice of delivering customer satisfaction. They were hesitant to make independent decisions, recommend improvements, or trust their fellow employees to do the right thing.

Then the Director of Public Works functionally reorganized his directorate to create a BASOPS Division whose primary mission was to enhance customer satisfaction with fewer resources. So intelligently was this done that—unlike most reorganizations—it empowered employees, both government and contractor, to see for themselves the value of placing customer satisfaction first.

They began to find methods for ensuring excellence in all the services they performed. They discovered first Total Quality Management and then the Baldrige criteria; they introduced Baldrige-driven processes and procedures that were designed with one goal: continuously improving customer satisfaction.

Soon results began to show. Costs per service order dropped; so did preventive maintenance costs. Savings in other areas emerged. At the close of FY 1997, the BASOPS contract finished at $1.4 million below what had been projected—an unheard-of circumstance in an era of contractor overruns. Customer complaints about service orders dwindled to an average of one a month. The team began to win awards and became a finalist in the President's Quality Award Program.

The team met and exceeded Army require-

ments, then went on to test themselves against international benchmarks like the ISO standards. The strength of the Mountain Post BASOPS Team is not only in discovering and institutionalizing improvements leading to customer satisfaction, but in empowering employees to do more on their own.

Corpus Christi Army Depot Work Center Creates Continuous Improvement Process Team, Solves Problems Through Teamwork

Corpus Christi Army Depot—the Army's only organic facility for helicopter repair and overhaul, serving all branches of the Department of Defense—is an environment where teamwork is vital and constant communication is a necessity, so that production schedules can be met and external customers can be satisfied. The depot has sponsored a training program called HEARTS (Honesty, Ethics, Accountability, Respect, Trust, Support) that challenges individuals to go beyond perceived boundaries and work with others to solve problems and attain goals. Members of one work center, the UH-60 Transmission/Gearbox Shop, were so inspired by the HEARTS training that they formed their own Continuous Improvement Process team to solve problems within their own work center.

One problem was parts inventory control. The shop had bins for the storage of National Inventory Control Point Program parts, but materials were being removed for assembly line repair. No records of this practice were being kept; the parts were not being replaced; and the programs for which they were intended developed cost overruns, while the assembly line was getting parts for little or no cost.

The Continuous Improvement Process Team set out to rectify this situation by devising a record-keeping system to ensure that parts would be adequately stocked and the right customer would be billed. All parts required to repair—for example—a tail rotor gearbox were listed on a form, with quantity and price and the name of the mechanic doing the work. Mechanics could fill out the form in two to five minutes. The same sheet served as an order form for replacement parts, and the person ordering made sure the material was billed to the right customer.

It worked. The parts bins stayed full, and the customer being supported paid the proper amount for repair work. During the first ten months the system was in full use, the shop repaired or overhauled 126 assets and charged $367,631 back to the assembly line for parts. When the helicopters with these repaired assets left the depot, the operational units that owned them got the bill—not the National Inventory Control Point programs.

The Continuous Improvement Process Team continues to meet regularly, because there are always issues. It serves as a change mechanism and a forum for professional growth, influencing the shop's decisions for the present and future.

Cutting Red Tape

Soldier Systems Command "Partnering with a Field Unit" Team Brings Designers and Warriors Together

The Army's traditional process for developing new equipment is long and complex. From the time a field user identifies a deficiency or unfilled need, through staffing and development and prototype and testing and production, to the time an item actually reaches the field, years may elapse. For expensive or broadly fielded items, there are reasons for this drawn-out process. But for small, inexpensive items, a team of 11 people at Natick Research, Development, and Engineering Center has shown there is a better way.

The new process being pioneered by Soldier Systems Command (SSCOM) is called Partnering with a Field Unit. The objective is to provide an opportunity for warrior and designer to work together informally to optimize the development and integration of equip-

ment and systems. Typically, a field unit requests support. The equipment developer assesses the need to see if it has broad application across the Army. If so, there is a partnering opportunity. Prototypes are built; field units assess them, and feedback from the using soldier comes in immediately. This approach speeds design maturation while reducing prototype and test costs.

The partnering concept began in March 1997, when the team members at Natick responded to a request from Fort Bragg to support the 3rd Special Forces Group. They helped set up a staging base for 200 soldiers during eight weeks of desert training. At the outset, the team set up ammunition solar covers to protect troops from the harsh desert environment in field feeding and work areas. When the soldiers saw the solar fabric, they requested excess pieces to build "hide site" covers—visual concealment and solar protection for soldiers located in rocky terrain where they could not easily dig deep foxholes. The team offered to design and fabricate two types of "hide site" covers with telescoping poles for the Group to assess. One version, the Small Unit Solar Shade, was later described in SSCOM's *Warrior Bulletin*.

There the Commanding General of the 1st Infantry Division read about it. He asked the team at Natick to work with his Combat Observation Lasing Teams, who would undergo training at Fort Riley in August.

The team had already realized the possibilities of partnering with a field unit when they were working with the 3rd Special Forces Group. They proposed it as an initiative to SSCOM's command staff and followed this up by seeking opportunities to test the viability of the concept. They fabricated six Small Unit Solar Shades—an updated version based on user input from the 3rd—for the Combat Observation Lasing Teams. The Lasing Teams proposed several enhancements and sent two senior NCOs to work directly with team members and speed the design maturation. The team prototyped a third version of the Solar Shade for the Lasing Teams to use at the National Training Center in November. They continued to refine the design, working next with the 1st Armored Division to test one- and two-man variants.

They were already working on a second project. The 248th Medical Detachment at Fort Bragg had asked SSCOM to help solve a leak problem with early versions of the16 x 16 Extendible Tent. The Partnering Team designed and prototyped two interlockable Rain Caps to cover the tents and shipped them to the 248th for a December training mission. Despite heavy rains, the Caps proved satisfactory. Other units heard of them and wanted them. The team continued to enhance the design.

Meanwhile they had persuaded SSCOM to adopt Partnering with a Field Unit as a formal initiative and submit it for the *United States Army Reinvention and Quality Initiatives Annual Report 1998*. In that report they pointed out their work's significance to the warrior: "The Small Unit Solar Shade will allow the [reconnaissance] team to operate around the clock, providing battalion commanders with a significant increase in targeting and reconnaissance information. [It] will reduce soldier heat stress injuries and protect them from extreme temperature fluctuations. . . while increasing survivability. [The Rain Cap provides] a work area where equipment and electronics are not exposed to high levels of moisture. Finally it is a huge improvement to the quality of life of the users. The significance of a dry sleeping bag to a tired soldier cannot be overstated."

USACE's Okinawa Facility Relocations Implementation Team Saves U.S. Over $35 Million Through Innovative Negotiation

A team of negotiators from USACE's Japan Engineer District has saved the United States more than $35.8 million.

Under a longstanding arrangement—the Host

Nation Funded Construction Program—the Government of Japan constructs buildings and other facilities for use by the U.S. military services in Japan. The established process requires the Japan Engineer District to prepare the criteria that define the requirements, using its own staff or Architect-Engineer contracts; the Government of Japan then designs and constructs the facilities. During this second phase, the Japan Engineer District reviews the designs for technical, functional, and safety sufficiency (this is engineering surveillance) and observes construction for acceptability (this is construction surveillance). The United States funds the criteria preparation and the engineering and construction surveillance, using Military Construction appropriated funds. Individual installations do the master planning; this is paid for with Operations and Maintenance funds. The Government of Japan pays for the actual design and construction.

Another agreement, the Special Action Committee Okinawa agreement, was signed in December 1996. It concerns a new multibillion-dollar relocation program on Okinawa: the Government of Japan will construct replacement facilities to allow for consolidation of U.S. forces. The Okinawa Facility Relocations Implementation Team was formed to negotiate the specific terms under which this would be done.

There was a problem: to follow the process already established for Host Nation Funded Construction would place a double burden on U.S. resources. Host Nation Funded Construction and the special Okinawa construction program would be competing for the same manpower and dollars, in the aspects of the programs that involved U.S. participation.

The U.S. government was in a vulnerable negotiating position, because the U.S. presence in Okinawa was an emotional issue for Okinawans. But the team members had long experience with the Government of Japan; this, along with their depth of engineering expertise, gave them the necessary credibility. During negotiations, they offered the Government of Japan many options, but held their ground on key issues and leveraged their knowledge of existing Government of Japan processes to strengthen the U.S. negotiating position. They were resourceful in developing acceptable funding strategies and implementation details.

Finally they worked out a new process, which both governments approved. The Government of Japan did not have procedures in place to give funds directly to U.S. agencies, but they could and would award Architect-Engineer contracts, using their own funding, for master planning and criteria preparation. They could also provide contract personnel to supplement the Japan Engineer District's engineering and construction surveillance. This solution directly saved the U.S. over $35.8 million in direct costs, while allowing the Japan Engineer District to manage these services and provide oversight.

Texas Pollution Prevention Partnership Links State and Federal Environmental Efforts

The Texas Pollution Prevention Partnership is the first of its kind: a formal alliance between federal and state agencies working toward a shared goal. It teams federal facilities and a state regulatory agency—the Texas Natural Resource Conservation Commission—to promote pollution prevention as government agencies' standard way of doing business. Both state and federal participants foster the use of new technologies to achieve their environmental objectives.

Among the Partnership's 25 members, major Army participants include Fort Hood, Fort Bliss, Corpus Christi Army Depot, the Army Reserve, and the Texas Army National Guard.

The Partnership sponsors non-regulatory onsite pollution prevention technical assistance visits

to various installations. The visits, conducted jointly with staff from the participating base and key DoD environmental service personnel, identify opportunities for reductions in hazardous waste, non-hazardous waste, air emissions, and use of water and energy.

For instance, through a technical assistance visit, Fort Hood participants gained flexibility and skill to cope with stricter environmental laws and regulations. Fort Hood devised a waste disposal and environmental program that combines in-house resources with a comprehensive single contract concept that draws together the services of many contractors, engineering consultant firms, in-house engineers, and environmental specialists. The arrangement holds the contractor responsible for waste disposal as well as environmental concerns. Fort Hood's cost avoidance and savings total more than $3.5 million.

Another direct result of the alliance is that DoD is partnering with the Texas Natural Resource Conservation Commission on the Small Town Environmental Program, which offers self-help to poor Texas communities to resolve their water and wastewater needs. Army Reservists are completing a wastewater sewer project for the community of Clarksville in East Texas. The town will gain an improved infrastructure without the conventional costs for labor and heavy equipment, while the Reservists gain the opportunity to use the project for training. Similar cooperation may be extended to other communities.

The Texas Pollution Prevention Partnership has proved its value and become the nationally recognized model for pollution prevention partnering. Similar projects are being planned for several other states.

USACE Navigation Maintenance Team and Arkhola Sand and Gravel Company Form "Win-Win" Partnership

The Army Corps of Engineers' Little Rock District Navigation Maintenance Team successfully partnered with the private-sector Arkhola Sand and Gravel Company to save the government money and give the company an opportunity to make money—with additional benefit to commercial navigation.

The Arkansas River is a major waterway, navigable from Tulsa, Oklahoma, to its confluence with the Mississippi about 500 miles upstream from New Orleans. On it is the Port of Little Rock, a diverse industrial community centering on the Arkansas River Port. Keeping the waterway cleared of sand and gravel is a responsibility of the Army Corps of Engineers.

The usual process for cleaning accumulated sand and gravel from the waterways downstream of James W. Trimble Lock Number 13, outside Little Rock, was for the Corps of Engineers to contract with a dredge for removal and disposal of sediment. These dredgings cost about $50,000 each time.

Then Arkhola Sand and Gravel Company came to the Corps with an offer to remove the accumulated sediment from the lock approaches for free if the company could sell the material it dredged. Instead of saying, "No, we already have a way of handling that," the Navigation Team searched to find a way that was acceptable to both parties and in compliance with the laws and regulations concerning such work. They developed a Memorandum of Agreement between the U.S. Army Corps of Engineers and Arkhola Sand and Gravel Company, permitting the company to clean the waterway at no cost to the government and sell the dredged material.

The partnership agreement saves the Government $50,000 per dredging, and Arkhola benefits through sales of the sand and gravel.

Commercial navigation benefits because Arkhola can mobilize to clear the accumulated sediment 18 days faster than the Corps can mobilize a contract dredge, so there is less chance of an interruption to navigation.

Boston Harbor/Cape Cod Canal Implementation Team Reinvents Dredging Requirements, Saves $1.5 Million

The U.S. Army Corps of Engineers' New England District was contracting to dredge two major shipping channels: Boston Harbor and the Cape Cod Canal. The Boston Harbor contract had already been awarded. It involved dredging contaminated sediments out of the harbor, placing them in disposal pits, and covering them with sand. The Corps planned to buy the sand from gravel pits in the Greater Boston area, at considerable cost. This course of action would require some 10,000 trips through the city streets by dump trucks hauling sand, as well as another expensive round of unloading and loading when the sand arrived at the harbor and was transferred to barges. The sand from dredging the Cape Cod Canal would be disposed of in the ocean.

The Boston Harbor/Cape Cod Canal project team—consisting of representatives from the Boston Harbor contractor, the Massachusetts Port Authority (customer for the harbor work), the Corps of Engineers, and two Massachusetts permitting agencies—realized they could reinvent the process, with direct savings of $1.5 million and significant environmental benefits. They could also avoid substantial administrative costs by consolidating two projected contracts into one.

Reinventing the process was not simple. Very difficult contractual, legal, and regulatory hurdles had to be overcome. Environmental experts had to assess the plan. But the team had support from the organizations' top managers, and discussions that would normally take several weeks were accomplished quickly by phone. They overcame all obstacles in only two to three months, so both channels could be dredged on time.

Under the new arrangement, the Boston Harbor contractor also dredged the Cape Cod Canal, at no cost to the government and without the need for a separate contract. The clean sand removed from the Canal—200,000 cubic yards' worth—was approved by all agencies as proper cover material for the Boston Harbor disposal pits. It was transported by water from the Canal to Boston and discharged directly into the disposal pits.

Direct savings amounted to $1.5 million, not counting the avoidance of administrative costs. Ten thousand truckloads of sand were not carted through the streets of Boston—a significant environmental benefit—and the sand from the Canal was used, not wasted. Neither dredging project was delayed: a matter of importance for shipping interests and others whose livelihood depended on keeping the waterways open. The success of the effort assures that serious consideration will be given to similar ideas in the future.

Army Research Lab's Federated Laboratory Team Develops a "Research Multiplier"

After eight years of dramatic drawdowns in personnel and funding, the Army Research Laboratory received a large, technically challenging additional mission: develop the technology to "digitize the future battlefield." That meant finding ways to provide real-time situational awareness and instantaneous processing, fusion, display, and wireless communication of all relevant data to battlefield commanders at all levels in all locations.

There was no way to do this in house. The work was in areas where the private sector was far ahead of ARL's own laboratories—so far ahead that even if ARL could make the investment, it would take years to catch up.

One obvious course of action was simply to

outsource the work through the traditional contracting process. But without in-house expertise, the Army could not intelligently specify what technology was needed and would not know who would be the best supplier to get it from, how to evaluate the technology itself, or how to transition the technology to the user community.

ARL's solution was to invent a completely new way to conduct research and development. The Federated Laboratory (or FedLab) is not the traditional "arm's-length" arrangement with the private sector, which keeps the government experts at a distance from the actual work. Enabled by a new acquisition vehicle called a Cooperative Agreement, FedLab allows a close relationship between the government and the vendor, in order to leverage the best the private sector has to offer while retaining an in-house competence to assimilate and use the results.

The FedLab concept is the formation of virtual laboratory units to augment the capabilities of ARL directorates working in technical areas relevant to building a scientific foundation for the digital battlefield. The work is carried out under ARL leadership and direction, both in-house at ARL and at the laboratories of ARL's various FedLab partners. The program is fully funded by the government, though the partners can invest their own money in facilities or related programs.

The process was first to define the relevant technological areas, then form a consortium for each area, to execute the program in partnership with ARL. Each consortium would include at least one industry partner as the consortium lead, one major university partner, and one Historically Black College or University or Minority Institution. Senior representatives of all the partners would form a Consortium Management Committee, chaired by a senior ARL technical manager as the Cooperative Agreement Manager. Cooperative Agreements would last long enough for the fruits of the basic and applied research to be realized. To enhance technology transfer between ARL and the private sector partners, up to 20 percent of ARL personnel would work in the partners' labs in long-term staff rotations, while a like number of the partners' personnel would work at ARL.

At the time of the Hammer Award, FedLab had been operating for over a year and a half. Three consortia were in being, with 87 scientists and engineers from industry, 72 from ARL, and 223 participants from academia. Four of ARL's five directorates were participating. FedLab was already proving to be a "research multiplier," as concrete benefits began to appear. The working relationship between ARL and the very best of the private sector had been significantly enhanced, in large part because of the scientist exchange. ARL was heavily leveraging not only the expertise of its partners, but their existing state-of-the-art facilities. The partners had not only invested their own funds in new facilities specially designed for the digitization effort—they had also refocused their in-house programs to align more closely with FedLab efforts.

Getting Back to Basics

Medical Material Center Europe's Readiness Process Action Team Increases Productivity 95 Percent

At the U.S. Army Medical Materiel Center, Europe—a subordinate command of the U.S. Army Medical Research and Materiel Command—a six-person Readiness Process Action Team discovered a way to increase the productivity of one aspect of its mission 95 percent.

The Readiness team became aware that the Center's process for managing the assembly, reconstitution, and disassembly of medical assemblages was not working as it should. Excess medical materiel was overwhelming the system. Although excess materiel was being reported and advertised to supply offices, very few items were ordered by other organizations. The Center's own customers were encouraged

to visit the medical materiel warehouses and look through the excess materiel to satisfy their requirements, but few did. The majority of the excess medical materiel ended up at the Defense Reutilization and Marketing Office.

The Readiness Process Action Team knew this materiel could be reutilized by the Center's customers, but only if it could be made available in a more timely and efficient manner. The existing process was cumbersome, and no one knew with any certainty whether a given item was available. The team realized that the solution was to put the necessary information online.

They developed a customer-friendly software program that reinvented the processes of advertising and distributing excess medical supplies. It enabled supply offices and health care professionals to review excess materiel easily and select items that met their requirements, then order on line. The items were promptly shipped as free issue.

The new process was immensely successful. During its first 21 months, the Center shipped over $9 million worth of excess medical materiel to its customers, who could then use the money they saved for other mission requirements.

But the team did not stop there. They enhanced the "free issue" program to allow customers to pre-request specific items; if the item became available, a message automatically notified the requester. They also made the entire excess materiel screening process "transparent" to the customer: when a routine electronic order was placed with the Center, the computer automatically screened each request against the excess inventory and, if there was a match, immediately informed the customer that the item was available "free issue" from excess stocks.

The team did not stop there, either. They realized they could automate the process of redistributing excess medical materiel into the medical set, kit, and outfit assembly program—that is, an item which was part of a larger assemblage could be grouped with other, related items to make up that assemblage. Based on the team's recommendation, the Center's programmers developed a software program that compared medical materiel requirements for Stock Fund, War Reserve, and selected Medical Field Sets, Kits, and Outfits with excess materiel managed by the Center's Assembly, Reconstitution, and Disassembly Branch.

Previously, the Branch had used a slow and less-than-accurate manual process. Now they could prioritize requirements and automatically redistribute excess materiel to fulfill these requirements, before the materiel was advertised in the 'free issue" program. They almost doubled their processing capability—773,665 items of materiel, worth about $18.4 million, processed in the first nine months of the new process, compared to 397,549 items over nine months under the old system.

This single initiative increased the output of the assemblage management process by 95 percent and significantly increased its accuracy. This allowed the U. S. Medical Materiel Center, Europe not only to support its European War Reserve mission better, but to expand its capabilities: to satisfy Army War Reserve requirements in Japan, Korea, and Southwest Asia; to improve the medical readiness of Army, Navy, and Air Force medical units it supported; and to provide better support to a State Department/ Defense Department humanitarian mission to the newly independent states of the former Soviet Union.

Fort Campbell's Taylor Dental Clinic Team Proves Dental Care Reengineering Works

The 51 people of the Taylor Dental Clinic staff at Fort Campbell have proved the value of Dental Command's corporate philosophy, the Dental Care Reengineering Initiative (DCRI).

The DCRI aims at maintaining the dental readiness of the force; increasing oral wellness, patient satisfaction, and staff satisfaction; and doing all this with little or no increase in resources. During the first 14 months of operating under the DCRI concept, Taylor Dental Clinic, in partnership with other DCRI sites, led the way in creating a working model of dental care delivery that is efficient, adaptable, and ready for the future.

Before the reengineering, the approach to patient care and scheduling was very different. Typically, the clinic would staff an exam room and "herd" patients into the clinic for routine examinations. Patients would then have to phone the clinic at a specified time during the week to request one of a limited number of appointments. Emergency patients often had to wait for hours and then receive only temporary care aimed at removing the urgency of the complaint.

This approach led to numerous inefficiencies in day-to-day clinic operations. The staff was unfamiliar with individual patients; the absence of individual treatment plans caused inefficiencies in scheduling and wasted a significant portion of the healthcare providers' time. Contract dentists had to be hired; meanwhile, dentists had to perform peripheral administrative duties like ensuring compliance with government regulations. The waiting period for a routine appointment was over six weeks. Only 82 percent of the patients reported they were highly satisfied with their dental care, and only 13 percent were in a high state of dental health.

With the Dental Care Reengineering Initiative, Taylor Dental Clinic did away with the entire exam room approach. Patient care teams were empowered to develop a system for managing the dental needs of a finite group of patients. They focused on building solid relationships with patients, creating an atmosphere of compassion and concern, and using the patient's individual exam results to prepare a formal treatment plan.

The simple act of having employees get to know their patients dramatically improved service within the clinic. Evidence-based treatment plans, designed by the dentist, meant that each patient received highly individualized care.

Using a team approach to the delivery of dental care also meant that dentists could concentrate their efforts in areas that specifically required the skills of a dentist. Administrative assistants took over the peripheral administrative duties like ensuring compliance with regulations; paraprofessionals became responsible for certain aspects of clinical service, like updating patients' records or providing oral health instruction. Freeing the dentist to spend more time with patients allowed the clinic to schedule and treat more patients. The waiting period for an appointment dropped from over six weeks to less than two, for all levels of care.

The staff was also able to shorten waiting time in the clinic. A team of healthcare providers screened walk-in exam and emergency patients and provided any necessary care. Patients were encouraged to phone ahead if they had an emergency, so the staff could target openings in the schedule to provide them "appointments"—not only to minimize their waiting time, but to increase the probability that the care could be completed in one sitting. Time in the waiting rooms was reduced to an average of three minutes (the private-sector standard is eight to ten).

Emphasis on prevention and wellness began to show results in the dental health of the patient population. From 13 percent at the highest level of wellness, the proportion went to 27 percent. Patients at this level require minimum resources to maintain their health. The healthier population is estimated to require 10.7 percent fewer resources to maintain, and Taylor Dental Clinic has already been able to eliminate two contract

dentist positions, saving about $65,000 per position. These and other savings will be allocated to areas that better serve the population's dental needs.

The other major payoff has been in patient satisfaction. Among patients treated at Taylor Dental Clinic, 95 percent now say they would not choose to go anywhere else for care, if given the choice. That level of customer loyalty is a measure of outstanding service.

The Secretary of Defense Productivity Excellence Award

The Department of Defense established the Secretary of Defense Productivity Excellence Award to recognize individuals and small groups who made substantial improvements in the quality and productivity of Defense operations through suggestions, special acts, or other management improvement initiatives. The recipients' contributions must have given the Defense Department verified savings of at least $1 million dollars over a 12-month period. Two Army accomplishments, resulting in savings of $3.2 million, were recognized during Fiscal Year 1999.

Eielson Team Develops Innovative Process for Building a Consolidated Munitions Facility—Better, Cheaper, and a Year Early

Members of the Eielson Consolidated Munitions Facility Management Team developed a process that combined several pre-design, design, procurement, and construction innovations to build a new Consolidated Munitions Facility at Eielson Air Force Base, Alaska. Their teamwork and initiative allowed the building to be completed a year of ahead of schedule, which resulted in savings of more than $1 million.

Innovations included a programming strategy that allowed for revisions based on the user's most current needs; a design approach that drew on Air Force, Army, and Navy pre-design processes to produce a clear performance document; and a two-phase Request for Proposal process that resulted in higher than normal competition and more detailed proposals. The design document specified using the best site available, but envisioned a minimal design—one that barely met users' requirements but did fall within cost guidelines. It identified "betterments" for every building system, including the structure itself, with the expectation that industry competition would provide for some of these betterments.

An Internet-based design review system allowed a comprehensive review by the users; the Base Civil Engineer at Eielson; the Major Command in Hawaii; the Engineer District at Elmendorf Air Force Base, Alaska; and the contractor in Anchorage. The fast-track design review accommodated a fast-track design build.

The contractor was selected on the basis of best value, rather than lowest cost—and he provided all the identified betterments. The facility was substantially complete in nine months —a superior facility, for a very satisfied customer.

The Major Command is now using the team's innovative process for all new design/build projects in Alaska.

Team members were Mr. Gregory N. Smith, Mr. Bernard Marcos, Ms. Laura Walker, Mr. John Schuman, Ms. Christy Watts, and Mr. Byron Dixon.

Team Creates Interactive Business Opportunities Page To Streamline Acquisition Process

The Inter-Agency Business Opportunities Page team—a government consortium led by CECOM—developed, implemented, and now administers an innovative process that significantly improves acquisition practices. The process is an Internet-based electronic acquisi-

tion tool known as the Inter-Agency Interactive Business Opportunities Page.

Formerly, the process of soliciting, receiving, and evaluating proposals, negotiating and awarding a contract, and administering the contract was highly paperwork-intensive. It also involved large numbers of people—both government and corporate—in geographically dispersed locations over a long period. The review and approval process was inflexible and could break down at any point.

The Inter-Agency Business Opportunities Page—originally fielded in just six weeks—uses the Internet to facilitate the acquisition process. It draws on commercial products and Web technologies; users can work with it using only Internet access and a browser. Developed by a consortium of government organizations led by CECOM, it provides both contractors and government offices around the world with a Virtual Contracting Office. Currently serving three contracting offices—at Fort Monmouth and Fort Huachuca and in Washington, D.C.—it is accessed by more than 7,000 contractors worldwide.

The Virtual Office that the Page provides is independent of location and does not require the physical movement of paper. It provides a means for any contracting professional, within the government or outside, to participate in the acquisition process at any point. Now CECOM can perform any acquisition process for any customer in the world.

Because of its cost-effectiveness and technological efficacy, the Inter-Agency Business Opportunities Page promises to revolutionize the way government conducts its acquisition business in the future. During the first year of use, the Page saved more than $2.2 million in manpower costs alone.

Team members were Mr. Craig Bowers, Mr. Mike Thompson, Mr. Manny Adriano, Mr. Emerson Keslar, Mr. Larry Asch, Mr. Steve Lascelles, Mr. Matthew Meinert, Mr. Gary Standorf, and Mr. Mike Stark.

Department of Defense Value Engineering Awards

Value engineering is a systematic functional analysis leading to actions or recommendations to improve the value of systems, equipment, facilities, services, and supplies. Its objectives are to improve quality and reduce cost.

The Department of Defense Value Engineering program provides incentives to both government and contractor workforces to submit ideas for improving products, processes, and production methods. In Fiscal Year 1999, Value Engineering saved the Army $625 million. Most of the recommendations were Value Engineering Proposals—1,901 ideas from government sources, with projected savings of $602 million. Another 154 were Value Engineering Change Proposals—cost-saving recommendations submitted by contractors in accordance with the Value Engineering provisions of their contracts—resulting in additional savings of $23 million.

The Value Engineering Achievement Awards recognize significant achievements in value engineering and promote the use of value engineering by Department of Defense personnel and contractors. The awards program has seven categories: program management; individual or team achievement; procurement and contract administration; value engineering professional; field command; installation; and contractor. In addition, a "special" award is given to recognize innovative applications or approaches that expanded the traditional scope of value engineering. In 2000 the Department of Defense granted Value Engineering Achievement Awards in all categories.

Program Management: Multiple Launch Rocket System Project Office Resolves Weapon System Issues

In FY 1999 the Multiple Launch Rocket System Project Office accrued savings and cost avoidance of $41 million. The Project Office held a number of Value Engineering workshops to resolve weapon system issues and develop less costly approaches. One workshop addressed two of the ten largest cost drivers in the program, the ball screw actuator and the hoist assembly. New maintenance procedures were identified that saved over $28 million. Other Value Engineering workshops proved successful in identifying ways to improve transmission reliability in the Multiple Launch Rocket System carrier and to reduce initial spares costs for newly deployed launchers.

Individual or Team Achievement: USACE's Baton Rouge Value Engineering Team Assists Local Communities in Sewer Project

The U.S. Army Corps of Engineers Baton Rouge Value Engineering Team rendered successful assistance to the City and Parish of Baton Rouge and East Baton Rouge, Louisiana, in a recent sewer correction project. The team offered over $150 million in cost-saving, technically sound proposals for the Parish's $491 million corrective action plan to prevent sanitary sewer overflow. Their contribution showed how Value Engineering can be used to resolve problems and exemplified the diverse ways the Department of Defense assists communities.

Procurement/Contract Administration: SBCCOM Procurement Officer Saves Command $4 Million

Gerald Taulbee, Soldier and Biological Chemical Command's Procurement Officer for the Improved Chemical Agent Monitor, effectively increased his Command's budget by $4 million. His expertise helped resolve a Value Engineering Change Proposal for the Improved Chemical Agent Monitor. He made determinations as to the technical acceptability of the proposal, assessing related International Agreements and obtaining consensus on the settlement instruments and sharing ratios. Through his diligence, the Soldier and Biological Chemical Command significantly reduced the expected cost of this project.

Value Engineering Professional: AMC Value Engineering Liaison Leads Program to 211 Percent of Savings Goal

Nanette Ramsey, at the U.S. Army Materiel Systems Analysis Activity, is Army Materiel Command's Value Engineering Program Liaison. She has led the Value Engineering Program to savings and cost avoidance totaling $396 million—211 percent of AMC's FY 1999 savings goal. Ms. Ramsey has tirelessly promoted the Value Engineering Program across AMC, by means that range from her Value Engineering staff assistance visits to numerous articles published in the *Army Research and Development* magazine. The overall success of the Value Engineering Program has been attributed to her positive demeanor and collaborative approach to management of a dynamic program.

Field Command: Industrial Operations Command Uses Value Engineering To Save Nearly $37 Million

The U.S. Army Industrial Operations Command achieved nearly $37 million in savings and cost avoidance for Fiscal Year 1999. IOC did it by implementing 52 in-house Value Engineering Proposals and 17 contractor-initiated Value Engineering Change Proposals. The Command's aggressive Value Engineering training program instructed several hundred government and contractor personnel in FY 1999 and made the training available to other commands and Services. IOC's "can do" attitude and proactive life cycle value management approach are recognized as a credit to the Defense Department Value Engineering Program.

Installation: Red River Army Depot Exceeds Its Savings Goal by 378 Percent

The Red River Army Depot achieved savings of $7.5 million for FY 1999, exceeding its Value Engineering goal by 378 percent. In addition to the savings, its in-house Value Engineering Proposals resulted in improved safety, reduction in hazardous waste, and elimination of cumbersome manual procedures. Red River Army Depot has been and continues to be one of the most proactive Value Engineering installations in the Defense Department.

Contractor: Los Angeles Contractor's Work Saves USACE Over $40 Million

Mr. John Robinson, of Robinson, Stafford & Rude, Incorporated, has displayed Value Engineering leadership that repeatedly makes sure the U.S. Army Corps of Engineers Los Angeles District pleases its customers with team-produced, value-added proposals. In recent years his implemented proposals have directly saved over $40 million, and an additional $70 million will be saved on projects that are approved and awaiting construction. While the focus of Corps of Engineers' Value Engineering is to resolve federal problems and stretch federal taxpayers' resources, Mr. Robinson's work has indirectly provided similar benefits to state and local governments in California, Nevada, and Texas.

Special Award: USACE Civilian Gains Honors for 27 Years of Value Engineering Leadership

Ronald L. D'Amico gained special recognition for 27 years of Value Engineering leadership within the U.S. Army Corps of Engineers. His commitment to the program has resulted in over $20 million in cost savings and avoidance for the Pittsburgh District in the past ten years alone.

Army Communities of Excellence Program

The Army Communities of Excellence (ACOE) Program, managed by the Army's Assistant Chief of Staff for Installation Management, is not solely about having an attractive installation. It supports reinvention through a focus on quality-based reengineering of installation management processes and services at U.S. Army installations throughout the world. The real mission of the program is to provide excellent facilities and services in a quality environment. Army installations have an increasingly critical role in sustaining and launching Army forces worldwide. Striving for ever greater excellence in customer service and facilities contributes to the improvement of Total Army readiness.

The ACOE process provides for a variety of approaches that a commander can tailor to help any organization, command, or installation reinvent itself. Leaders and managers take advantage of the entrepreneurial talent within the community to develop better ways of assisting people and getting work done. It is a program that encourages ideas and initiatives.

Each year, Army communities are invited to participate in the program. Those who wish to take part must prepare a self-assessment, using the Army Performance Improvement Criteria to identify strengths and weaknesses. This assessment focuses on the entire community, with emphasis on continuous performance improvements, readiness, partnerships, customer service excellence, facility and environmental excellence, and the pride of people and organizations.

These self-assessments go to the major commands, which must review them and select only the "best of the best" to forward to Army level. All communities, regardless of size, are assessed against the Army Performance Improvement Criteria, not against each other.

At Army level, ACOE examiners study the self-assessments and select a limited number of communities for site visits. During these visits, they ascertain a community's effectiveness

relative to the APIC and identify top communities to serve as role models. The Chief of Staff, Army, approves and announces the winners. Winning communities receive monetary awards that must be used to benefit the entire community.

Award winners for 2000 included a Commander-in-Chief winner—the Army's top community—13 Chief of Staff, Army winners, and 12 Chief of Staff, Army finalists. The Commander-in-Chief winner was the U.S. Army Armament Research, Development, and Engineering Center (ARDEC), Picatinny Arsenal, New Jersey.

Chief of Staff, Army winners were:
Fort Stewart and Hunter Airfield, Georgia
Fort Benning, Georgia
Fort Rucker, Alabama
279th Base Support Battalion, Bamberg, Germany
Rock Island Arsenal, Illinois
Engineering and Support Center, Huntsville, Alabama
10th Area Support Group, Okinawa, Japan
Tobyhanna Army Depot, Tobyhanna, Pennsylvania
100th Division, Louisville, Kentucky
34th Support Group, Seoul, Korea
White Sands Missile Range, New Mexico
Maryland Army National Guard
Fort Belvoir, Virginia

Chief of Staff, Army finalists were:

Fort Carson, Colorado
Fort McPherson, Georgia
U.S. Army Armor Center and Fort Knox, Kentucky
235th Base Support Battalion, Ansbach and Illesheim, Germany
409th Base Support Battalion, Vilseck, Germany
20th Area Support Group, Camp Henry, South Korea
Camp Humphrey Area Support Group, South Korea
U.S. Army Garrison Hawaii, Schofield, Hawaii
Minnesota Army National Guard
Texas Army National Guard
Fort Dix, New Jersey
412th Engineer Command, Vicksburg, Mississippi

Army Ideas for Excellence Program: Suggester of the Year Awards

The Army Ideas for Excellence Program (AIEP) is an incentive program that encourages soldiers and civilians within the Department of the Army to submit ideas that, if adopted, will result in increased efficiencies and reduced costs. Annually, the Secretary of the Army recognizes the best ideas by presenting the Suggester of the Year Awards.

The 1999 Military Suggester of the Year was Chief Warrant Officer 3 Daniel S. Locher from the 101st Airborne Division (Air Assault), Fort Campbell, Kentucky. During an operational maintenance inspection, he recognized that there was no diagnostic test equipment for validating the coded interrogative and reply of the ANPPX-3 Mode IV Identification Friend or Foe (IFF) system used with the Avenger surface-to-air missile and gun system. He proposed the Army use an off-the-shelf commercial equivalent test set that could be modified to accurately measure the reliability of the AN/PPX-3 Mode IV IFF. The implementation of this suggestion will lessen the possibility of an Army aircraft being mistaken for an enemy.

The 1999 Civilian Suggester of the Year was Mr. Glenn Davis, Third U.S. Army, Fort McPherson, Georgia. He proposed that a predetermined exercise package—consisting of basic load equipment for a company-sized combined arms team, with supporting ammunition and supplies—be stowed at or near the external ramps of each Army War Reserve Large Medium-Speed Roll-on/Roll-off Ship. The earlier procedure had been to unload about

half the ship's cargo to get at and assemble the exercise equipment, then reload the non-exercise equipment—while units not participating in the exercise provided force protection. The change would require unloaders to handle only the exercise package and allow the exercise units to provide their own force protection. The result would be rapid and more economical cargo operations and elimination of the need for a separate protection force. The first time the new procedure was employed, it saved $1.18 million.

Government Technology Leadership Awards

Government Executive magazine sponsors the Government Technology Leadership Awards, which recognize teams that have made innovative contributions to the use of technology in government. This year, 21 programs were selected from 109 nominations. Two of these winners were Army organizations—Tripler Army Medical Center, Hawaii, and the U.S. Army Corps of Engineers.

Tripler Army Medical Center Creates Internet Tumor Board

After a patient has been diagnosed with breast cancer, hospitals often convene a tumor board, a panel of cancer specialists and general practitioners, to discuss care options and treatment management. But for Tripler Army Medical Center in Hawaii, such consultation is less simple. Tripler is the place where service members and their dependents come from far-flung bases in Guam, Japan, and Korea when diagnosed with breast cancer.

Most military facilities do not have cancer specialists. These clinics would send patients to Tripler, without appointments, because there was nowhere else. Many patients spent months waiting to see a specialist.

Now Tripler conducts weekly tumor boards on the Internet, using Microsoft's NetMeeting software. The Internet Tumor Board allows doctors to review digitized radiology pictures mailed to them and to type in their comments during the session.

Over the past two years, the Internet Tumor Board has prevented 19 unnecessary medical evacuations at a cost of about $5,000 each. Total estimated savings over the last two years are $95,000. Tripler has also added a nursing case manager who schedules all appointments with specialists such as surgical and radiological oncologists. This eliminates the long waits for specialists.

U.S. Army Corps of Engineers Pioneers "Meandering Path" Geophysical Explorations

Military base closures have left an estimated 15 million acres contaminated with unexploded bombs, artillery shells, and other ordnance on land that is now privately owned.

The Army Corps of Engineers is responsible for decontaminating these sites. Some are as small as a dozen acres, but others cover hundreds of acres. Regardless of the size of the property, the danger of searching for hidden ordnance on overgrown and possibly dangerous landscapes always looms large.

In the past, the Corps would deforest an entire site, at a cost of up to $2,500 an acre, to decrease the risk. Engineers used standard surveying techniques, which require a clear line of site. The Corps also used geophysical surveying, sending signals into the ground to investigate its contents.

With advances in Global Positioning System (GPS) technology, the Corps can now send a team out into the woods with a GPS receiver and a mobile geophysical surveying unit. The team takes what is called a meandering path through the brush, collecting data on the possibilities of buried ordnance. Computers and statistical models tell the engineers how far they

have to walk to accurately investigate a given site. After synchronizing the geophysical data with the GPS technology and uploading it to computers, the team can get an idea of where the site is contaminated.

Now teams clear forests only where they are sure of contamination. Estimated cost savings are $37.5 million.

The Real Rewards

Though many organizations have received awards for their efforts, the real rewards are the improvements in quality, efficiency, and service that result from forward thinking and initiative. Good business practices, critical self-assessment, and planning for long-range goals supported by Total Army Quality show that improved service and cost savings have become core goals across the Army.

Annex A. Command Submissions

A

Simulation, Training and Instrumentation Command

Soldier and Biological Chemical Command

E

F

Annex B. New Waivers

One tool available to the Army's Reinvention Centers and Laboratories is the ability to waive Army directives and request expedited waivers to Department of Defense (DoD) policies. During 1999, 23 new waivers were approved for implementation by Army organizations. Since the program began, 366 waivers of DoD and Army policies have been approved. Waivers have resulted in 139 directive changes and 44 exceptions to policy.

Acquisition/Contracting

Wo522 U.S. Army Forces Command

Title: Correction of Bidding Mistakes

Description: Waives the requirements of FAR 14.407-3(e) and AFAR 14.407-3(e) and AFAR 14.4074(d) that read "without power of redelegation," in order to approve the correction of mistakes in bids where the alleged mistake is less than $100,000. Action helps to streamline contracting procedures; provides the local Director of Contracting with flexibility and decision making authority; and reduces acquisition time by eliminating the requirement for Principal Assistant Responsible for Contracting approval.

Wo533 U.S. Army Forces Command

Title: One-time Deviations of Contract-Related Provisions Granted

Description: Waives the requirements of AFARS section 1.403, which at present restricts only to the Principal Assistant Responsible for Contracting (PARC) the delegated approval authority (from the Secretary) to grant one-time deviations of contract-related provisions in the Federal Acquisition Regulation (FAR), the Defense supplement thereto (DFARS), and the Army Supplement (AFARS). Such deviations are occasionally necessary for contracting officials in expediting urgent acquisitions otherwise subject to delay, while awaiting various administrative approvals directed by procurement regulations (i.e., FAR, DFARS, AFARS). Action expedites/streamlines the acquisition process; promotes innovation; reduces bureaucracy; saves time and effort; eliminates unnecessary reviews; and lessens the impact of processing delays on pre-award progress.

Community and Family Support

Wo526 Mission Support Lab

Title: Bingo Cash Receipts

Description: Waives requirement of AR 215-1, paragraph 8.7 Chapter (2), in order to allow payment of bingo cash prizes from daily cash receipts. Action removes the requirement that bingo prizes be paid from a bingo cash prize fund only.

Installation Management

Wo549 19th Theater Army Area Command

Title: Cease the Usage of "Facility Engineer Work Request" Form

Description: Waives the requirements of DA Pamphlet 420-6, Chapter 4, paragraph 4-2a(3), "Work Processing," in order for the Army to use AF Form 332, "Engineering Work Request," instead of using DA Form 4283, "Facility Engineer Work Request," to request all engineering work from the Directorate of Public Works. The Air Force form (AF 332) is computer generated and smaller (only 8-1/2 x 11 compared to the DA 4283, which is 8-1/2 x 14), which makes it easier to photocopy and send via e-mail. In addition, this initiative eliminates waste of four-part carbon paper, thereby being friendlier to the environment.

Wo551 U.S. Army Community and Family Support Center

Title: Commander Determines Whether Lifeguards Are Necessary

Description: Waives the requirements of AR 215-1, paragraph 8-22c(2); AR 385-15, paragraph 5b(5); and TB MED 575, paragraph 12-1, to allow the field commander to make decisions to provide lifeguards at recreation and official lodging facilities with swimming pools. Prior to any decision on the elimination of lifeguards, a risk analysis will be conducted to determine risk factors and effective protective measures to control identified risks. Under this proposal, recreation lodging and lodging facilities with swimming pools will adopt the State standard for staffing of pools associated with lodging facilities located in the state. In areas outside the United States, the standard will be that of the country or international agreement. If there is no standard, the commander will determine whether or not lifeguards will be required at recreation lodging and official lodging facility pools. Action brings Army recreation lodging and official lodging facility pools in line with hotel/motel pools in the commercial sector and will contribute to the economical and efficient management of the Army's recreation lodging and official lodging facility pools.

Logistics

Wo520 U.S. Army Communications-Electronics Command

Title: Perform Calibration and Repair Services for DoD

Description: Waives the requirements of AR 750-43, paragraph 6-5, in order to allow the U.S. Army Communications-Electronics Command, Directorate of Safety Risk Management, to perform calibration and repair services for DoD, the National Guard Bureau, and/or other federal agencies. Action reduces the amount of funds paid by other organizations for calibration support by as much as 30 percent and increases the level of service to customers.

Wo537 U.S. Army Special Operations Command

Title: Units Maintain Shop Stock and Prescribed Load List

Description: Waives requirements of AR 710-2, "Supply Policy Below the Wholesale Level," paragraphs 3-15(b), Chapter 3, in order to allow the 160th Special Operations Aviation Regiment (Airborne) designated units at the U.S. Army Special Operations Command to maintain both Shop

Stock and Prescribed Load List. The regulation standards do not specifically address units that are structured to perform both unit and direct support/general support level maintenance missions within its modified tables of organization and equipment document. It only addresses unit and direct support/general support maintenance missions separately. Action maintains the current level of efficiency of the 160th Special Operations Aviation Regiment (Airborne) designated units.

Wo542 19th Theater Army Area Command

Title: Self-service Supply Center Support (SSSCS) Eliminated

Description: Waives the requirements of AR 710-2, paragraph 3-12, page 45, "Self-Service Supply Center Support (SSSCS)," in order to eliminate all SSSCS activities in Korea, resulting in significant cost savings and better service to the customer. Action reduces labor and warehousing requirements, with estimated cost savings of approximately $3 million per year.

Military Law

Wo538 U.S. Army Medical Research and Materiel Command

Title: Review for Conformance to Army Policy and Interests

Description: Waives the requirements of AR 70-57, "Military-Civilian Technology Transfer," paragraphs 14d, 1-6d, and 1-7; AR 27-60, "Intellectual Property," paragraph 7-3, in order to eliminate mandatory forwarding of all Conformance to Army Policy and Interests of Cooperative Research and Development Agreements (CRDAs) and Patent License Agreements (PLAs) to the Army Domestic Technology Transfer Program Manager and the Intellectual Property Counsel of the Army for conformance review. A 30-day review period is allowed to disapprove or require modifications to these agreements. Action executes CRDAs and PLAs without the 30-day delay for Army level review; saves U.S. Army Medical Research and Materiel Command legal staff processing time; and saves processing and review staff for the Army Domestic Technology Transfer Program Manager and the Intellectual Property Counsel of the Army.

Operations/Plans

Wo524 Letterkenny Army Depot

Title: Staffing for Quarterly Inventories of Evidence

Description: Waives the requirements of AR 195-5, paragraph 3.2.b, to allow senior enlisted personnel in pay grade E-8 (or above) and GS-11 or an equivalent wage supervisor (or above), during periods where a commissioned or warrant officer is not available, to conduct required quarterly inventories of evidence stored in the evidence room. Action relieves the Commanding Officer of the requirement of being the only one eligible to conduct these required quarterly inventories at Letterkenny Army Depot.

Wo559 U.S. Army Developmental Test Command

Title: Other Organic Aircraft Utilized as a Method of Transportation

Description: Waives the requirements of AR 95-1, Paragraph 3-4, Other Official Use, and Paragraph 3-5, Operational Support Airlift (OSA) Missions which mandates the use the Joint Operation

Airlift Command or commercial means of travel to various locations where mission-essential Research, Development, Test and Evaluation (RDTE) activities are being conducted. This waiver allows Fort Rucker and White Sands Missile Range to use their own fixed-wing aircraft to support and execute RDTE requirements. This is similar to DoD's use of OSA aircraft as defined by DoD Directive 4500.56, Paragraph E2.2.2 (Other Official Travel). Implementation of the waiver is beneficial for a number of reasons to the U.S. Army Developmental Test Command test centers with organic fixed-wing aircraft. It enhances execution of the critical developmental test and evaluation mission, fulfills Aviator Training Program requirements, and saves time and money associated with transportation personnel involved in integrated process teams and actual testing.

Personnel Management

Wo532 U.S. Army Special Operations Command

Title: Temporarily Filling Critical Personnel Shortages

Description: Waives the requirements of AR 135-200 (Active Duty for Training, Annual Training, and Active Duty for Special Work (ADSW) of Individual Soldiers), paragraph 6-1, to allow U.S. Army Special Operations Command the authority to use ADSW personnel for temporarily filling critical personnel shortages among full-time Unit Support (FTUS) personnel in its subordinate Army Reserve Component (RC) units. Action gives unit commanders and staff directorates the capability to temporarily fill authorized Full-Time Unit Support (FTUS) personnel vacancies expeditiously thus achieving efficiency and effectiveness in readiness and mission accomplishlments.

Wo534 U.S. Army Operations Support Command

Title: Registering in the Priority Placement Program (PPP) and Repromotion Programs (RP)

Description: Waives the requirements of DoD Regulation 1400.20-1-M, Chapter 3, paragraph A, parts 1, 2, and 6. This permits firefighters—who are now entitled only to regular, recurring overtime and who are being involuntarily reassigned to non-firefighter positions in the same or one lower pay grade in a reduction-in-force (RIF)—to register in the PPP and RP programs. Action helps special salary employees, such as firefighters, to continue in their chosen career field, thus benefiting the career field in general and the gaining installation(s), and creates an additional recruitment source for other DoD agencies.

Wo535 U.S. Army Forces Command
and
Wo555 Civilian Human Resource /U.S. Army Europe & 8th Army

Title: Higher Monetary Threshold for On-the-Spot (OTS) Awards

Description: Waives the requirements of AIR 672-20, paragraph 4-4, to allow a much higher monetary threshold for on-the-spot (OTS) awards to deserving civilian employees. Action raises the OTS award from $250 to $500, which provides a more meaningful award to give to deserving employees and teams for their day-to-day accomplishments; thereby enhancing morale and productivity.

Wo540 19th Theater Army Area Command

Title: Approval Authorization for Living Quarters Allowances

Description: Waives the requirement of Department of State Standardized Regulations, Section 031.12b and c, in order to lift restrictions related to granting of living quarters allowances (LQA) to employees. This ensures that approval authorization for LQA for local U.S. civilian hires in Area I can be redelegated from Eighth U.S. Army to Commander, Area 1. Action helps to attract qualified candidates for employment in a "hard-to-fill" area.

Wo553 Civilian Human Resource Management/U.S. Army Europe & 8th Army

Title: Senior Raters To Approve Requested Leave Restoration

Description: Waives the requirements of AR 690-990-2, Book 630, paragraphs S3-6, which detail approval levels for forfeited annual leave. Title 5, Code of Federal Regulations, states that only the head of an agency or someone designated in that person's behalf may approve annual leave restoration. This waiver gives delegation authority to senior raters to approve forfeited annual leave restoration based on exigencies of major importance. This delegation of authority is in accordance with 5 CFR 630.305 and covers only annual leave that was scheduled in advance. The benefits of this waiver are reduced administrative processing time and elimination of multiple steps in the decision process between the supervisor and Civilian Personnel Operating Center.

Wo554 Civilian Human Resource / U.S. Army Europe & 8th Army

Title: Eliminate the Requirement to Document Details of Less than 120 Days

Description: Waives the requirement of DA Personnel Command Message, dated 031430Z March 1989, Subject: Documentation of Details, to document all details within the Department of the Army. This waiver eliminates the requirement to document details with a personnel action if the detail is less than 120 days and does not include higher graded duties or detailing to positions with promotion potential. Waiver benefits include reduced administrative processing time and elimination of multiple steps in the decision process between the supervisor and Civilian Personnel Operating Center; it also frees the PERSACT lines of multiple actions that take up time and space and that have no real benefit to the organization.

Wo557 U.S. Army Tank-Automotive and Armaments Command

Title: Changes to Record Keeping Requirement for Training Documents

Description: Waives Headquarters, Department of the Army requirements contained in U.S. Total Army Personnel Command (TAPC CPP-T) Memorandum, Subject: New Legislation on Employee Training, 22 September 1994, Paragraph 3, and Department of the Army, Office of the Assistant Secretary for Manpower and Reserve Affairs Memorandum, Subject: Change to Record Keeping Requirement for Training Documents, 13 September 1996. These policy documents require the input of all mandatory training into the Defense Civilian Personnel Data System (DCPDS). As a result of this waiver, the Army Tank-Automotive and Armaments Command no longer uses TRAIN, an automated system to document training, to record short mandatory training that is less than eight hours in length in DCPDS. Examples of this type of training include the Safety/Security Wellness Standdown Day; the EEO Office's Prevention of Sexual Harassment training, and the Legal Office's ethics training. Proponent organizations will continue to use their own local databases to document all training. As a result of waiver implementation, Anniston

Army Depot alone documented a yearly cost avoidance of approximately $204,600.

Safety

Wo541 Mission Support Lab (U.S. Army Training & Doctrine Command)

Title: Army Toxic Chemical and Explosive Safety Standards: Delegation of Waivers and Exemptions

Description: Waives requirements of AR 385-61 (U.S. Army Chemical Agent Safety Program) and AR 385-64 (U.S. Army Explosives Safety Program) to allow delegation of high risk waiver decisions relating to Explosive Safety Standards to installation general officer (GO) level. Action helps to standardize risk decision authority and deviation (waiver/exemption) approval authority within Headquarters, U.S. Army Training and Doctrine Command.

Wo556 19th Theater Army Area Command

Title: Hiring School Bus Monitors

Description: Waives the requirements of DoD Directive 4500.36R, "Management, Acquisition and Use of Motor Vehicles" (March 1994), which states that school bus monitors may not be employed by the DoD except where required by host nation statute. Further, the DoD Policy limits the use of safety attendants only to the following specific categories: vehicles transporting handicapped students, those enrolled in a Department of Defense Dependent School (DoDDS) preschool program, and students in kindergarten through the 2nd grade. The waiver allows local commanders and DoDDS authorities to assign safety attendants on the basis of local needs on school buses; permits local authorities to employ bus monitors as needed to maintain order and discipline on school buses; increases the safety of the children; and ensures compliance with existing force protection needs.

Security/Physical

Wo545 U.S. Army Operations Support Command

Title: Security of Unclassified Army Property

Description: Waives requirements of AR-51, Security of Unclassified Army Property (Sensitive and Nonsensitive), Appendix D 4, paragraph a, in order to allow the use of Sargent and Greenleaf (S&G) Model 8077A combination padlocks on key depositories on interior of buildings. Action precludes the cost of affixing new depositories permanently to a wall and the administrative cost of procuring new items; does not compromise security of unclassified Army property or key depositories, as the combination padlocks (wheel-type S&G) in use are comparable to the stated tumbler-type combination padlocks.

Wo547 U.S. Army Operations Support Command

Title: Security of Unclassified Army Property

Description: Waives the requirements of AR 190-1, "Security of Unclassified Army Property (Sensitive and Nonsensitive)," 30 Sep 93, paragraph D-5a, to allow the continuing use of existing master key systems to protect unclassified Army property within Combat Equipment Group,

Europe (CEG-E). Action brings CEG-E into compliance with the regulation while waiting for funds to change the current installation lock and key system. In addition, it saves the costs of removal and replacement of keys, lock cylinders, and padlocks for each of five installations that now use master key system.

Annex C. Points of Contact

Success Story-Points of Contact

Center for Army Analysis (CAA):

CAA Communicates Direction Throughout the Year, p. 56; **CAA Plans for Responsiveness**, p. 49; **CAA Surveys Employees for Quality and Productivity Improvement**, p. 49; **CAA Provides Near-Real Time, In-the-Field Decision Support Analysis**, p. 116; **High-Speed Network Gives CAA Greater Productivity—and Less Paper** (POC: Mr. Ronald Iekel, Center for Army Analysis: 703-806-5578/DSN: 656-5578/Fax: 703-806-5725; E-mail: iekel@caa.army.mil), p. 111.

Letterkenny Army Depot (LEAD):

Letterkenny Army Depot Career Center Launches "Special Request" Program (POC: Vickie Locke, AMSAM-LE-CO-CC: Telephone: 717-267-5736/DSN: 570 5736/Fax: 717-267-5398/Fax: DSN: 570-5398; E-mail: vlocke@emh1.lead.army.mil), p. 96; **Letterkenny Responds to Spring Valley Unexploded Ordnance Emergency** (POC: Dennis Reed: Telephone: 717-267-8376/DSN: 570-8376; E-mail: dreed@emh1.lead.army.mil), p. 36.

U.S. Army Aviation & Missile Command (AMCOM):

AMCOM Uses Board of Directors To Chart Course, p. 24; **Puts the Vision on Television** (POC: Ms. Cheryl Wise: Telephone: 256-313-0638/DSN: 897-0638; E-mail: cheryl.wise@redstone.army.mil), p. 26; **AMCOM Sets a Course: A Strategic Plan and a Transition**, p. 48; .**AMCOM's Missile Logistics Directorate Finds Better Price for Item Needed in Kosovo**, p. 139; **AMCOM Performs Multiple Missions for Most Customers** (POC: Fred Carr: Telephone: 256-876-1440/DSN 746-1440; E-Mail: carr-fw@redstone.army.mil and POC: James McGraw: Telephone: 256-313-0851/DSN 897-0851; E-Mail: james.mcgraw@redstone.army.mil), p. 60; **AMCOM Puts Its Depot Monthly Reporting System Online** (POC: Deborah Griffin: Telephone: 256-313-1958/ DSN 897-1958; E-Mail: deborah.griffin@redstone.army.mil), p. 70; **AMCOM Strategic Planning Office Performs Organizational Self-Assessment** (POC: James McGraw: Telephone: 256-313-0851/DSN 897-0851; E-Mail: james.mcgraw@redstone.army.mil), p. 77; **AMCOM Establishes Acquisition Center University** (POC: Fred Carr: Telephone: 256-876-1440/DSN 746-1440; E-Mail: carr-fw@redstone.army.mil), p. 85; **AMCOM Legal Office Gives Tax Assistance and Ethics Guidance to Soldiers** (POC: COL Roger Cornelius: Telephone: 256-876-7153/DSN 746-7153, E-Mail: roger.cornelius@redstone.army.mil), p. 96; **AMCOM Gains Letterkenny and Corpus Christi Army Depots in Successful Transition** (POC: Marilyn Phillips: Telephone: 256-313-1604/DSN 897-1604; E-Mail: phillips-md @redstone.army.mil and POC: Louise Carter, DSN 746-1605/Com 876-1605, Fax DSN 746-2668/Com 876-2668, email: carter-lw@redstone.army.mil), p. 117; **AMCOM Implements Webdesk To Make Internet Administration Easier** (POC: Wally Gonzalez: Telephone: 256-313-2125/DSN 897-2125; E-Mail: gonzalez-wa@redstone.army.mil), p. 115; **AMRDEC and Redstone Technical Test Center Pioneer "Hardware-in-the-Loop" Simulation for Weapon System Acquisition** (POC: Lana A. Hargrove: Telephone: 256-955-6734/DSN 645-6734; E-Mail: rdec-labdemo@redstone.army.mil), p. 136.

C. Marquet, Director, HQ CECOM RDEC: Telephone: 732-427-2686; E-mail: marquet@mail1.monmouth.army.mil), p. 46; **CERDEC Applies Quantifiable Performance Measures to Technical and Management Objectives** (POC: Ms. Rose Mary Matura, HQ RDEC, Business Analysis Office: Telephone: 732-427-4634; E-mail: matura@mail1.monmouth.army.mil), p. 71; **CERDEC Announces New Degree: Master of Technology Management** (POC: Ms. Veronica Frank, HQ RDEC, Employee Development Team: Telephone: 732-427-2022; E-mail: frank@ mail1.monmouth.army.mil), p. 84; **CERDEC's Space and Terrestrial Communications Sends Information Security Engineers to Formal Training and Conferences**, p. 87; **CERDEC Refocuses Work Responsibilities for Better Personnel Use** (POC: Ms. Karen Gornto, HQ RDEC, Space and Terrestrial Communications Directorate: Telephone: 732-532-0203; E-mail: gornto@mail1.monmouth.army.mil), p. 80; **CERDEC Participates in Consortium for Advanced Studies** (POC: Ms. Veronica Frank: Telephone: 732-427-2022; E-mail: frank@mail1.monmouth.army.mil), p. 84.

U.S. Army Dental Command (DENCOM):

DENCOM's Dental Care Reengineering Initiative Is a Corporate Philosophy for Improving Dental Services (POC: COL Frank Nasser, Dental Care Reengineering Initiative: Telephone: 210-221-7899/Fax: 210-221-8810/DSN: 471-7899; E-mail: Francis.Nasser@amedd.army.mil), p. 25; **DENCOM's Corporate Dental Application Speeds Reporting of Dental Data** (POC: MAJ Mark Webb: Telephone: 210-221-8865/ Fax: 210-221-8810/DSN: 210-471-8865; E-mail: J.Webb@amedd.army.mil), p. 28; **Fort Drum DENTAC Uses Tailored Software To Forecast Civilian Pay and Benefits** (POC: COL W. John Luciano, Commander: Telephone: 315-772-4342/Fax: 772 –9692/DSN: 341-4342; E-mail: John.Luciano@amedd.army.mil), p. 76.

U.S. Army Europe & Seventh Army (USAREUR):

USAREUR Civilian Personnel Directorate Develops Automated Suspense System (POC: Mrs. Jo-Ruth Patterson: Telephone: 011-49-6221-57-3935/DSN: 375-3935/Fax: DSN: 375-6662, Telephone: 011-49-6221-57-6662; E-mail: pattersonjo@hq.hqusareur.army.mil), p. 29; **General Support Center-Europe Introduces Virtual Measuring Technique** (POC: Wes Copeland, Director Logistics Operations, General Support Center Europe: Telephone: 483-8160), p. 117.

U.S. Army Forces Command (FORSCOM):

Fort McPherson and Fort Gillem Organize a Civilian Transition Program (POC: Barbara A. Schwartz, Director of Personnel Operations: Telephone: 404-464-1730; E-mail: schwartb@forscom.army.mil), p. 95; **Fort Lewis's Hazardous Material Control Center Uses a "Pharmacy" Concept to Cut Costs and Protect the Environment** (POC**:** Frank Portillos: Telephone: 253-966-0460/DSN: 347-0460/Fax: 347-7044; E-mail: portillf@lewis.army.mil), p. 33; **Fort Lewis Deploys Installation Maintenance Personnel to Support 3rd Brigade** (POC: Monty Thiesse: Commercial: 253-967-4251/DSN: 357-4251/Fax: 357-5199; E-mail: thiesset@lewis.army.mil), p. 109; **Fort Campbell Encourages Employee Involvement in the Commercial Activities Process** (POC: Leslie Carroll: DSN: 635-7680; E-mail: carrolll@emh2.campbell.army.mil), p. 95; **Fort Campbell Implements a Self-Directed Work Team**, p. 80; **Fort Campbell Army Airfield Operation Moves to Readiness Business Center** (POC: Jim Pelham, Fort Campbell Readiness Busi-

Purpose Mask (POC: COL Stephen V. Reeves, PM NBCDS: Telephone: DSN: 584-2566; Email: stephen.reeves@sbccom.apgea.army.mil), p. 54; **SBCCOM Weighs Competing Risks to Employee Safety** (POC: Sheldon Orr, TEU: DSN: 584-8532; Email: sheldon.orr@sbccom.apgea.army.mil), p. 92; **Soldier System Center Has the Soldiers Meet with Those Who Make the Rations** (POC: Brian M. Hill: DSN: 256-4501; Email: bhill@natick-emh2.army.mil), p. 98; **SBCCOM Redesigns Military Ration Procurement** (POC: Judy Aylward: DSN: 256-4448; Email: jaylward@natick-emh2), p. 102; **SBCCOM Redesigns Chemical Agent Detector for Faster Start Time, Greater Reliability** (POC: Mr. Louis Kosydar: DSN: 584-2147; Email: louis.kosydar@sbccom.apgea.army.mil), p. 109; **SBCCOM Buys Chemical Defense Equipment for "Go to War" Readiness** (POC: John Kerch, Rock Island Arsenal: DSN: 793-6818), p. 116; **SBCCOM Develops Innovative Information System To Support Logistics Decisions** (POC: Stephen Rei: Telephone: 508- 233-5063; Email: srei@natick-emh2.army.mil), p. 112; **SBCCOM Partners with Defense Supply Center-Philadelphia To Support Maintenance Shelters** (POC: Frank Kostka and Donna Stock: DSN: 256-4692/Fax DSN: 256-4005; Email: fkostka@natick-emh2.army.mil; dstock@natick-emh2.army.mil), p. 132; **SBCCOM Cuts Costs for Decontamination Training** (POC: William G. Argiropoulos: Telephone: 410-436-5690/DSN: 584-5690; Email: wgargiro@sbccom.apgea.army.mil), p. 140; **At SBCCOM, Service Representatives Achieve Cost Reduction Through Partnering** (POC: Ms. Nancy Kammerer: DSN: 584-3030; Email: nancy.kammerer@sbccom.apgea.army.mil), p. 140.

U.S. Army Tank-automotive and Armaments Command-Armament, Research, Development and Engineering Center (TACOM-ARDEC):

TACOM-ARDEC Forms Creative Partnering Arrangements (POC: Ms. Constella Zimmerman, HQ RDEC, Business Analysis Office: Telephone: 732-427-2204; E-mail: Zimmerc@mail1.monmouth.army.mil), p. 37.

U.S. Army Training & Doctrine Command (TRADOC):

TRADOC Base Operations Support Builds Strategic Plan (POC: Andrew Stewart: Telephone: 757-727-3143/DSN: 680-3143; E-mail: stewarta@monroe.army.mil), p. 50; **TRADOC Base Operations Support Creates Database for "Information Dominance"** (POC: Mr. Robert L. Houston: Telephone: 757-728-5018/DSN: 680-5018; E-mail: houstonb@monroe.army.mil), p. 69; **TRADOC Develops Army Training XXI Technical Architecture** (POC: Mr. Frank Polster: Telephone: 757-878-5163, ext. 220/DSN: 927-5163, ext. 220; E-mail: polsterf@atsc.army.mil), p. 84; **Fort Gordon Military Intelligence Battalion Designs and Fields First Multispectral SIGINT Terminal** (POC: MAJ Daiga, Executive Officer, 201st MI Battalion: Telephone: 706-791-9008/DSN: 780-9008/Fax: 706-791-9446; E-mail: daigae@mi513.gordon.army.mil), p. 104; **Fort Gordon Inaugurates Army Courtroom of the Future with Video Teleconferencing**, p. 116; **Fort Gordon Opens Self-Storage Facilities for Post Residents** (POC: Pat Buchholz: Telephone: 706-791-3752/DSN: 780-3752; E-mail: buchholp@emh.gordon.army.mil), p. 97; **TRADOC BASOPS Model Aids in Mission Budgeting** (POC: Mr. Nick Fuller: Telephone: 757-728-5204/DSN: 680-5204; E-mail: fullern@monroe.army.mil), p. 75; **Fort Benning Creates a One-Stop Shop for Maintenance and Repair** (POC: Mr. Glenn Todd: Telephone: 706-545-2117/DSN: 835-2117/Fax: 703-545-7814; E-mail: toddg@benning.army.mil), p. 67.

Reinvention Centers and Laboratories: Points of Contact

AMC TYPE	NAME OF LAB/CTR	SENIOR POC	DSN	COMM	E-MAIL
Center	U.S. Army Materiel Command	Stephen V. Balint	767-8337	703-617-8337	sbalint@hqamc.army.mil
Lab	Letterkenny Army Depot	Richard W. Ramsey	570-9439	717-267-9439	ricramse@emhl.lead.army.mil
Lab	U.S. Army Aberdeen Test Center	Harry V. Cunningham	298-4592	410-278-4592	hcunning@atc.army.mil
Lab	U.S. Army Aviation and Missile Command	Cheryl A. Wise	897-0638	256-313-0638	cheryl.wise@redstone.army.mil
Lab	U.S. Army Communications-Electronics Command	Marc W. Gutleber	992-1880	732-532-1880	gutleber@maill.monmouth.army.mil
Lab	U.S. Army Operations Support Command	George B. Robinson	793-3081	309-782-3081	robinsong@osc.army.mil
Lab	U.S. Army Security Assistance Command	Richard G. Alpaugh	767-8383	703-617-8383	ralpaugh@usasac-emh2.army.mil
Lab	U.S. Army Soldier and Biological Chemical Command	James J. Schmid	584-3662	410-436-3662	james.schmid@sbccom.apgea.army.mil
Lab	U.S. Army Tank-automotive and Armaments Command	Barbara L. Kettler	786-7901	810-574-7901	kefflerb@tacom.army.mil
S&T Lab	Edgewood Chemical Biological Center	James J. Schmid	584-3662	410-436-3662	james.schmid@sbccom.apea.army.mil
S&T Lab	U.S. Army Aviation and Missile Command/Research, Development & Engineering Center	David E. Knepper	746-1522	256-876-1522	david.knepper@redstone.army.mil

AMC (continued)

TYPE	NAME OF LAB/CTR	SENIOR POC	DSN	COMM	E-MAIL
S&T Lab	U.S. Army Communications-Electronics Command Research, Development, and Engineering Center	Thomas J. Sheehan	987-4465	732-427-4465	sheehan@maill.monmouth.army.mil
S&T Lab	U.S. Army Soldier and Biological Chemical Command, Soldier Systems Center	Len E. Dube	256-4234	508-233-4234	ldube@natick-emh2.army.mil
S&T Lab	Research, Development, and Engineering Center	Gregory A. Schmittling	786-6539	810-574-6539	schmittg@tacom.army.mil
ARNGB					
Lab	Logistics and Environment Directorate	CW4 Steven L. Adee	327-4163	703-607-4163	adees@ngb-arng.ngb.army.mil
ATEC					
Lab	U.S. Army Developmental Test Command	Howard L. Wallace	298-1243	410-278-1243	wallacel@dtc.army.mil
CFC					
Lab	19th Theater Army Area Command	COL A. Allen Rasper	315-768-7201	011-82-534-70-7201	raspera@usfk.korea.army.mil
FORSCOM					
Center	U.S. Army Forces Command	Gary J. Mastrodonato	367-5408	404-464-5408	mastrodg@forscom.army.mil
HQDA					
Center	HQDA Reinvention Center	COL John W. Morris	225-0294	703-695-0294	morrisjw@hqda.army.mil
HQDA Lab	Army XXI Acquisition Reform	Ron A. Mlinarchik	664-7220	703-604-7220	mlinarcr@sarda.army.mil

HQDA (continued)

TYPE	NAME OF LAB/CTR	SENIOR POC	DSN	COMM	E-MAIL
HQDA Lab	Force Management and Strategy, HQDA Lab	Robert Bartholomew III	227-9187	703-697-9187	barthr@hqda.army.mil
HQDA Lab	Human Resource XXI Business Unit, HQDA Lab	Naomi E. Lynch	332-2982	703-602-2982	lynchne@hqda.army.mil
HQDA Lab	Human Resources Management, HQDA Lab	Joseph R. Selman	227-1822	703-697-1822	selmajr@hqda.army.mil
HQDA Lab	Installations & Facilities Management, HQDA Lab	Yvonne E. Wildanger	222-9237	703-692-9237	wildaye@hqda.army.mil
HQDA Lab	Intelligence, HQDA Lab	Lance P. Sprowls	664-2432	703-32	lance.sprowls@hqda.army.mil
HQDA Lab	Logistics Management, HQDA Lab	William B. Croom	227-5741	703-697-5741	croomw@sarda.army.mil
HQDA Lab	Medical (OTSG), HQDA Lab	Emily F. Bright	761-8291	703-681-8291	emily.bright@otsg.amedd.army.mil
HQDA FOA					
Lab	Center for Army Analysis	Ronald J. Iekel	656-5578	703-806-5578	iekel@caa.army.mil
Lab	U.S. Army Logistics Integration Agency	Geraldine V. Garrett	767-7046	703-617-7046	ggarrett@hqda.army.mil
INSCOM					
Lab	U.S. Army Intelligence and Security Command	Robyn J. Walick	235-1923	703-706-1923	qwalic@vulcan.belvoir.army.mil
MEDCOM					
Center	U.S. Army Medical Command	Fay Hendrix	471-7360	210-221-7360	fay.hendrix@amedd.army.mil

MEDCOM (continued)

TYPE	NAME OF LAB/CTR	SENIOR POC	DSN	COMM	E-MAIL
Lab	U.S. Army Center for Health Promotion and Preventive Medicine	Sara A. Parker	584-4737	410-436-4737	sara.parker@amedd.army.mil
Lab	U.S. Army Dental Command	COL John W. Luciano	471-7899	210-221-7899	john.luciano@amedd.army.mil
Lab	U.S. Army Garrison, Fort Sam Houston	Chris D. Hilliard	471-2546	210-221-2546	chris.hilliard@cen.amedd.army.mil
Lab	U.S. Army Medical Department Activity, Fort Knox	CPT Lee W. Bewley	464-9744	502-624-9744	lee.bewley@na.amedd.army.mil
Lab	U.S. Army Medical Information Systems and Services Agency	Monica A. Yacenda	None	210-637-2498	monica.yacenda@cen.amedd.army.mil
S&T Lab	U.S. Army Medical Research and Materiel Command	COL Leslie A. Raulin	343-7074	301-619-7074	leslie.raulin@det.amedd.army.mil

PERSCOM

S&T Lab	U.S. Army Research Institute for the Behavioral and Social Sciences	Dr. Harold Wagner	767-8622	703-617-8622	wagner@ari.army.mil

TRADOC

Center	U.S. Army Training & Doctrine Command	James R. Freeman	680-5156	757-728-5156	freemanj@monroe.army.mil
Lab	Combat Development Reinvention Lab, TRADOC	Sean A. O' Malley	680-3478	757-727-3478	omalleys@monroe.army.mil
Lab	Doctrine Reinvention Lab, TRADOC	Ronald E. Walkup	680-3691	757-727-3691	walkupr@monroe.army.mil

TRADOC (continued)

TYPE	NAME OF LAB/CTR	SENIOR POC	DSN	COMM	E-MAIL
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Annex D. Acronyms

A

AAFES	Army & Air Force Exchange Service
AAN	Army After Next
ACOE	Army Communities of Excellence
ACU	Acquisition Center University
AFMIC	Armed Forces Medical Intelligence Center
AFTB	Army Family Team Building
AIEP	Army Ideas for Excellence Program
AMC	Army Materiel Command
AMCOM	Army Aviation and Missile Command
AMEDD	Army Medical Department
AMRDEC	Aviation and Missile Research, Development, and Engineering Center
APG	Aberdeen Proving Ground
APIC	Army Performance Improvement Criteria
ARDEC	Armament Research, Development, and Engineering Center
ARL	Army Research Laboratory
ASG	Area Support Group
ASID	Army Systems Integration Database
ATC	Aberdeen Test Center
ATSC	Army Training Support Center
ATTA	Army Training Technical Architecture

B

BASOPS	Base Operations
BAT	Base Operations Assessment Team
BOLD	Base Operations Opportunity Leveraging and Development
BPR	Business Process Reengineering
BSB	Base Support Battalion

C

C4I2WS	Command, Control, Communications, Computers, Information, Intelligence, Warfare, and Sensors
CAA	Center for Army Analysis
CAFAP	Consumer Affairs and Financial Assistance Program
CART	Collection, Analysis, and Reporting Terminal
CBDCOM	Chemical and Biological Defense Command
CDA	Corporate Dental Application

CECOM	Communications-Electronics Command
CERDEC	Communications-Electronics Command Research, Development, and Engineering Center
CIS	Continuous Improvement System
CLERK	Corps Library of Electronic Record Keeping
CNG	Compressed Natural Gas
CONUS	Continental United States
CREST	Career Related Experience in Science and Technology
CRREL	Cold Regions Research and Engineering Laboratory
CSA	Chief of Staff, Army

D

DACH-AIR	Darnall Army Community Hospital—Asthma Information and Resources
DAU	Defense Acquisition University
DCRI	Dental Care Reengineering Initiative
DCSBOS	Deputy Chief of Staff for Base Operations Support
DCSINT	Deputy Chief of staff for Intelligence
DENCOM	U.S. Army Dental Command
DENTAC	U.S. Army Dental Activity
DLA	Defense Logistics Agency
DoD	Department of Defense
DSN	Defense Switched Network
DTC	Developmental Test Command

E

EPA	Environmental Protection Agency

F

FORSCOM	U.S. Army Forces Command
FY	Fiscal Year

G

GAO	Government Accounting Office
GCS	Guidance and Control Section
GPRA	Government Performance Results Act
GPS	Global Positioning System
GSA	General Services Administration

H

HEAT	Higher Education and Applied Technology
HMCC	Hazardous Material Control Center

HMMWV	High-Mobility Multipurpose Wheeled Vehicle
HTI	Horizontal Technology Integration
HWIL	Hardware in the Loop

I

IFF	Identification Friend or Foe
ILDSS	Innovative Logistics Decision Support Solution
IMMC	Integrated Materiel Management Center
IMPAC	International Merchant Purchase Authority Card
INS	Immigration and Naturalization Service
INSCOM	U.S. Army Intelligence and Security Command
IOC	Industrial Operations Command
IPT	Integrated Product Team
ISO	International Organization for Standardization
ISR	Intelligence, Surveillance, and Reconnaissance

L

LRMC	Landstuhl Regional Medical Center

M

MEDCOM	Medical Command
MEDDAC	Medical Department Activity
MLRS	Multiple Launch Rocket System
MRE	Meal, Ready To Eat
MSC-K	Materiel Support Center-Korea

N

NGIC	National Ground Intelligence Center
NPR	National Partnership for Reinventing Government
NVESD	Night Vision and Electronic Sensors Directorate

O

OMA	Operations & Maintenance, Army
OPM	Office of Personnel Management
OPTEMPO	Operating/Operations Tempo
OSC	Operations Support Command

P

PAT	Process Action Team
PEO	Program Executive Officer
PM	Program Manager

PTN	Paint The Night

Q

QMB	Quality Management Board

R

R&D	Research and Development
RTTC	Redstone Technical Test Center

S

SARDA	Secretary of the Army for Research, Development, and Acquisition
SBCCOM	Soldier and Biological Chemical Command
SCEP	Student Career Experience Program
SIGINT	Signals Intelligence
SINCGARS	Single Channel Ground and Airborne Radio System
SMART	Simulation and Modeling for Acquisition, Requirements, and Training
SoSI	System of Systems Integration
SPV	Subsistence Prime Vendor
SSCOM	Soldier Systems Command
S&T	Science and Technology
S&TCD	Space & Terrestrial Communications Directorate
STARS	Science and Technology Academic Recognition System
STRAC	Standards in Training Commission
STRICOM	Simulation, Training, and Instrumentation Command

T

TAACOM	Theater Army Area Command
TACOM	Tank-automotive and Armaments Command
TACOM-ARDEC	Tank-automotive and Armaments Command—Armament Research, Development, and Engineering Center
TAQ	Total Army Quality
TENCAP	Tactical Exploitation of National Capabilities
TERC	Total Environmental Restoration Contract
TRADOC	Training and Doctrine Command

U

USACE	U.S. Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAIC	U.S. Army Intelligence Center
USAMISSA	U.S. Army Medical Information Systems & Services Agency

USAREUR	U.S. Army Europe
USASC	U.S. Army Signal Command
USASOC	U.S. Army Special Operations Command
USATSC	U.S. Army Training Support Center

V

VE	Value Engineering
VISION	Versatile Information Systems Integrated Online Nationwide

W

WISE	Women in Science and Engineering
WIT	Wireless Internetworking Testbed